From: Veronica Lebron <Veronica@robertsilversteinlaw.com>
Sent time: 06/01/2020 05:38:43 PM
To: mindy.nguyen@lacity.org; vince.bertoni@lacity.org
Cc: Dan Wright <Dan@robertsilversteinlaw.com>; Esther Kornfeld <Esther@robertsilversteinlaw.com>; Robert Silverstein <Robert@robertsilversteinlaw.com>
Subject: Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

Dear Ms. Nguyen:

Please click on below link containing our letter for the above-referenced matter.

https://www.dropbox.com/s/e6xgr2dfc4j2nic/6-1-20%20%5BSCAN%5D%20Initial%20Comment%20On%20%26%20Objections%20To%20DEIR%20for%20Hollywood%20Center%20Project.pdf?dl=0

We had difficulties assembling the documents because of the file size. However, everything should be readable and totals 2,596 pages.

Please confirm receipt. Thank you.

Veronica Lebron
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June 1, 2020

VIA EMAIL vince.bertoni@lacity.org;
mindy.nguyen@lacity.org
Vincent Bertoni, Planning Director
Mindy Nguyen, City Planner
City of Los Angeles, Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012

Re: Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

Dear Mr. Bertoni and Ms. Nguyen:

I. INTRODUCTION AND PRELIMINARY OBSERVATIONS.

This firm represents StopTheMillenniumHollywood.com ("StopMillennium"), a community group focused on securing a livable environment and honesty in LA City government decision making.

From 2013-2019, StopMillennium succeeded in overturning the City's illegal approvals for a similar mega-project, on the same site, by the same developer. (Incredibly, that same developer, Millennium Partners, is responsible for the notorious Leaning Tower of San Francisco.) StopTheMillenniumHollywood.com vs. City of Los Angeles, et al. (LASC Case No. BS144606; Court of Appeal Case No. B282319; CA Supreme Court Case No. S258643).

We prevailed at trial, the Court of Appeal, and the California Supreme Court. Our lawsuit exposed repeated violations of law and abuses by Los Angeles City officials. It also resulted in an appellate opinion that has helped all Californians. (**Exhibit 1**.)

Although Millennium seeks to distance itself from its tainted brand due to our successful litigation, the international scandal surrounding Millennium's slipshod construction of the Millennium Tower in San Francisco, and the 7.0 Hollywood Earthquake Fault (more on that below) running through its Hollywood site, "Hollywood

Center" is basically a redo of the original failed, and still illegal project. We hereafter refer to the Hollywood Center project as the "Project".

As discussed below, the 13,000-page Draft Environmental Impact Report and technical appendices ("DEIR") for the Project – forced on the public with no extension of time to comment granted, despite the COVID pandemic, and now rioting, curfews and the National Guard on the streets – is a disgrace. The DEIR is also a procedural and substantive sham.

From our prior lawsuit's spotlighting of multiple illegal acts by City officials in approving the original project and its EIR (see also the related May 20, 2020 Los Angeles Times article, "*Here's a closer look at the ex-deputy mayor enmeshed in City Hall corruption probe*" [**Exhibit 2**][1]), and from the many requests for extension of the public comment period, the City knows the current Project is generating tremendous controversy.

As our Supreme Court has held:

> "The EIR is . . . intended 'to demonstrate to an **apprehensive citizenry** that the agency has, in fact, analyzed and considered the ecological implications of its action.' [Citations.] Because the EIR must be certified or rejected by public officials, it is a document of accountability. . . . The EIR process protects not only the environment but also informed self-government." Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 392 (emphasis added).

In another California Environmental Quality Act ("CEQA") case where the City lost, the Court of Appeal explained:

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[1] https://www.latimes.com/california/story/2020-05-20/federal-corruption-investigation-la-city-hall-ray-chan

We specifically request that all hyperlinks in this letter (and in all other objections letters submitted by all other persons, entities and groups) be downloaded and printed out and/or downloaded, submitted to the agency, and included in the City's control file and administrative record for the Project.

> "The fundamental goals of environmental review under CEQA are information, participation, mitigation, and accountability." Lincoln Place Tenants Ass'n. v. City of Los Angeles (2007) 155 Cal.App.4th 425, 443-444.

Yet City officials and Millennium are proceeding with the utmost speed, racing for new approvals. If granted, those approvals would not only be illegal, but immoral, as they would imperil thousands of lives by placing skyscrapers atop the State-mapped 7.0-magnitude active Hollywood Earthquake Fault. Mayor Garcetti, the City Council and City Planning's bizarre actions in this case are intensifying the citizenry's apprehension.

This haste is more perplexing in light of the fact that after the City Council's July 2013 approvals in the original project, several significant developments have occurred. These include:

(1) In 2014, the State of California, through the California Geological Survey, officially mapped the 7.0-magnitude active Hollywood Earthquake Fault directly through the site, making the proposed Project even more clearly illegal than at the time of the original, 2013 approvals. Although Millennium and the City had the right, and duty, to exhaust administrative remedies if they sought to challenge the State's official determination, they failed to exhaust those administrative remedies. The City and Millennium are, therefore, estopped from arguing that the fault does not run through the property, or that the fault is not active. The facts on the ground *and* their failure to exhaust administrative remedies as required by law bar their attempt now, in this DEIR, to redefine the fault as allegedly being "inactive." The DEIR's entire premise that the fault is "inactive" is a legal nullity. From the outset, the DEIR thus fails on this critical issue (as well as numerous others). The DEIR collapses under the weight of its own lies. Jasmine Networks, Inc. v. Superior Court (2009) 180 Cal.App.4th 980, 1005-1006 ("part of our job is to resist such devices, and to declare, when so it seems to us, that the emperor in fact has no clothes").

(2) Beginning in 2018, multiple City officials and developers have come under FBI investigation for pay-to-play corruption. That FBI investigation is widening on an almost daily basis, as reported in the media.

(3) Former Councilman Mitch Englander in March 2020 pled guilty to federal obstruction of justice for his taking of bribes related to development projects. Councilman Jose Huizar has also been a focus of the FBI's investigation.

Is it a mere coincidence that two of the three votes on the City Council's Planning and Land Use Management Committee that approved the original project in June 2013 came from Englander and Huizar? They ignored all evidence of the Hollywood Fault crossing the site, while simultaneously dismissing evidence of Millennium's falsification of seismic maps and data.[2]

Is it also a mere coincidence that Englander ran the final City Council hearing that fully approved the original project in July 2013, when the project was not in his district, and when he was not the Council President? Indeed, then City Council President Herb Wesson, who normally would run the meeting (and, we note, whose office has also been implicated in the FBI

[2] We incorporate the entire administrative record for the original Millennium Hollywood Project, LASC Case No. BS144606. By letters dated April 29 and May 20, 2020 (collectively at **Exhibit 3**), we provided a flash drive with the entire administrative record and reference library from the original case. We incorporate by reference all objections made by any and every party in the original case, most of which objections continue to apply with full force to the current Project. As a result, as part of responding to comments during this EIR process, the City must apply every objection from the original Millennium case to this matter and this DEIR, and must respond to every such objection as part of this EIR. Indeed, given the unreasonably short period of time you have allowed the public within which to submit comments during this public comment period, many individuals or groups who might otherwise have tried to comment now have not been able to, or simply gave up. Therefore, the prior comments and objections from the original matter serve a particularly important role in this matter. In any event, by our providing of that complete administrative record, and by this demand, but in light of the prior trial court and Court of Appeal rulings against the City and Millennium (i.e., you cannot simply reproduce the faulty Final EIR from the original case as your "responses" to our re-assertion of the original objections), you must include and respond to each and every one of those earlier objections, which we incorporate herein and reassert.

investigation) was present and voted. That is the hearing when the full City Council mysteriously approved the original Millennium project – over the objections of dozens of community groups and hundreds of thousands of residents, and even over the objections of two State agencies, Caltrans and the California Geological Survey.

(4) Another subject of the FBI investigation is former LA Building & Safety ("LADBS") head, Raymond Chan. Throughout the U.S. Attorney's court filings, Chan is referred to as "Individual 1." As revealed to date (see, e.g., **Exhibit 2**), the FBI investigation and U.S. Attorney filings have pointed towards influence peddling and/or corrupt activities by Chan.

During the original proceedings, we argued that LADBS's approval of Millennium's earthquake fault studies was per se illegal because, overlapping with the time that LADBS was overseeing those approvals, Chan's son was simultaneously being paid by Millennium's chief lobbyist and law firm, Sheppard Mullin. Among other things, an ethics complaint was filed against Chan related to this state of affairs (**Exhibit 4**), but the City did nothing. Instead, Garcetti promoted Chan to Deputy Mayor.

We also discovered Chan lying about his alleged non-involvement in Millennium's seismic review and issues. Emails obtained through Public Records Act requests (**Exhibit 5**) show Chan at the center of discussions with Millennium's attorneys about the Hollywood Earthquake Fault potentially running through the project site. Those attorneys worked at the law firm of Sheppard Mullin (which according to City Ethics Committee reports, received millions of dollars in lobbying fees from Millennium).

This remains relevant because significant portions of the seismic studies and alleged data undergirding the current DEIR's assertions that "there is nothing to see here, move on", were processed and accepted by Chan's LADBS in connection with the original project. Those studies should never have been accepted by the City in the first place, much less play an ongoing starring role in this DEIR now. The scandal continues.

(5) The current DEIR's failings result not only from the inclusion of tainted material as described above. They also come from the exclusion of

information that must be included in a recirculated DEIR for the public and decision makers. This includes, but is not limited to, a **new report issued in May 2020 by the United States Geological Survey, based on the newest and most precise form of detecting earthquake faults**, called Guided Wave Study (**Exhibit 6** [https://pubs.usgs.gov/of/2020/1049/ofr20201049.pdf ; note that the title refers to 2018 studies, but the document was published in May 2020]; see also Seismic Section and discussion, infra), with critical new information and data for projecting **3 more active fault splays of the Hollywood Earthquake Fault across the Project site**.

The above overview brings us to the present, to this DEIR, and to the ongoing violations of law and public trust by Mayor Garcetti, Councilman Mitch O'Farrell (whose district the Project is in), the Planning Department, and LADBS.

The law requires the City to reject the DEIR and the Hollywood Center Project.

II. PRELIMINARY PROCEDURAL ISSUES.

Please keep this office on the list of interested persons to receive timely advance notice of all hearings, votes and determinations related to the Project, its DEIR and requested entitlements.

Pursuant to Public Resources Code Section 21167(f), please provide a copy of each and every Notice of Determination issued by the City in connection with the Project.

We adopt and incorporate by reference all Project comments and objections raised by all others during the environmental review and land use entitlement processes for the Project.

As noted above, we incorporate by reference the entire administrative record for the original Millennium Hollywood project, Los Angeles County Superior Court Case No. BS144606.

III. ALL NOP AND ELDP COMMENTS AND OBJECTIONS MUST BE INCLUDED IN A RECIRCULATED DEIR AND RESPONDED TO.

Critical to the environmental review process is the opportunity of the public and other public agencies to identify information they require to be included in the Draft EIR to enable informed public review and comment. This also means that it is the lead agency's job to assure that negative and inconvenient information is not withheld from the public in the DEIR, so as to impair the public and expert agencies in their vital role to help shape a project and to hold the lead agency accountable in the process. All required information must be included at the Draft EIR stage, and not later in the process, as occurred during the earlier project's CEQA review process.

Unfortunately, the instant DEIR has violated this critical, early step of the CEQA process by refusing to acknowledge, much less address in the DEIR, various comments and demanded study parameters as contained in comment letters submitted in response to the City's Notice of Preparation ("NOP"). Some of those comments came from this office. We incorporate by reference all of the NOP comment letters from all sources. We demand that you recirculate the DEIR to include all issues and study areas raised by, and then to properly address each such issue and study area, from each of the comments raised in those NOP letters.

As but one example, our September 27, 2018 NOP comment letter (**Exhibit 7**) observed that the City's "Initial Study asserts that the Project will have no direct impact on cultural and historic resources in the area. That contention is not accurate." As will be discussed further below, the City violated AB 52 consultation requirements regarding cultural and historic resources by failing to include tribal representatives in trenching activities[3] conducted on the East and West Sites as part of the Project review and

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[3] See https://www.youtube.com/watch?v=JRVttDWBvOo&feature=youtu.be , for a 3-minute, breathtaking drone video taken by StopMillennium of one of the East Site trenches upon which the present DEIR bases much of its critical seismic conclusions, incorporated by reference. We note that although the trench appears "impressive" for seismic review purposes, it actually was part of the propaganda campaign being waged by Millennium and the City. The California Geological Survey as part of its official Alquist-Priolo Study FER-253 specifically noted that the trench terminated too early; it did not reach the point to the south where the CGS had plotted the main fault scarp to be crossing the property. See at **Exhibit 8** (FER-253 Supplement No.1;

approval process. The City's dismissive handling (**Exhibit 10** [April 8, 2020 City letter]) of the on-the-record tribal requests for participation (**Exhibit 11** [Gabrieleño Band of Mission Indians – Kizh Nation, September 10, 2018 letter] is illegal.

In addition to the NOP comment letters, the City must include all objection letters related to the Environmental Leadership Development Project ("ELDP) AB 900 application request process initiated by Millennium for this Project. It appears that the City in its running administrative record (as required by AB 900) has not included in the administrative record for the DEIR process the ELDP objection letters themselves. That too distorts the purpose of the DEIR, which is to fully disclose, evaluate and mitigate all environmental impacts of the Project. By attempting to censor from this administrative record and DEIR those ELDP letters and their detailed objections and concerns (akin to NOP objection letters), the City again undermines CEQA's core purposes of: (1) enabling and encouraging informed public participation; (2) enabling informed public agency decision making; and (3) mitigating impacts.

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https://gmw.conservation.ca.gov/SHP/EZRIM/Reports/FER/253/, on page 26, second to last paragraph, next to last sentence: "The eastern trench at GDC Site 2 (and extending south into GDC Site 1) **did not extend far enough south to fully explore** these possible faults and their potential connection to the scarp at Carlos Avenue." (Emphasis added.) In other words, Millennium stopped before reaching the most critical location. That video is incorporated by reference into the present administrative record. See also **Exhibit 9** (photos of the East Site trench).

As to tribal cultural resources, the video and photos graphically demonstrate how destructively and surreptitiously (behind green fencing, and without tribal cultural monitors) the trenches were dug. In violation of law, the City failed to invite the tribal representatives in to observe. The more recent West Site trenching from approximately 2018, the alleged data from which is also included in this DEIR, suffers from the same problem. The City and this DEIR cannot literally and figuratively plow under the potential existence of Tribal Cultural Resources.

Prior to any further review of the Project or its DEIR, the City should order Millennium to fully reopen the trench locations and/or retrench to give unfettered access to representatives of the Gabrieleño Band of Mission Indians – Kizh Nation, as well as scientists from the California Geological Survey and United States Geological Survey.

As a result, we have compiled all of the ELDP objection letters at **Exhibit 12** hereto. We incorporate by reference all of the those ELDP objection comment letters. We demand that you recirculate the DEIR to include all issues and study areas raised by, and then to properly address each such issue and study area, from each of the comments raised in those ELDP objection letters.

IV. THE CITY HAS VIOLATED ENVIRONMENTAL JUSTICE AND DUE PROCESS RIGHTS BY ALLOWING ONLY 45-DAYS FOR A PUBLIC COMMENT PERIOD ON A 13,000-PAGE DEIR, RELEASED TO THE PUBLIC DURING THE COVID-19 CRISIS.

Despite an outpouring of written requests for a tolling or extension of the public comment period (including from Councilman David Ryu, whose District 4 constituents would experience the brunt of the Project's environmental impacts, including degradation of emergency services response times, even though the Project is in District 13 – O'Farrell), all of which we incorporate by reference, the City has pursued a sort of "Hunger Games" ugliness towards the public. We attach some of our correspondence on this subject collectively at **Exhibit 13**.

The City's refusal to extend the 45-day comment period has been fundamentally unfair to the public in myriad ways described in those letters. But it has also been unfair to public agencies such as the SCAQMD, Caltrans, the California Geological Survey, and others that likely will comment (or would have), but whose staff members have been operating remotely, without all of their files and normal equipment, and under the same reduced capacity and pressures from the COVID crisis and lockdown orders affecting all of us. The City's blithe, let-them-use-internet responses are repugnant.[4]

To read the entire tale of the public's pleading for more time, and the City's twisted retorts, recalls the statement by Chief Counsel of the U.S. Army, Joseph Welch, in his confrontation with Sen. Joseph McCarthy, where Welch famously asked

[4] We also note that as a sort of "consolation prize" for violating AB 52 and tribal rights, the City informed the Gabrieleño tribal chairman that the tribe would still have the ability to comment on the DEIR. Of course, that is no substitute for observing and monitoring the earth movement and trenching real time. The City then informed the chairman that the public comment period would be 60 days. (**Exhibit 10**.) Even that was a lie, as only 45 days was given.

McCarthy: "Have you left no sense of decency?"
https://en.wikipedia.org/wiki/Joseph_N._Welch .

The City's refusal to extend, or restart, the public comment period also violates the public's constitutional due process rights, requiring fair notice to all who may be affected by land use decisions. See the Supreme Court's holdings in, e.g., Horn v. County of Ventura (1979) 24 Cal.3d 605, 612 & 616-619; Scott v. City of Indian Wells (1972) 6 Cal.3d 541, 548-550.

That we managed to produce this letter does not take away from the fact that we could and would have produced far more had time allowed. Nor does it negate the reality of most others who either gave up in the face of the City's adamant refusals to extend the public comment period, or produced something far less substantive because of the sheer inability to get through 13,000 pages of highly technical, and often impenetrable to a layer person, material.

We also wish to point out that the City has violated new Public Resources and Government Code sections dealing with environmental justice, and the requirements for agencies like the City to ensure that environmental justice communities have a full and fair opportunity to understand and participate fully in governmental decisions.

In a letter dated April 29, 2020, we objected to the City's failure to extend the public comment period for the DEIR in light of the COVID-19 crisis, and in particular, the absence of public access to hard copies of the DEIR in the usual locations of (now-closed) local libraries and the (now-closed) City Planning Department. The City responded on April 28, 2020 with an email that gave the facile and patently untrue response that "the Draft EIR remains accessible to all individuals" because the documents were all on line, thereby implying or assuming that everyone who wanted to review the EIR should be able, on their own, to have a computer, an internet connection and sufficient bandwidth to download this very hefty DEIR and its lengthy appendices. We again objected, in a letter dated April 29, 2020, reminding the City of Mayor Garcetti's lockdown order that closed the libraries and City Hall.

The City's cavalier, let-them-use-internet attitude ignores the very real fact, widely known to the general public, that members of some communities may not have computers or, if they do, may be unable to afford internet access. The libraries where they might usually access the internet are closed, making access to both a hard copy of the DEIR and

the online version of the DEIR unavailable. The City's assertion about universal access to the DEIR is simply untrue, unsupported by observable facts, and contradicted by evidence. Unaffordability of access to the internet is particularly and painfully true now, when rampant unemployment is making many people choose between food and rent payments. Assuming that all people can afford both a laptop and internet access is arrogant and discriminatory, and impairs or denies the ability to meaningfully participate in the City's decision-making about the Project.

Attached hereto at **Exhibit 14** is the report that ran on radio station KPCC's LAist feature, describing the difficulties poorer families are encountering when they attempt to get their children connected to on-line school classes. The article describes that internet access is simply not available to all parts of some communities (e.g., Watts), and is available in other locations only at prices that families may not now be able to afford. If some poorer communities (and Hollywood certainly has poorer communities) cannot get their children on line to continue their education, how can the City justify assuming that all families can get on line to read, study, and comment on the DEIR?

The City's conduct does not comport with both long-standing and recent legislation defining environmental justice. Assembly Bill 1628 was signed into law by Governor Newsom on September 27, 2019, and took effect this year. The bill's Section 1, subd. (b), provides:

> "It is therefore the intent of the Legislature to ensure that the populations and communities disproportionately impacted by pollution *have equitable access to, and can meaningfully contribute to, environmental and land use decisionmaking*, and can enjoy the equitable distribution of environmental benefits." (Emphasis added.)

This definition of "environmental justice" expanded the existing definition in Government Code Section 65050.12, subd. (e):

> "'[E]nvironmental justice' means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

While AB 1628 only formally amended the Coastal Act and the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, the intent of the Legislature is clear that environmental justice must include equal access by all communities to information about governmental decisions that may affect them, and equal opportunity to participate in the making of those governmental decisions. The City has denied equal access and "fair treatment" regarding the Project and the impacts it may have on the community's physical environment.

V. THE DEIR FURTHER VIOLATES CEQA: CORRUPTED DOCUMENTS IN APP. G-1 AND ELSEWHERE REQUIRE RECIRCULATION AND RESTART OF THE PUBLIC COMMENT PERIOD.

The City's refusal to extend the public comment period, or more appropriately, to restart it altogether, is even more abusive considering that all of the Plates and Figures in Geology Appendix G-1 were corrupted as distributed by the City in the format most likely to be used by the public, i.e., downloading (for those with computers and internet access) the pdf files and viewing them in that manner. (See also p. 5 of our May 22, 2020 letter, included as part of **Exhibit 13** hereto.) The City's response after we raised this issue speaks volumes about the corruption in this process.

First the City argued that the DEIR was fully available because the public could allegedly view it via computer (even though many would only be able to view a DEIR of this type and size at a public library). Then the City said it was fully available if only the public didn't download it (that one is particularly risible, as the files cannot be downloaded as anything other than a pdf, in order to preserve the integrity of the underlying document). That the City for more than 5 weeks of the 45-day public comment period had a document with corrupted text and numbers in every single Plate and Figure (totaling 18 critical exhibits), which it did not even bother to check before releasing to the public, is again inexcusable.

The burden cannot be on the public to figure all of this out. It is the responsibility solely of the public agency to make all of the DEIR materials fully available, and in time for the public to review and frame meaningful comments (i.e., not less than a week for a 13,000-page DEIR, during a pandemic). See, *inter alia*, CEQA Guidelines Sections 15200(b)(c) and (d) (purposes of public review include checking the EIR's analysis, checking for errors, and identifying omissions); 15201 (public participation is essential to

the CEQA process), 15203 (public agency shall allow adequate time for public review [implicitly, for public review of an accurate and complete document]).

Restarting the public comment period after properly releasing a full and corrected version should go without saying. That is particularly true when, as here, there could literally be a catastrophic inability of community members and their technical advisors to assess the earthquake data in the DEIR because of the corruption in Appendix G-1.

VI. THE DEIR ALSO VIOLATES CEQA BECAUSE OF ITS LACK OF CLARITY FOR THE LAY PERSON.

CEQA is intended to be a document of public information. Pub. Res. Code §§ 21002.1(a), 21003(b) ("Documents prepared pursuant to this division [CEQA] shall be organized and written in a manner that will be meaningful and useful to decisionmakers and to the public"); Guidelines § 15140 ("EIRs shall be written in plain language . . . so that decisionmakers and the public can rapidly understand the documents"). See also, Vineyard Area Residents for Responsible Growth, Inc. v. City of Rancho Cordova (2007) 40 Cal.4th, 412, 442 ("Vineyard") ("The data in an EIR must not only be sufficient in quantity, it must be presented in a manner calculated to adequately inform the public and decisions makers, who may not be previously familiar with the details of the project. '[I]nformation scattered here and there in EIR appendices' or a report 'buried in an appendix' is not a substitute for 'a good faith reasoned analysis.'")

Here, the DEIR does not meet CEQA's requirement for a document that is fully understandable by and accessible to the public and decision makers. Some discussions are so full of technical information that they cannot easily be followed by a lay reader. One example is the confusing and inadequate discussion at DEIR, p. II-10 to 11, which purports to explain the Site's existing "D" limitation, without providing any background on what a "D" limitation is or why this particular "D" limitation was imposed on the site, a discussion of the FAR [meaning floor area ratio] for the site that does not make clear what an FAR is or what it does, a reference to an Owner Participation Agreement without an explanation of what such an agreement usually contains, and others.

Similarly, despite the ubiquitous references to air quality modeling in general, and to the EMFAC and CalEEMOD models in particular (see, e.g., DEIR p. IV.B-41), no real explanation is given as to what an air quality model is or does, or what the differences between EMFAC and CalEEMod are.

An especially egregious example of presenting information in a way that is not easily accessible to the lay reader is that the DEIR has technical appendices that run over 1,000 pages, but lack overall Tables of Contents ("TOCs") and sequential page numbering of the appendix. This makes finding any particular technical discussion or specific piece of information a time-consuming, labor-intensive, very frustrating, and sometimes virtually impossible task. An example is Appendix E-1 (Air Quality), which has 1,160 pages with no TOC. Another example is Appendix N (Transportation analysis), which has more than 1,400 pages, with no overall TOC or sequential page numbering, just separate sets of page numbers for individual analyses within the overall Appendix. Locating any given analysis or bit of data is impossible without a greatly disproportionate investment of time and labor. Equally baffling and frustrating is the passage at the top of page IV.B-40 that refers the reader to Appendix E-1 for a full discussion of the Project's construction phasing and equipment list, without providing any clue as to how the reader is to find that information in the 1,160-page Appendix E-1, which lacks overall consecutive page numbers and has no TOC.

A blatant violation of the Vineyard dictate that information should not be "buried" in appendices is the plethora of footnotes in the DEIR that cite to documents *as a whole*, without page citations that would allow a reader to actually find and verify the information being cited, or to understand the context of the quotes from reference documents that the DEIR reproduces. Examples of footnotes referring to entire documents are: (1) footnotes in the Air Quality section numbers 66-68, 70, 73, 77, 82, 91, 98, 112; and (2) footnotes in the Greenhouse Gas section numbers 4, 5, 23, 31, 35, 36, 49, 63, 69-73, 77-79, 82, 87, 108,109, 111, 113-115, 117, 120, 121, 136, 155, 156, 159, and 160. Here, the information is not only buried, but there are not even tombstones or a map of where the data are buried.

A further violation of CEQA Guidelines Section 15140's command that "EIRs shall be written in plain language" is the use of technical terms and acronyms without definition, e.g., "SOON" used at DEIR p. IV.B-17 and undefined there or in Appendixes E, N-1, or the Acronyms list.

Based on this firm's prior litigation, the courts invalidated the previous Millennium project and its EIR on several grounds, including because its project description failed to disclose what the project would actually be. This second time, while some aspects of the physical project are better defined, now the City and Millennium are hiding the impacts in text that is impenetrable to the lay person. It would be hard to have

written a more turbid, less clear document. One can reasonably surmise that with the years that the City and Millennium have had to work on this document, that was a deliberate choice. Regardless, this document circulated to the public further violates CEQA.

The DEIR should be thoroughly revised to make it a readable document that allows a lay reader to find, and to understand, what is being said. Until it is, it is *void ab initio* and fails as a matter of law.

VII. THE FBI INVESTIGATION OF CORRUPT CITY OFFICIALS HANGS OVER THIS DEIR.

In the Introduction section we noted the active FBI investigation into City officials related to bribery and corruption. Based on public disclosures made to date, focuses of that investigation include former Councilman Mitch Englander (already pled guilty), current Councilman Jose Huizar (perhaps soon to plead guilty), and former LADBS head and then Deputy Mayor, Raymond Chan (also perhaps soon to plead guilty). All were actively involved in critical approvals for the original Millennium project, their actions then continue to infect the current DEIR now, particularly as to seismic/geologic studies from the earlier project that are being used to support the current DEIR.

As the January 16, 2020 federal indictment of Englander explains, there is presently a

> "federal criminal investigation into **public corruption throughout the City of Los Angeles** (the "City") related to **multiple suspected** "**pay-to-play**" **schemes** (the "Federal Investigation")." This investigation involves "**multiple City officials, developers**, investors, consultants, lobbyists, and other close associates working in furtherance of the potentially illegal schemes." (Several of the federal indictments, plea deals, and information documents are attached collectively at **Exhibit 15** hereto; emphasis added.)

Regarding Chan, as reported in a January 18, 2019 Los Angeles Times Article, "*Garcetti appointee named in FBI warrant quits his post*":

> "Agents served the warrant on Google in July, seeking information from a private email account for Ray Chan, who served as Garcetti's deputy mayor for economic development in 2016 and 2017. Prior to that, Chan was Garcetti's top executive at the city's Department of Building and Safety." (**Exhibit 16**.)

The time frame when Chan headed LADBS overlapped with the highly controversial approvals for Millennium and its seismic studies, a process as to which the California State Geologist and Geological Survey expressed grave concerns. (See, e.g., **Exhibit 17** [initial letter from State Geologist; and then-City Geologist Dana Prevost's notes about phone call from State Geologist expressing alarm].)

We alleged then that Chan was acting improperly, and we allege it again. The entire Millennium approval process, past and present, is marred by strong evidence of corruption. We urge the FBI to continue to probe Chan and other City officials' dealings related to the past and present projects. **We also urge Mayor Garcetti, the City Council, and the Planning and LADBS heads to stop any further processing of the DEIR and Project applications until the FBI investigation has concluded**.

We will not be surprised if former Planning Director Michael LoGrande who presided over the original Millennium approvals, and who recently agreed to pay a nearly $300,000 fine for ethics violations, is also exposed in the ongoing FBI investigation.

Although articles abound confirming the depth and breadth of the FBI's investigation into City officials and the pay-to-play corruption that permeates LA City Hall (see **Exhibit 2**), we add for the record the Los Angeles Times May 15, 2020 editorial, "*Just how dirty is L.A. City Hall?*" (**Exhibit 18**.)

As detailed in the May 13, 2020 Information filed by the U.S. Attorney against Defendant George Chiang, at ¶ 28:

> "a. In order to enrich its members and associates, the CDA Enterprise operated a pay-to-play scheme within the City of Los Angeles, wherein public officials demanded financial benefits from developers and their proxies in exchange for officials acts. **Specifically, through a scheme that involved bribery, mail and wire fraud, and extortion**, Councilmember A, City Staffer A-1,

> **Individual 1 and other City officials demanded, solicited, accepted, and agreed to accept from developers and their proxies**, including defendant CHIANG, some combination of the following types of financial benefits, among others: (1) cash; (2) consulting and retainer fees; (3) favorable loans; (4) casino chips at casinos; (5) flights on private jets and commercial airlines; (6) stays at luxury hotels; (7) expensive meals; (8) spa services; (9) event tickets to concerts, shows, and sporting events; (10) escort and prostitution services; and (11) other gifts.
>
> "b. In exchange for such financial benefits from developers and their proxies, Councilmember A, City Staffer A-1, **Individual 1** and other City officials agreed to perform and performed the following types of official acts, among others: (1) filing motions in various City committees to benefit projects; (2) voting on projects in various City committees, including the PLUM Committee, and City Council; (3) taking, or not taking, action in the PLUM Committee to expedite or delay the approval process and affect project costs; (4) **exerting pressure on other City officials to influence the approval process of projects** . . . ." (See **Exhibit 15**; emphasis added.)

As stated in the Information at ¶ 13: "Individual 1 was the General Manager of the LADBS until in or about May 2016. In or about May 2016, Individual 1 was appointed by the Mayor as the City's Deputy Mayor for Economic Development. As Deputy Mayor, Individual 1 directed LADBS and the Planning Department, among other City departments." "Individual 1" is Raymond Chan.

To summarize:

- This Project is the nominally-revised version of the prior project that Mayor Eric Garcetti and Councilman Mitch O'Farrell greenlighted to put skyscrapers on top of the 7.0-magnitude active Hollywood Earthquake Fault.

- Councilman Mitch Englander in July 2013 mysteriously conducted the hearing that led to the City Council's original approvals. https://www.youtube.com/watch?v=xMe7fq_ZXcQ&t=13s

- Englander in March 2020 agreed to plead guilty to federal obstruction of justice, part of the wider-ranging federal corruption probe of LA City officials.

- This Project is the nominally-revised version of the prior project that won the City Council's Planning and Land Use Management Committee approval in June 2013. Two of the PLUM Committee's three members who voted to approve the earlier project were Councilman Jose Huizar, who is under FBI investigation, and Englander, perhaps soon to be in prison.

- This Project is the nominally-revised version of the prior project where the City's Department of Building and Safety, then under Raymond Chan, approved Millennium's bogus earthquake studies. The FBI is actively investigating Chan.

- This Project is the nominally-revised version of the prior project where the California State Geologist warned the City Council of grave threat to human life because of the project's location over the Hollywood Earthquake Fault. The Mayor and City Council ignored the state's top geologist.

- Since then, the California Geological Survey through its official Alquist-Priolo Earthquake Fault Zone Map and Fault Evaluation Report ("FER") No. 253 has come out even more explicitly in its determination – which is now law – that the Project site is traversed by the 7.0-magnitude active Hollywood Earthquake Fault (**Exhibit 8**), making it unbuildable and unapprovable as currently proposed.

- This Project is the nominally-revised version of the prior project that Caltrans fought, stating the City and Millennium's traffic studies were fraudulent and dangerous. (**Exhibit 19**.)

- This Project is by the same developer guilty of the Leaning Tower of San Francisco disaster, one of the biggest construction screw ups in modern times.

- But like the bad penny that keeps turning up, Millennium is back. They slightly tweaked the project and are lurking under a new name, Hollywood Center. However, a rose by any other name stinks just as bad.

VIII. THE DEIR'S PROJECT DESCRIPTION AND LAND USE ANALYSES VIOLATE CEQA.

A. The DEIR Lacks an Accurate, Stable and Finite Project Description Regarding Multiple Critical Issues Required for Informed Public Participation.

1. The DEIR Misrepresents the Project's Proposed and Requested FAR.

We emphasize, as the Court of Appeal held in ruling against the City and Millennium in the prior matter, that the DEIR's "project description must be accurate, stable and finite." Stopthemillenniumhollywood.com v. City of Los Angeles (2019) 39 Cal.App.5th 1, 16.

> "The requirement of an accurate, stable, and finite project description as the *sine qua non* of an informative and legally sufficient EIR has been reiterated in a number of cases since County of Inyo. (See, e.g., Treasure Island, supra, 227 Cal.App.4th at p. 1052, 174 Cal.Rptr.3d 363 ["This court is among the many which have recognized that a project description that gives conflicting signals to decision makers and the public about the nature and scope of the project is fundamentally inadequate and misleading"]; Communities for a Better Environment v. City of Richmond (2010) 184 Cal.App.4th 70, 85–89, 108 Cal.Rptr.3d 478 [EIR failed as an informal document because the project description was inconsistent and obscure as to the true purpose and scope of the project]; San Joaquin Raptor Rescue Center v. County of Merced (2007) 149 Cal.App.4th 645, 653, 57 Cal.Rptr.3d 663 [an EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider 309 meaningfully the issues raised by the proposed project].)" Id. at 17.
>
> "'Only through an accurate view of the project may affected outsiders and public decision makers balance the proposal's benefit against its environmental costs, consider mitigation measures, assess

> the advantage of terminating the proposal . . . and weigh other alternatives in the balance.' [Citation.]" Id. at 18-19.

As a starting point, an accurate FAR (floor area ratio) is the *sine qua non* of a legally sufficient project description. Without a truthful disclosure of FAR, community members are deprived of one of the few readily-understood land use metrics to understand and comment on the Project. That is missing in the DEIR.

Among the primary characteristics of a development informing the public's conception of what environmental impacts to investigate, FAR is uniquely important to meaningful public participation. The public utilizes approximate FAR comparisons as a heuristic to judge whether a development warrants participation in the public process. A misleading FAR, therefore, taints the entire public process because it impairs informed decision-making by the public and the City.

However, rather than calculate FAR based on the definition in LAMC Section 12.03 and the LADBS Bulletin attached as **Exhibit 20**, as the public and the City have done for decades, the DEIR instead creates its own project-specific definition and represents only what the FAR *would be* if the City excluded portions of the Project. As a result, the DEIR artificially reduces the actual FAR by excluding *168,320 square feet* of covered residential terraces and balconies from FAR calculations. Table II-4, Footnote (c) states that the FAR calculations exclude 78,120 square feet on the West Site and 90,200 square feet on the East Site. These figures total 168,320 square feet of area excluded from FAR. Far from a rounding error, this omission reduces disclosed FAR by approximately 0.837 to 1 (168,320 square feet divided by 200,971 square feet of lot area).[5] The true FAR of the Project, rather than 6.973 to 1, is in fact 7.81 to 1 – an undisclosed increase of over 12 percent.[6]

The DEIR's customized definition of FAR fails to make a good faith effort to inform the public. The unconventional calculation is clarified only in a technical footnote, while the DEIR conspicuously omits any calculation of total FAR under the LAMC definition. Rather than providing a simple ratio commonly understood by the

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[5] 168,320 square feet divided by 200,971 square feet equals 0.753.

[6] 7.810 /6.973 = FAR. 0.75/6.973 = 0.12 = 12 percent increase.

public to facilitate an apples-to-apples comparison to other developments, the DEIR jumps through hoops to meticulously sum every square foot of covered open space (i.e., the balconies and terraces) throughout the Project, to subtract those numbers from the LAMC definition of Floor Area, and to ensure that only the reduced FAR is disclosed in the DEIR.

The misrepresentation of the Project's FAR advances no legitimate informational purpose. No other development in Hollywood, or Citywide, has been approved and constructed[7] based on the proposed alternative calculation of FAR. Nor does the FAR calculation serve an entitlement or technical land use purpose. Millennium elsewhere represents that the Project is allegedly entitled to an FAR of 8.1 to 1 due to affordable housing set-aside.[8] If so, why does the DEIR reverse-engineer definitions to assert that FAR is only 6.973 to 1 when FAR actually exceeds 7.810 to 1? The only conclusion is that the FAR calculation is a transparent attempt to deceive the public into believing the Project's FAR is substantially smaller than proposed by omitting covered balconies and terraces that the Zoning Code requires to be included. It serves no purpose but to mislead.

The Project Description has the effect of cutting the community out of some of the most important questions about the Project. Members of the public reading the DEIR are left with the mistaken impression that the Project is 12 percent smaller than it is in fact, tainting their understanding of the Project from square one. It is reasonable to assume that at least some community members would not object to a 6.9 to 1 FAR on the basis that it is *only slightly denser* than the most massive developments approved in Hollywood, but would strenuously protest the Project upon understanding the apples-to-apples FAR exceeds 7.81 to 1. By concocting a project-specific calculation of FAR, the DEIR actively undermines public understanding of the Project and thwarts informed public participation.

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[7] The previous iteration of the Project had requested a Zoning Administrator Interpretation to exclude balcony area, but was defeated in court and never constructed.

[8] DEIR p. II-11.

2. The Description of Alcohol Service Fails to Disclose the Magnitude of Outdoor Alcohol Consumption.

The DEIR's discussion of proposed alcohol service is so deficient, members of the public are left in the dark as to core aspects of the Project description. The terms "alcohol" and "alcoholic" appear only five times in the 1,061-page main document: once in the entitlement request and four times in the Land Use and Planning section of the DEIR. The entirety of the DEIR's discussion of alcohol service consists of a single paragraph that is stunning in its lack of specificity.

> "The Project proposes the sale of a full line of alcoholic beverages in association with the proposed 30,176 square feet of commercial/restaurant uses and for any alcohol uses associated with the hotel under the Project with the East Site Hotel Option. Pursuant to LAMC Section 12.24 W.1, a Conditional Use Permit for the sale or dispensing of alcoholic beverages for on-site and off-site consumption at 12 establishments would be required, and a Master Conditional Use Permit may be requested. Several restaurants/bars and entertainment uses with permits to serve alcohol are already located near the Project Site."[9]

The DEIR fails to disclose that alcohol service is proposed outdoors,[10] instead requesting an entitlement to permit alcohol service only "within" commercial establishments. The DEIR misleadingly describes the CUP request as "a Master Conditional Use Permit for the sale or dispensing of alcoholic beverages for on-site and off-site consumption ***within*** 12 establishments."[11] (Emphasis added.) A request to permit alcohol service and consumption within an establishment, however, does not put

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[9] DEIR p. IV.H-25.

[10] The closest the developer comes to an honest disclosure of this fact is a footnote on page A-152 of the plans indicating "NO ALCOHOL SERVICE IN THIS AREA" – suggesting, by inference, that alcohol service is proposed in every other outdoor area of the Amenity Deck.

[11] DEIR p. II-74.

the public on notice to consider the environmental impacts of alcohol service and intoxicated crowds ***outside of*** such establishments, such as the increased operational noise levels, the increased freeway trips generated by larger functional restaurant area, or a host of other environmental impacts.

The DEIR further cryptically mentions approval of "any alcohol uses associated with the hotel under the Project and East Site Hotel Option."[12] Yet, when members of the public would try to understand what alcohol approvals are requested for the Hotel Option, they would be left guessing. The plans appear to suggest 4,850 square feet of outdoor area with alcohol service for the hotel component alone, but the DEIR and running administrative record lack the required site plans explicitly labeling areas of alcohol service. The DEIR fails to provide the faintest description of alcohol service under the Hotel Option and neglects to even describe the alcohol license type requested.[13] In comparable approvals, community members have insisted on myriad mitigation measures to address operational noise impacts from intoxicated hotel guests. Here, however, the DEIR is so vague the pubic would have no indication the Project warrants similar scrutiny.

Finally, the DEIR fails to accurately describe the numerous bars included in the alcohol-serving establishments. The Plans depict numerous areas identified explicitly as bars.[14] The distinction between a restaurant and a restaurant with a bar is profoundly

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[12] DEIR p. IV.H-25.

[13] A site plan with clear identification of alcohol-serving areas and a listing of license numbers are required for a complete application per the Department of City Planning's Special Instructions for Alcohol (CP-7773). (**Exhibit 21**; https://planning.lacity.org/odocument/f911abb0-a5c5-44f4-932f-07a560dc90c6/Alcohol%20(CUB)%20and%20Adult%20Entertainment%20Establishments%20(CUX)%20-%20Special%20Instructions.pdf) Yet the City not only deemed the entitlement application complete, but also published the DEIR without this information.

[14] Plans p. A-141 (depicting bars in Restaurants 1, 2 and 3 on the West Site); Plans p. A-142 (depicting bars in Restaurants 1, 2, 3 and 4 on the East Site); Plans p. A-151 (depicting a bar on the West Site Amenity Deck); Plans p. A-509 (depicting a bar within an unnumbered restaurant on the East Site).

consequential for the public to understand – especially if numerous restaurants with bars are concentrated on the same property. Whereas a restaurant requires food service in conjunction with the service of alcohol, a bar allows members of the public to consume alcohol without food, greatly increasing the prevalence of loud, intoxicated and disruptive behavior.

The Project description, however, mentions only "retail and restaurant uses"[15] Nowhere in the DEIR is any component of the Project described as a "bar," which is particularly misleading because in its description of other nearby developments, a restaurant with a bar is described as a "restaurant/bar."[16] The lifetime experience of Hollywood residents dictates that restaurants with bars are more prone to alcohol-related disruption due to public intoxication. Concealing the Project's numerous bars stifles public engagement generally and precludes informed comment on environmental impacts such as noise and public safety specifically.

3. The Land Use Analysis Fails to Disclose or Compare Outdoor Dining Regulations in the C4 Versus C2 Zones.

One of the Project's core entitlement requests is a Zone Change from C4 to C2, yet not one word of the DEIR articulates why this request is included. In fact, this request is highly consequential for two reasons. First, the C4 Zone is highly restrictive regarding outdoor eating or drinking. Eating or drinking areas are prohibited above the ground level, must not exceed 50 percent of the indoor *dining* area of the establishment, must be located between a building and a yard abutting a street, and must take place in conjunction with a ground floor restaurant.[17] Based on the current C4 Zone regulations, negligible outdoor eating and drinking would be permitted.

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[15] E.g., DEIR p. II-2.

[16] E.g., DEIR p. IV.H-14, III.3 and III-8.

[17] LAMC § 12.03 defines Outdoor Eating Area and LAMC § 12.13-A.2(b)(2) allows Outdoor Eating Areas only between a building and its front yard, or between a building and a side or rear yard abutting a street.

The proposed Zone Change to C2 would erase all these limitations on outdoor eating and drinking, at least according to the questionable interpretation implied in the DEIR. Outdoor eating areas in the C2 Zone may be permitted *unlimited area*, may be located above ground level or on rooftops, and do not need to be permitted in conjunction with a restaurant.[18] The Project could propose outdoor eating and drinking on potentially over a hundred thousand square feet of outdoor area, leaving only walkways as true publicly-accessible open space.

The Zone Change from C4 to C2 has profound land use implications omitted entirely from the DEIR. Rather than a serene pool deck with garden views, the West Site Amenity Deck is transparently intended to function as an alcohol-fueled party venue for the Project's thousands of residents and their hordes of guests. The Amenity Decks include an indoor bar with alcohol storage and two multipurpose rooms with built-in alcohol storage rooms.[19] Alcohol service is prohibited on only a small fraction of the East Site Amenity Deck.

The DEIR's failure to disclose the land use effects of the Zone Change subverts CEQA's core purpose of facilitating informed decision-making. Within the Hollywood Community, noise and other environmental impacts of outdoor dining are prime concerns for new developments. Despite this, the City Council and the public are being asked to approve a Zone Change from C4 to C2 with *literally no information* on the implications of that change. By withholding this factual foundation from the public, the DEIR evaded scrutiny of the extent of outdoor drinking, whether the DEIR adequately analyzed the environmental impacts of an unprecedented increase in outdoor drinking, and whether the DEIR should consider an alternative maintaining the existing C4 Zone. Because the disruptive impacts of noise and public intoxication are uniquely amenable to testimonial evidence from impacted residents, silencing their voices precludes highly relevant information from being presented to the decision maker.

The Zone Change is one of just two requested legislative zoning approvals and is listed countless times in the DEIR and Application – the absence of any discussion of its

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[18] Zoning Administrator Interpretation 1808 and LADBS Zoning Manual p. 36-37, attached as **Exhibit 22**.

[19] Plans p. A-151 (depicting alcohol storage and indoor bar on the West Site) and p. A-152 (depicting alcohol storage and a multipurpose room on the East Site).

implications cannot plausibly be an oversight. Rather than a good faith effort at full disclosure, the DEIR's omission of any discussion of the Zone Change deprives the public of the factual foundation needed to intelligently comment on environmental impacts of urgent concern to the affected community. How can the public maintain trust that the City has honestly reckoned with the Project's environmental implications if it neglects to ask what is being approved? The City and Applicant must disclose to the public in a recirculated DEIR what they knew from the start: that the Zone Change is intended to permit an unprecedented area of outdoor alcohol consumption.

4. The Project Description Fails to Specify Temporary Off-Site Parking for Capitol Records During Construction.

The LAMC mandates that all required parking shall be continuously maintained for a building. At any time, when a building maintains fewer parking spaces than required, LADBS shall notify the property owner and shall "automatically" cancel the Certificate of Occupancy if the parking is not provided on-site or off-site by a covenant.[20] The Project proposes demolition of the Capitol Records parking lot and construction of new parking and structures over a minimum of 4.5 years.[21] Therefore, the Project must procure a covenant guaranteeing sufficient off-site parking for the Capitol Records Complex, or else LADBS would have a ministerial obligation to give the developer notice and initiate proceedings to cancel the Certificate of Occupancy.

The DEIR makes no mention of operation of the Capitol Records tower during construction, giving the false impression that it would be closed during construction. The precise location of off-site parking influences which streets and freeways employees and visitors take, impacting both VMT on surface streets and LOS on US-101. None of that has been disclosed, analyzed or mitigated in the DEIR.

Moreover, if the Applicant is unable to procure the required parking spaces within 750 feet of the property in compliance with the LAMC, a separate entitlement would be required to allow parking by lease, or by covenant on a site further than 750 feet from the property. Furthermore, if the developer intends to operate Capitol Records without temporary off-site parking, the DEIR must analyze the anticipated altered traffic patterns

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[20] LAMC § 12.26-E.1(b).

[21] DEIR p. IV.O-16.

of removing all currently-provided parking for 114,303 square feet of office space, requiring potentially hundreds of employees to park elsewhere in the Project vicinity.

The location of interim off-site parking is material to an accurate Project description not only because of the vast scale of replacement parking required, but also because the parking could be displaced intermittently through the year 2040. The DEIR's vagueness regarding this fundamental land use and operational feature requires recirculation.

5. The DEIR's Description of Non-Existent "Extremely Low Income" Units Appears Calculated to Suppress Project Opposition Due to its Supposed Affordable Component.

The DEIR stifles public input into the Project by misleadingly suggesting that affordable units would be set aside for Extremely Low Income ("ELI") seniors, when in **fact the Project has no obligation to provide *any* ELI units**. Rather, the Project could potentially satisfy the legal minimum affordable requirement by setting aside units at the less-restrictive Very Low Income ("VLI") level. The DEIR repeatedly asserts that the senior units would be set aside for "Extremely Low and/or Very Low Income households." Nearly every time the term "Very Low Income" appears, it is preceded by the phrase "Extremely Low and/or."[22]

Why is the DEIR so meticulous about this wording? By listing ELI units *before* VLI units, the DEIR creates the false impression that the affordable units are primarily ELI. The effect will be to trick the public into believing that the Project benefits persons of greater financial need than it would in fact assist. The lack of affordable housing is a grave concern to many within the Hollywood Community, and members of the public would be more likely to withhold objection to the DEIR due to the allure of ELI senior units. By suppressing accurate information about the level of affordable housing, the DEIR also will suppress public comment on the DEIR. Therefore, the misleading suggestion that the Project contains any ELI units precludes informed public participation and decision-making and renders the DEIR deficient as an informational document.

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[22] E.g., DEIR p. II-2, II-11, II-17, II-26, II-38 and IV.J-13.

6. The Project Description Misrepresents Senior Access to Amenity Decks.

Immediately after misleading the public on ELI senior units, the Project description touts the luxurious amenities the seniors would have access to. The DEIR states: "In pursuit of a healthy environment, all residential and senior housing units can access the shared outdoor amenity space to take advantage of the California climate."[23] This statement is materially misleading, however, because the Project functionally denies seniors access to the Amenity Decks. Seniors must run a gauntlet of loading driveways and intoxicated tourists at ground level.[24] The Project Description is materially misleading because it creates a false impression that seniors have meaningfully equal access to the Amenity Decks, which is simply not the case. In addition, the DEIR fails to acknowledge that the Amenity Decks would likely be crowded with intoxicated residents and their guests, rendering the Amenity Decks unsuitable for senior recreation. These misrepresentations, and others discussed, taint any future approval of a statement of overriding considerations because it precludes members of the public and the City from intelligently balancing the Project's environmental costs against the false allure of dignified senior housing.

7. Capitol Records Has Not Consented to Development of its Parking Lot, Rendering the Public Plaza Illusory.

The DEIR highlights the alluring prospect of vast public plazas and gardens, yet much of this public open space would be an empty promise if Capitol Records withheld its consent to redevelop the surface parking lot. As illustrated in Figure II-27, Capitol Records' failure to consent would require a significant re-design of the street-level public

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[23] DEIR p. 33.

[24] On the West Site, Plans p. A-106-108 provide no convenient access from the senior units to the Amenity Deck, requiring seniors to either travel through the underground garage or exit Ivar Avenue past alcohol-serving seating areas and the loading dock to enter the market-rate unit entrance. On the East Site, Plans p. A-126-128 provide no convenient access from the senior units to the Amenity Deck, requiring seniors to travel through the underground garage or exit Argyle Avenue, walk the length of the entire plaza, and enter the market-rate unit building.

plaza on the East Site, shrinking open space, narrowing walkways and removing the garden entirely.[25] Much of the remaining open space consists of a relatively narrow walkway of limited recreational use. Although nearly two years passed between the filing of the application and the publication of the DEIR, the developer has still been unable to obtain the consent of Capitol Records to convert its surface parking to a public plaza to this day.

Fundamentally, the lack of consent from the Applicant's tenant does not relieve the City of its obligation under CEQA to establish a stable, accurate and finite Project description. As the Project proponent and the owner of the property, Millennium is responsible for resolving its tenant disputes without muddying the DEIR. The DEIR must be recirculated to accurately define the Project as the scenario identified in Figure II-27 to correct the misconception of illusory open space.

8. The Proposed Outdoor Theater is Illusory.

The DEIR spares no detail describing the supposed public benefits afforded by the proposed outdoor theater. Named after Nat King Cole, the performance area and stage would comprise 10,198 square feet with an occupancy of 350 people.[26] To entice members of the public to swallow the bitter pill of supporting the Project, the DEIR highlights future performances by nearby schools and community groups.

Selling the Project based on the outdoor theater, however, misleads the public because outdoor theaters are not a permitted use in the C2 Zone. Park and recreation facilities exceeding 200 seats are permitted only in the OS Zone.[27] The C2 Zone permits "auditoriums having a seating capacity for not more than three thousand (3,000) people" but auditoriums, but definition, are seating areas located *within buildings*.[28] Moreover,

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25 DEIR p. II-59 and Figure II-27.

26 DEIR p. II-58.

27 LAMC § 12.04.05-B.1(a)(i).

28 See Webster's Dictionary defining "auditorium" as "the part of a building where an audience sits" and "a room, hall or building used for public gatherings."

"theaters" are permitted in the C2 Zone but are subject to a limitation requiring that "all activities, including storage, shall be conducted wholly within an enclosed building."[29] The Chief Zoning Administrator has promulgated a List of Uses Permitted in Various Zones affirming that theaters, auditoriums and recreation areas are permitted in the C2 Zone only when the uses are conducted "wholly within an enclosed building" with the sole exception of accessory outdoor storage.[30]

The DEIR fails to address or study the clear conflict between the proposed outdoor theater and the LAMC prohibition on such uses in the C2 Zone. The DEIR endeavors to convince members of the public to withhold opposition with the inducement of obtaining supposed public benefits such as the proposed theater. Not only does this render the Project description a moving target, it misleads the public because the bargained-for community benefit cannot legally be provided.

9. The DEIR Must Be Recirculated to Disclose that the Applicant May Abandon AB 900 Obligations.

The DEIR misleads the public yet again by failing to disclose that the Applicant is not obligated to proceed as an Environmental Leadership Development Project ("ELDP") and provide the associated community benefits, such as a prevailing and living wages, required for such developments. The DEIR emphasizes how the Project was blessed by the Governor himself as a development guaranteed to "create high-wage jobs":

> "In order to be certified as an ELDP, the Governor determined that the Project would result in a minimum investment of $100 million, would create high-wage jobs, and would not result in net additional greenhouse gas (GHG) emissions, as determined by the California Air Resources Board. […] The Governor's certification determined

[29] LAMC § 12.14-A.1(a)(1) permits C1.5 uses within the C2 Zone. LAMC § 12.13.5-A.2(a)(30) permits theaters in the C1.5 Zone; and LAMC § 12.13.5-A(2)(b)(3) requires all activities to occur within an enclosed building.

[30] ZA-2015-2348-ZAI, attached as **Exhibit 23**. For the C2 Zone auditoriums are addressed on p. 61, theaters are addressed on p. 71, and recreation areas are addressed on p. 69.

> that the Project complies with all of these applicable requirements. The Governor's certification and related documentation are provided in Appendix B of this Draft EIR."[31]

To members of the public who review Appendix B to verify these claims, the obligation to provide these community benefit appears absolute: the developer "will comply with" prevailing wage standards; "will include the prevailing wage requirement in all contracts for the performance of the work"; and "will enter into a project labor agreement[.]"[32]

An ELDP certification is synonymous with mandatory public benefits, yet Millennium has the option to abandon the ELDP process altogether and abandon its hollow promise to provide these benefits. Yet the only hint that it could renege on these promises is buried in the last paragraph in an exhibit to an appendix. According to the Project's letter of commitment, prevailing and living wages would not be required if the Project loses AB 900 certification.[33] This might occur, for example, if public outcry forces the City to temporarily reconsider a rubber-stamp approval – even if the City approves the exact same Project in January 2021.[34]

The DEIR omits material information to public participation by failing to clarify that the developer has no obligation to proceed as an ELDP Project. For much of the

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[31] DEIR p. II-69.

[32] DEIR Appendix B, p. 17-18.

[33] DEIR p. 292.

[34] While we are aware that Millennium is seeking a legislative amendment to extend the current, January 1, 2021 sunset provision for ELDP certification, that extension might not be granted. It certainly should not be granted by State legislators for this developer, this Project, and its almost countless violations of law. We also find it in character for Millennium that its lobbyists on May 13, 2020 testified to the State Assembly Natural Resources Committee that it should vote to extend the ELDP sunset provision by another year (beyond the 3-year extension they were already seeking) "because of the COVID situation." Yet the City here has not given the public a single additional day for commenting during the pandemic and Mayor Garcetti's shutdown orders.

public, public benefits are the only aspect of the Project not offensive. The absence of this disclosure leaves the public with the false impression that the public benefits of ELDP certification are built into the Project description, precluding informed public participation.

10. The DEIR's Myriad Project Description Deficiencies Require Recirculation.

CEQA mandates complete and honest disclosure of all relevant information. The Project description, however, is so riddled with material misrepresentations and bad faith omissions that it is effectively a piece of propaganda published by the City.

The public has a right to know (1) the true FAR of the Project to compare it to other developments; (2) the precise locations and extent of outdoor alcohol service; (3) the regulatory consequences of the Project's Zone Change from C4 to C2; (4) the location of Capitol Records parking during Project construction; (5) whether the Project is in fact committed to providing ELI senior units, and how many units are guaranteed; (6) whether seniors would enjoy meaningful access to the Amenity Decks; (7) whether the developer can abandon large swaths of the street level plaza on the flimsy basis that its own tenant prefers surface parking; (8) whether the developer will discard the much-touted outdoor theater entirely because it is not a permitted use in the C2 Zone; and (9) whether the Project can abandon the public benefits described in the ELDP application.

The totality of the misleading, confusing and omitted information in the Project Description renders informed public participation and decision-making impossible.

Consistent with the Project description, the City could potentially issue permits for a development with *zero* ELI units, alcohol service around every corner, a substantially reduced public plaza due to Capitol Records' objections, a further reduction in open space due to the Applicant's choice to proceed with the Hotel Option requiring less open space and a site plan actively hostile to senior access to the Amenity Decks. This scenario, though apparently consistent with the vague Project description, bears no resemblance to the Project as conceived by the public and the City during the DIER comment period. The Project description, therefore, is impermissibly vague, inaccurate and misleading. The DEIR must be recirculated to disclose all Project details that can be reasonably ascertained and precisely defining minimum standards for open space,

affordability and senior access to ensure the developer does not abandon these crucial public benefits after approval.

B. The DEIR's Land Use Analysis is Fatally Flawed.

1. The Land Use Analysis Improperly Cherry-Picks Consistent Policies.

CEQA requires that a DEIR's analysis under the Land Use topic disclose and analyze how the Project is *inconsistent* with plans, programs, statutes, ordinances and policies adopted to avoid or mitigate environmental impacts. The Land Use and Planning section of the DEIR, however, consists of an extended "analysis" of the Project's *consistency* with these documents. This methodological flaw permeates the DEIR's analysis of consistency with the Hollywood Redevelopment Plan, masks numerous conflicts, and misleads the public about the Project's irreconcilable conflicts with land use policies.

2. The DEIR Fails to Disclose Pending Litigation or Identify the CRA/LA as a Responsible Agency.

The DEIR's analysis of the Project's consistency with Community Redevelopment Law[35] and the Hollywood Redevelopment Plan[36] rests on a fatally flawed premise: that the City recently lawfully took over all of the redevelopment plans and functions from the CRA/LA – the successor agency to the City's former redevelopment agency that planned and enacted these plans under state redevelopment law. This purported transfer, however, is under challenge in court.[37] The lawsuit alleges that the City's transfer resolution and ordinance were *ultra vires*, among other bases of challenge. The lawfulness of the purported transfer has not been judicially reviewed. Thus, until the end of that litigation, the CRA/LA is a "responsible agency" under CEQA, and should be

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35 Health and Safety Code § 33000, et seq.

36 Ordinance No. 175,236, eff. July 12, 2003, attached as **Exhibit 24**

37 AIDS Healthcare Foundation v. City of Los Angeles, LASC Case No. 19STCP04589. First Amended Verified petition for writ of mandate attached as **Exhibit 25**.

treated as one in the DEIR. It has powers and duties over review and approval of parts of the Project, including the requested increase of the FAR from 4.5 to 1 to 6 to 1 under the Hollywood Redevelopment Plan.

Consultation with responsible agencies involves multiple precedent procedural steps including notifying the CRA/LA and sending the full EIR through the State Clearinghouse to the CRA/LA for comment. Here, the CRA/LA has been written out of the process entirely. The City and Millennium have entirely omitted this information, and the existence of pending litigation which, if successful, would invalidate the purported transfer to the City of the CRA/LA's land use functions and oversight related to the Project and Project site, which are in the Hollywood Redevelopment Plan area. This omitted information is crucial to informed public participation and decision-making. As a result, omitting the CRA/LA from its role in this CEQA process is a violation that cannot be cured without recirculation.

3. The DEIR Fails to Disclose Required Discretionary Approval to Exceed 4.5 to 1 FAR.

Regardless of the outcome in the pending CRA/LA transfer litigation, the DEIR fails to disclose that the Hollywood Redevelopment Plan and the Development Limitation on the property require that the Project obtain a discretionary determination to exceed 4.5 to 1 FAR – from whichever agency properly maintains that authority. Hollywood Redevelopment Plan Section 506.2.3 provides:

> "Proposed development in excess of 4.5:1 F.A.R. up to but not to exceed 6:1 F.A.R. or such other density may be permitted by future amendments to the Community Plan, on a specific site may be permitted as hereinafter set forth […]"

Consistent with the Redevelopment Plan, the D Limitation on the Project Site reads:

> "The total floor area contained in all buildings on a lot shall not exceed three (3) times the buildable area of the lot. A project may exceed the 3:1 floor area ratio provided that – The Community Redevelopment Agency Board finds that the project conforms to: (1) the Hollywood Redevelopment Plan, (2) a Transportation Program adopted by the Community Redevelopment Agency Board

> pursuant to Section 518.1 of the Redevelopment Plan, (3) the Hollywood Boulevard District urban design plan as approved by the City Planning Commission and adopted by the CRA Hollywood Redevelopment Plan; and, if applicable, (4) any Designs for Development adopted pursuant to Section 503 of the Redevelopment Plan; and
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> a. The project complies with the following two requirements: A Disposition and Development Agreement or Owner Participation Agreement has been executed by the Community Redevelopment Board; and the Project is approved by the City Planning Commission, or the City Council on appeal, pursuant to the procedures set forth in Municipal Code Section 12.24-B.3."[38]

Prior to the purported transfer of land use authority from the CRA/LA to the City, the CRA/LA adhered to the requirement within both the Redevelopment Plan and D Limitation to review developments exceeding 4.5 to 1 FAR, requiring board approval and owner participation agreements ("OPAs") pursuant to Hollywood Redevelopment Plan Section 402.3. The City's Transfer Resolution and Ordinance, currently under legal challenge, purportedly only transferred the Section 500 series of provisions of the Hollywood Redevelopment Plan.[39] In so doing, as one example of how the City's actions were *ultra vires*, the City purported to "leave behind" Section 402.3 of the Hollywood Redevelopment Plan that obligated the redevelopment agency and its successors to use the OPA to extract from the developer additional public benefits to continue implementation of the redevelopment plan.

OPAs, far from an impotent procedure, implement a core redevelopment function by allowing the CRA/LA to substantively review and condition a development to ensure consistency with the Redevelopment Plan goals – including extracting the cost of other street improvements, safety measures, and programs to actually implement the redevelopment plans. In this case, Project-specific conditions to ensure consistency with

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[38] Ordinance No. 165,659, eff. March 21, 1990, Section 4.

[39] Resolution dated September 6, 2019 and adopted September 24, 2019 attached as **Exhibit 26**.

Redevelopment Plan goals could mitigate some of the Project's most offensive components. For example, the Hollywood Redevelopment Plan's robust affordable housing objectives encourage – if not mandate – a greater affordable set-aside in the Project, especially in the Hotel Option which transparently abuses Measure JJJ's affordable set-aside calculations. Implementing these policies, the City or CRA/LA could justifiably impose a condition mandating better and more affordable housing.

As part of the CRA/LA Transfer Ordinance, the City adopted procedures for implementing its supposed limited land use authority. The City purported to establish a parallel discretionary procedure called Redevelopment Plan Project Compliance review, defined in LAMC § 11.5.14-C as "a decision by the Director that a Redevelopment Plan Project complies with the applicable Redevelopment Regulations, either as submitted or with conditions imposed to achieve compliance with the Redevelopment Regulations."[40]

Even if the City's unlawfully created approval process applied, which it does not,[41] the DEIR fails to describe that the Project is subject to a discretionary approval to exceed 4.5:1 FAR (either by the CRA/LA or the City lawfully stepping into the shoes of the CRA/LA under the Community Redevelopment Law). Members of the public reviewing the requested discretionary approvals would have no clue that the Project requests a Project-specific dispensation to exceed 4.5:1 FAR, or that this approval entails the authority to condition the Project to implement the Redevelopment Plan.

Emphatically, ***the Hollywood Redevelopment Plan does not permit 6 to 1 FAR by-right*** – it is permitted only when the listed findings are made in the affirmative. Although the procedural requirements for an OPA are identified in Hollywood Redevelopment Plan Section 402.3, the substantive requirement for a discretionary approval is contained within Section 506.2.3 itself because it requires findings of fact. In fact, the DEIR concedes that an FAR exceeding 4.5 to 1 is permitted only upon

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[40] Ordinance 186,325, effective November 11, 2019.

[41] The current litigation challenges the City's adoption of such a process because state law only allows the City to step into the shoes of the former redevelopment agency and successor agency as already set forth in the state's redevelopment laws.

"findings" that the Project's FAR "would be compatible with and would not degrade adjacent properties[.]"[42]

The DEIR further states that approval of an FAR exceeding 4.5 to 1 "***would be conducted by the Planning Department***" in clear violation of the City's own Redevelopment approval process and CEQA.[43] The City's Multiple Approvals Ordinance requires that projects requiring legislative approvals (such as the requested Zone and Height District Changes) and quasi-judicial approvals (such as the determination to exceed 4.5 to 1 FAR) shall be initially heard by the City Planning Commission and decided by the City Council.[44]

Planning Department staff, even acting under the delegated authority of the Director of Planning, have no legal authority to make a determination reserved for the City Council. To make matters worse, the DEIR effectively grants *carte blanche* power to Planning Department staff because it fails to identify performance standards pursuant to which the staff would make this determination. By failing to identify the discretionary actions required to approve the Project, including a hypothetical future determination by Planning Department staff, the Project description is fatally deficient.

4. The Height District Change Neuters the Mitigation Measures Incorporated into the D Limitation.

The DEIR fails to properly analyze the provisions of the existing D Limitation as mitigation measures adopted to avoid and mitigate infrastructure impacts. The D Limitation was imposed to Regional Center Commercial properties in Hollywood as a mitigation measure in compliance with AB 283, and reflects the intent of both the former redevelopment agency and the City in applying correct zoning limitations to the properties.

The 1988 Hollywood Community Plan, the 1986 Hollywood Redevelopment Plan, and the associated EIRs for those plans all acknowledged that if Hollywood were built

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42 DEIR Appendix J, p. 19.

43 DEIR Appendix J, p. 22.

44 LAMC § 12.36-C.

out at the density permitted by the City's original 1946 zoning code, public infrastructure would be completely overwhelmed. These two Hollywood Plans acknowledged the inadequacy of the City's infrastructure to accommodate the 1946 zoning code density and carried out a vital downzoning process as a mitigation measure to avoid the worst infrastructure impacts.

To illustrate, the 1988 Hollywood Community Plan Revision DEIR summary, attached as **Exhibit 27**, describes the ongoing "implementation of . . . development standards" as a land use mitigation measure.[45] These development standards were adopted "to ensure that land use capacity and transportation service are in balance and that land use conflicts and incompatibilities are minimized."[46] Directly tying the "development standards" to an intention to mitigate specific significant impacts, the DEIR observes:

> "Without consideration of the mitigation effects of development standards, the Current Plan would continue to allow a level of development, particularly high density residential and office/commercial projects, that could foster land use conflicts and incompatibility, including parking conflicts, height conflicts, shade/shadow effects, obstruction of views and vistas and potential nuisances."[47]

As the "development standards" contemplated in the DEIR, the City's D Limitations establish substantive and detailed procedural requirements to monitor and mitigate infrastructure impacts. Principally, the D Limitation permits a development to exceed 4.5 to 1 FAR *only* if it complies with a long-term transportation plan specifically prepared for the Hollywood Redevelopment Plan area pursuant to Section 518.1. These D limitations reflect the agreement by the former redevelopment agency to accept responsibility and liability for transportation, open space, parking, pedestrian safety and other infrastructure improvements needed before changes to zoning could be made.

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45 **Exhibit 27**, p. 12.

46 Id.

47 Id. at p. 24.

The D Limitation provides a highly-detailed procedure to permit developments exceeding their by-right FAR, including compliance with a transportation plan. However, neither the City nor CRA/LA has ever adopted the mandatory transportation plan, a necessary pre-requisite finding to approve FAR in excess of 4.5 to 1. Nor can the Mobility Element function as the required transportation plan, because it failed to specifically address five priority corridors identified in Redevelopment Plan Section 518.1. Therefore, the City's removal of the D Limitation improperly side-steps existing mitigation measures requiring preparation of, and compliance with, a comprehensive transportation plan for the Hollywood Redevelopment Plan area.

5. The DEIR Lacks Substantial Evidence that the Project Complies with the Hollywood Redevelopment Plan's Infrastructure Monitoring Mandates.

The DEIR altogether omits discussion of the mandatory infrastructure monitoring required by the Hollywood Redevelopment Plan. Section 506.3.2 requires that the Agency, or the City if properly standing in its shoes, "shall monitor" all development in the Regional Center Commercial designation. When the average density in the Regional Center Commercial designation reaches 2 to 1, the Agency or City "shall submit to the City Planning Commission and to the City Council" a plan to acquire open space or restrict density to regulate future development as density approaches the maximum 4.5 to 1 FAR averaged across the Regional Center Commercial designation.

The DEIR not only fails to disclose this mandatory provision essential to monitoring and mitigating environmental impacts in the Redevelopment Plan area, it fails to provide a scintilla of evidence that the Project would not exceed the 2 to 1 FAR threshold. At a moment when the public's faith in the City has been shattered by allegations of breathtaking corruption, the City must make its tabulations available to the public for verification.

6. The DEIR Misrepresents Measure JJJ's Authority to Supersede the 6:1 FAR Limitation in the Hollywood Redevelopment Plan.

The Project proposes an FAR of 6.973 to 1 in violation of Hollywood Redevelopment Plan provisions explicitly disallowing development in excess of 6:1

FAR.[48] Section 506.2.3 provides:

> "The Agency may permit development in excess of 4.5:1 F.A.R. **up to but not to exceed 6:1 F.A.R**. or such other density as may be permitted by future amendments to the Community Plan, only if the Agency makes the following findings and determinations: […]" (Emphasis added.)

The strict 6:1 FAR limitation is also reflected in Hollywood Community Plan Footnote 9, which provides:

> "This designation is limited to the Hollywood Redevelopment Project Area. Development intensity is limited to 4.5:1 FAR with a maximum of 6:1 FAR possible through a Transfer of Development Rights procedure and/or City Planning Commission approval."

Despite this clear prohibition on FAR exceeding 6:1, the DEIR omits any meaningful analysis of how the Project's FAR complies. The DEIR's discussion of Section 506.3.2 is legally erroneous and conclusory, stating that "the Project is eligible for an FAR bonus of up to 35 percent (8.1:1 FAR) pursuant to LAMC Section 11.5.11 for providing at least 11 percent of the total residential units as Very Low Income households."[49]

However, neither LAMC Section 11.5.11 nor any other provision of the LAMC can legally supersede the Hollywood Redevelopment Plan, which has the superior authority of state law. To distract from this inconvenient legal truth, the DEIR repeatedly – and falsely – states that the requested incentives and concessions are authorized "pursuant to California Government Code 65915."[50] By purportedly relying on State

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[48] Consistent with the strict 6:1 FAR limitation in the Hollywood Redevelopment Plan, Footnote 9 of the Hollywood Redevelopment Plan permits a "maximum 6:1 FAR" in areas designated Regional Center. LAMC § 12.21.1 further restricts Height District 2 to a maximum FAR of 6:1.

[49] DEIR Appendix J, p. 19.

[50] E.g., DEIR p. II-2, II-74 and IV-H.23.

Density Bonus Law, the DEIR lays the foundation for its conclusion that the Project may properly exceed the 6:1 FAR limit of the Hollywood Redevelopment Plan, itself having the authority of state law.[51]

Based on the absurd analysis in the DEIR, the Applicant seeks and receives a development bonus pursuant to Section 65915 to allow an increase in FAR from 6 to 1 to 7 to 1. However, LAMC § 11.5.11(a) clearly states that developments receiving development bonuses pursuant to Section 65915 are not eligible for processing under LAMC § 11.5.11:

> "A Developer seeking and receiving a density or development bonus under the provisions of California Government Code Section 65915 or any other State or local program that provides development bonuses shall not be eligible for the development bonuses pursuant to this Section. For purposes of this provision, development bonuses shall include discretionary General Plan amendments, zone changes, and height district changes." (Emphasis added.)

Because Measure JJJ itself precludes the Project from relying on State Density Bonus Law for any development bonus, the Project's FAR is not permitted.

Furthermore, the authority to approve the requested incentives and concessions originates not in the State Density Bonus Law, but in LAMC § 11.5.11(e):

> "Developer Incentives. In addition to the requested General Plan amendments, zone changes and/or height district changes, a Project that provides affordable housing consistent with this Section shall also be entitled to three incentives or concessions **specified in California Government Code Section 65915(k)** or the applicable Affordable Housing Incentive Program." (Emphasis added.)

Even a cursory analysis of this language makes it abundantly clear that the incentives and concessions are requested pursuant to LAMC § 11.5.11(e), rather than Government Code Section 65915.

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[51] See DEIR p. II-11 and IV-H.23.

First, the LAMC references Subdivision (k) of Section 65915, which is merely a definition of types of incentives – not the entire Density Bonus Law itself. Subdivision (k), crucially, contains only a definition of the phrase "concession or incentive."

Second, the LAMC references incentives or concessions "specified in" the Density Bonus Law, further supporting the conclusion that the LAMC merely draws upon the definitions found in the Density Bonus Law and adopts those definitions by reference into the LAMC. The only procedure to exceed the 6 to 1 FAR maximum in the Hollywood Redevelopment Plan is a Variation pursuant to Section 521 requiring findings of unnecessary hardship and exceptional site-specific circumstances. The DEIR's assertion that the Project's entitlement is authorized "pursuant to" State Density Bonus Law is not only mistaken, it is calculated to muddy the community's understanding of applicable regulations. The DEIR deprives the reviewing public of the opportunity to correctly understand the sources of authority that the City purports to utilize to boost the FAR of the Project to new astronomical heights.

It is transparent that Millennium and the City are trying to bootstrap a further boost of the FAR by misrepresenting to the public that the legal authority for the entitlement is the State Density Bonus Law. This gives the City a false argument that the further density increase is authorized by a state law program (Density Bonus Law) that must be construed to override the lesser FAR limit of the state law enacted Hollywood Redevelopment Plan. But the argument is simply wrong. Measure JJJ as set forth in LAMC Section 11.5.11(e) is a local enactment that simply borrows definitions from a state law. It provides no legal basis to override the FAR limit of state law as enacted in the Hollywood Redevelopment Plan. To contend otherwise is false and misleading to the reviewing public. These false statements are prejudicial because they deprive the reviewing public of the opportunity to correctly understand that sources of authority that the City purports to utilize to boost the FAR of the Project site to new astronomical heights.

7. The DEIR Fails to Disclose a Conflict with the Hollywood Redevelopment Plan Definition of Floor Area.

The Project requests a purported incentive or concession to exclude the area of covered balconies and terraces from the definition of Floor Area. However, the Hollywood Redevelopment Plan defines Floor Area in Section 506 as "the ratio of total floor area of all buildings in a parcel to the parcel area. The floor area of a building

excludes space devoted to stairwells, elevator shafts, light courts vehicular parking and mechanical equipment." In practice, the CRA/LA has consistently interpreted it to have the same meaning as the LAMC to harmonize FAR calculations among the CRA/LA, the Department of Building and Safety and the Department of City Planning.

The Project proposes to deviate from this consistent and logical practice by re-defining the scope of Floor Area under the LAMC. However, because the incentive or concession is requested under the authority of Measure JJJ – a local ordinance – it cannot alter the implementation of the Hollywood Redevelopment Plan, which is a creature of state law. For purposes of calculating the Redevelopment Plan limitation on development exceeding 6:1 FAR, Floor Area shall include the area of covered terraces and balconies.

The DEIR fails to identify the conflict with the Hollywood Redevelopment Plan's definition of Floor Area, rendering its analysis of consistency with policies and objectives legally deficient. The DEIR's analysis refers to development of "up to 7:1 FAR"[52] – yet it fails to analyze the true Project FAR of 7.81 to 1. By basing its analysis on a foundation of fictitious FAR numbers, the DEIR fails to present a coherent and good faith analysis of land use consistency.

IX. THE DEIR'S AIR QUALITY ANALYSIS VIOLATES CEQA.

An EIR is intended to be a document of full environmental information, informing the public and the decision makers of all significant impacts of a proposed project. (Pub. Res. Code § 21002.1(a); Guidelines §15121.) Here, the DEIR fails at full environmental disclosure by failing to show adequately the baseline of air pollution that exists in the South Coast Air Basin (SCAB), where Los Angeles and the Project are located (DEIR, p. IV.B-16), and by failing to show adequately that the Project's impacts on that pollution have been mitigated.

A. The DEIR Fails to Disclose the Existing Ozone Problem.

The DEIR grossly understates the existing air pollution problem. The American Lung Association's publication, *State of the Air 2020*, attached hereto as **Exhibit 28**, relies on publicly available data to report that "Los Angeles has been the most polluted

[52] DEIR Appendix J, p. 19.

city in the US for ozone for 20 of the 21 years the Lung Association has been issuing this Report" (State of the Air, p. 7), and it has that woeful distinction now. (Id., p. 20.) The Los Angeles-Long Beach area is reported by the Lung Association as exposing 4,270,638 persons under 18 and 2,583,214 people 65 or over to these harmful levels of ozone. (Id., p. 22.)

Although the DEIR does acknowledge that the South Coast Air Basin ("Basin") is in "extreme nonattainment" with the federal National Ambient Air Quality Standards (NAAQS) and nonattainment with the California Ambient Air Quality Standards (CAAQS) (DEIR, pp. IV.B-24 and 25), it does not explain what "extreme" nonattainment means: it is the worst category of ozone pollution in which the U.S. EPA can categorize an air basin under the federal Clean Air Act (42 U.S.C. § 7511(a)), having among the highest ozone concentrations in the air anywhere in the nation.

U.S. EPA's Green Book states that only two areas in the nation are in "extreme" nonattainment for ozone, namely the Los Angeles portion of the South Coast Basin ("Basin"), and the San Joaquin Valley. (https://www3.epa.gov/airquality/greenbook/jnc.html. **Exhibit 29**.)[53] Further the San Bernardino County and Riverside portions of the Basin are in the next-worst category, being in "severe" nonattainment of the NAAQS for ozone. (Id.) The Project is proposed to be built in the middle of an air quality disaster, but fails to properly identify and explain this.

B. The Air Quality Management Plan for the Basin Does Not Show That the Basin Will Meet Applicable Federal and State Air Quality Standards for Ozone.

Further, the DEIR fails to inform the public and the decision makers that the Basin has any prospects in the foreseeable future to remedy this critical public health threat. The DEIR does disclose some of the serious damage to human health that ozone causes, including aggravating asthma, causing asthma attacks, contributing to pulmonary diseases, inhibiting (perhaps permanently) children's lung capacity and development, and causing lung inflammation and difficulty breathing. (DEIR, p. IV.B-1 to 3, and the references in footnotes 1 through 7.)

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[53] EPA's Green Book is cited as a reference in the DEIR, but without guidance as to how to find the data referred to here.

The State of the Air adds to this dismal catalogue of ozone health damage, reporting that "[e]xposure to ozone may also cause cardiovascular harm (e.g., heart attacks, strokes, heart disease, congestive heart failure), [may] cause harm to the central nervous system. And [m]ay cause reproductive and developmental harm." (State of the Air, p. 42.)

The DEIR fails to inform the public and the decision makers of how far the Basin still has to go to meet the federal and state ozone standards. Instead, the DEIR focuses on the California Air Resources Board's ("CARB") and South Coast Air Quality Management District's ("SCAQMD") plan to meet the federal and state ozone standard: namely, the 2016 Air Quality Management Plan ("AQMP") for the Basin, and the Project's purported consistency with that plan.

The DEIR treats the AQMP as the operative air quality plan for the Basin because "the 2016 AQMP has been adopted by the SCAQMD and CARB" (DEIR, p. IV.B-37), and implies that the AQMP will solve the ozone problem. The DEIR does not make it clear that not only does the Basin fail to meet the National Ambient Air Quality Standard ("NAAQS") for ozone, but that it may not meet that standard by the 2023 deadline. This is a serious violation of the City's duty under CEQA to provide full environmental information about the existing environment in which the Project would be built. (Guidelines § 15125(a.)

The Guidelines specify that "[k]knowledge of the regional setting is critical to the assessment of environmental impacts" (Guidelines § 15125(c)), and that is especially true here. The DEIR fails to tell the public how significantly the Basin needs to severely reduce its NOx emissions in order to meet the NAAQS for ozone and receive full approval from the U.S. EPA.[54] Until the AQMP is fully federally approved, the Basin still cannot show that it will meet the NAAQS for ozone by the deadline, nor can the DEIR show that consistency with the AQMP is enough to prove that Project emissions

[54] Nor is the 2016 AQMP fully approved by U.S. EPA, another vital piece of information about the baseline that is omitted by the DEIR. The U.S. EPA website shows that the Los Angeles portion of the South Coast Air Basin's AQMP is only *partially* approved, with many control regulations/strategies still not approved by EPA. https://www3.epa.gov/airquality/urbanair/sipstatus/reports/ca_elembypoll.html#ozone-1hr__1979__413.) **Exhibit 30**.

will not have a significant impact by worsening an existing, critical, air pollution problem.

In fact, the Basin still has a serious ozone problem, to which the Project will add. CARB issued a report in November, 2019 entitled "South Coast 8-Hour Ozone SIP[55] Update,"("SIP Update") attached hereto as **Exhibit 31**, which clarified this point, stating:

> "The 2016 AQMP attainment demonstration specified that NOx emissions in the South Coast [Basin] need to be reduced to a level of 141 tpd [tons per day] of NOx to achieve the ozone standard. As stated above, baseline NOx emissions in 2023 have been reduced to 269 tpd due to current regulations, *leaving an additional 128 tpd of NOx emissions reductions to be achieved*." (Emphasis added.)

CARB's SIP Update also described CARB's and SCAQMD's proposed measures to bring NOx emissions down sufficiently to meet the federal 8-hour ozone standard by the deadline of 2023. (SIP Update, p. 3-5.) The SIP Update makes clear that after CARB and the SCAQMD have done all they can, the federal government must undertake various actions, either adopting strict control measures for NOx emissions sources that California cannot legally regulate (such as ocean-going vessels at sea, aircraft, locomotives, and out-of-state heavy-duty trucks), or providing federal funding for incentive measures to reduce NOx (e.g., to induce owners of high-emitting vehicles to replace them with new, low-emitters), or California will not meet the NAAQS for ozone by the deadline. (SIP Update, p. 3-4.)

Of the 128 tpd shortfall, CARB believes that the federal government must take actions to reduce 67-69 tpd, well over half of the shortfall. (Id., at Table ES-1, p. 4.) CARB notes that "if, due to federal inaction, we do not achieve the standard by 2023, the [Clean Air] Act will require a new SIP setting a new attainment date, *up to ten years later*." (Id., p. 6, emphasis added.) Although the SIP Update expresses hope that the federal government will take the actions needed for the Basin to meet the federal ozone standard "based on U.S. EPA's authority to control emissions and responsibility to act as a good partner to achieve healthy air", it does not cite to any commitment by the federal government to do so. (SIP Update, p. 3.)

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[55] The State Implementation Plan ("SIP") is the compilation of each air basin's own AQMP, plus state measures.

The DEIR does not inform the public of how far the Basin still has to go to meet the federal and state ozone standards, nor that, lacking federal action that has not been promised to occur, that the Basin's residents will continue to be exposed to the serious health effects of ozone exposure for many years. This is a serious failure to meet CEQA's requirement that an EIR provide full disclosure of the baseline against which the Project's impacts will be measured for significant environmental effects.

C. The Project May Have Significant Impacts on Air Quality in the Basin.

The DEIR also fails as a full environmental disclosure document in that it fails to discuss the impact of Project construction emissions on air quality throughout the Basin, and also fails to discuss any resulting public health impacts. (Guidelines § 15126.2 (a) [EIR must provide information on health and safety problems that the proposed project would cause].) The DEIR purports to discuss the "regional context" of the Project (DEIR, p. IV.B-23), but fails to discuss accurately and fully the Project's potential impacts on regional air quality.

The Project's construction will add significant amounts of NOx to the Basin over the three to four and one-half years of its construction. (See Fig. II-30, Project Construction Scenarios.) We note that the DEIR neither calculates nor estimates the total amount of NOx that the Projects construction will emit into the Basin's toxic soup; rather, it focuses on the vastly smaller daily emissions amounts. The NOx emissions from construction will contribute to the formation of ozone. The DEIR briefly states that "[o]zone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides (NOX) in the presence of sunlight under favorable meteorological conditions, such as high temperature and stagnation episodes" (DEIR, p. IV.B-1), and "ozone . . . is a secondary pollutant that forms through photochemical reactions in the atmosphere." (DEIR, p. IV.B-24.) However, at no point does it explain that NOx is a vital precursor to the formation of ozone. The SIP Update states that "reaching the ozone standard would require significant emissions reductions in oxides of nitrogen (NOx)." (SIP Update at p. 1.) In fact, the SIP Update focuses almost entirely on the need to reduce NOx emissions in order to meet the federal ozone standard. (See the chart on page 2 of the SIP Update, which shows the amount of NOx that must still be eliminated.) The DEIR does not make clear the critical importance of NOx reductions.

Neither does the DEIR disclose that ozone precursor emissions (including NOx) and ozone itself are regularly transported across the Basin, and even beyond. The 2016 AQMP describes ozone and ozone precursor transport as follows:

> "The prevailing daytime sea breeze tends to transport pollutants and precursor emissions from coastal areas into the Basin's inland valleys, and from there, still further inland into neighboring areas of the SSAB (especially the Coachella Valley) and the MDAB. Concentrations of primary pollutants (those emitted directly into the air) are typically highest close to the sources which emit them. However, secondary pollutants (those formed in the air by chemical reactions, such as ozone and the majority of PM2.5) reach maximum concentrations some distance downwind of the sources that emit the precursors, due to the fact that the polluted air mass is moved inland by the prevailing winds many miles to areas where maximum concentrations are reached." (2016 AQMP, Appdx. II Current Air Quality, pp. II-1-5 to 6; attached hereto as **Exhibit 32**.)

As an example of how far ozone precursors may be transported and the significance they may have, we note that the SCAQMD is now asking the U.S. EPA to reclassify the Coachella Valley, over 130 miles east of the City of Los Angeles[56] in the South Coast Basin, to a less serious classification for ozone than it now has. The SCAQMD bases the request on the fact that:

> "[W]hen high levels of ozone are formed in the South Coast Air Basin, it is transported to the Coachella Valley. Similarly, when ozone precursors such as nitrogen oxides (NOx) and volatile organic compounds (VOCs) are emitted from mobile sources and stationary sources located in the South Coast Air Basin, they are also transported to the Coachella Valley. As a result, ozone levels in the Coachella Valley are primarily due to emissions in the South Coast Air Basin." (Press Release dated April 12, 2019, attached at **Exhibit 33**.)

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[56] https://www.travelmath.com/drive-distance/from/Los+Angeles,+CA/to/Coachella,+CA.

See also a 2016 SCAQMD White Paper entitled "VOC Controls" and attached hereto as **Exhibit 34,** which states at pages 2-3:

> "Certain air quality monitoring stations located in San Bernardino and Riverside counties exceed the current 75 ppb federal ozone standard over 60 days per year (FIGURE 2). Higher local ozone concentrations in these regions can be attributed to the significant upwind O3, NOx, and VOC precursor emissions transported by the daily sea-breeze in the summer, local emissions, and the timing of the daily emissions and peak sunlight intensity."

The DEIR briefly states that the Project's construction-related NOx emissions would exceed the regional significance thresholds set up by the AQMD, but does not explain what the regional thresholds are obviously intended to reflect: that the Project would contribute to ozone formation and regional transport of both NOx and ozone across the Basin. By emphasizing the local air quality and only cursorily discussing the regional air pollution patterns, the DEIR trivializes the Project's impacts.[57]

The DEIR takes the position (DEIR, pp. IV.B-47) that because Project NOx emissions do not exceed SCAQMD's *localized* significance thresholds, "the Project and the Project with the East Site Hotel Option would not increase the frequency or severity of an existing violation or cause or contribute to new violations for these pollutants. As the Project would not exceed any of the State and federal standards, the Project would also not delay timely attainment of air quality standards or interim emission reductions specified in the AQMP." This conclusion is breathtakingly overbroad and misleading, and should be revised to make clear that it covers *only* localized pollutant impacts, and

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[57] We note that, in the discussion of local air quality at DEIR p. IV.B-27 and 28, Table IV.B-3 shows exceedances of the NAAQS for ozone, PM10 and PM2.5, all pollutant with serious health impacts (see DEIR at pp. IV.B-1-3, and 6-7). However, the DEIR categorizes these exceedances as "the CAAQS and NAAQS were not exceeded in the Project Site vicinity for most pollutants between 2016 and 2018, except for O3, PM10, and PM2.5." This is roughly equivalent to saying that one graduated in the upper 90% of one's class, or that the weather was sunny and fair both before and after the tornado; the statements may be technically accurate, but do not reflect the gravity of the data being characterized. The serious nature of these exceedances should have been emphasized and explained, given that the Project's construction could add to them.

not ozone impacts. As the DEIR recognizes (DEIR, p. IV.B-46), the localized significance thresholds are applicable only to NO2, CO, PM10, and PM2.5, *not* ozone formation or concentrations. A project can be consistent with the localized thresholds, have no significant local impacts, and still "delay timely attainment of air quality standards or interim emission reductions specified in the AQMP" if those standards are regional ones for ozone.

Further, the statement at DEIR p. IV.B-47 that compliance with the AQMP can be shown *even if the actual criteria pollutant emissions significance thresholds set by SCAQMD* are exceeded by the project, if the project includes the control strategies (such as project location in a High Quality Transit Area, use of TDM measures, use of cleaner diesel trucks) that are called for in the AQMP, is incorrect and lacks legal authority. The DEIR asserts that projects or activities "consistent with the applicable growth projections and control strategies used in the development of the AQMP would not jeopardize attainment of the air quality levels identified in the AQMP even if their emissions exceed the SCAQMD's thresholds of significance." However, as shown above, the AQMP itself does not show attainment of the federal ozone standard by the deadline. Instead, what it shows is a contingent demonstration of attainment that could succeed *only* if the federal government adopts more stringent control standards for sources that only the federal government has legal authority to control, or provides significant new incentive funding; neither is shown as likely to occur in the foreseeable future. Even if the Project complies with all applicable control regulations in the AQMP, and would not exceed the growth planned for in the AQMP, its emissions could still cause a cumulatively significant contribution to violating the ozone standard. The DEIR pushes the legal effect of the localized significance thresholds beyond their limit. (<u>See also</u> p. IV.B-49.)

In short, the DEIR has not shown the Project's construction emissions of NOx to be consistent with the AQMP, or otherwise below the level of significance.

D. <u>Mitigation Measure AQ-MM-1 is Not Shown to be Enforceable.</u>

The DEIR states that emissions of NOx during construction will exceed the SCAQMD regional significance threshold for NOx, and concedes that mitigation is required. (DEIR, p. IV.B-53.) It also claims that, with application of Mitigation Measures AQ-MM-1 and AQ-MM-2, the Project's NOx emissions will be below the SCAQMD regional threshold for NOx. However, this assertion presumably rests on the

assumption that AQ-MM-1 will be carried out in full.[58] But another part of the DEIR contradicts and appears to belie that assumption.

In pertinent part, AQ-MM-1 reads:

> "Construction equipment, such as tower cranes, shall utilize electricity from power poles or alternative fuels (i.e., non-diesel) rather than diesel power generators and/or gasoline power generators. Pole power shall be made available for use for electric tools, equipment lighting, etc. If stationary construction equipment, such as diesel- or gasoline-powered generators, must be operated continuously, such equipment shall be operated at least 100 feet from sensitive uses (e.g., residences, schools, child care centers, hospitals, parks, or similar uses), whenever possible."

Thus, AQ-MM-1 states that tower cranes shall use electricity from power poles or shall use non-diesel fuels. However, the DEIR's Energy Conservation and Infrastructure section states:

> "On a *limited and incidental basis*, electricity may be used for small equipment, such as lighting, electronic devices, and other *minor construction activities* necessitating electrical power; however, it is speculative to quantify these *minor uses*, and such equipment may already be in use under existing conditions (i.e., computer laptops and mobile phones already owned and in use by contractors). Furthermore, these sources would generally be negligible compared to the clearly new electricity usage associated with the supply and conveyance of water for construction dust control, which is quantified in this analysis." (DEIR p. IV.O-16, emphasis added.)

The DEIR here clearly calls the use of electric power at the Site "minor," used only on a "limited and incidental basis," and does not list tower cranes as one of those

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[58] Mitigation is required by CEQA to be fully enforceable, and to be carried out. Guidelines § 15126.4(a)(2); Lincoln Place Tenants Assn. v. City of Los Angeles (2005) 130 Cal.App.4th 1491, 1508.

expected uses for electricity. The Energy Conservation and Infrastructure section also states:

> "*Construction equipment would primarily be diesel-fueled* (with the exception of construction worker commute vehicles, which would primarily be gasoline-fueled). For purposes of this assessment, it is conservatively assumed that *heavy-duty construction equipment* and haul trucks *would be diesel-fueled*. This represents a worst-case scenario to cover maximum potential energy use during construction." (Id.; emphasis added.) (DEIR, p. IV.O-17.)

These statements are irreconcilable with the statement in the Air Quality section that tower cranes will be powered electrically. The assertions in both DEIR sections cannot be accurate. If the Energy Conservation and Infrastructure section is the one that is accurate, and diesel power will be used for "heavy-duty construction equipment" in general, presumably including tower cranes, then the calculation of NOx emissions from construction equipment in the Air Quality section of the DEIR is not correct. Instead, the Project's construction emissions of NOx must be higher – perhaps much higher – than the DEIR reports.

Even considering the Energy Conservation and Infrastructure section's caveat that it is using a worst-case scenario by assuming all heavy-duty construction equipment to be diesel-fueled,[59] NOx emissions must be higher than the Air Quality section reports if the use of electrically-fueled construction equipment is only "minor," as the Energy Conservation and Infrastructure section reports, rather than being used to power such major pieces of construction equipment as tower cranes at a Site that proposes to build Project that will have towers of 36 and 47 stories apiece. (DEIR, p. II.14.)

Accordingly, the actual amount of construction equipment that is going to be powered by electricity – and the amount that is not – must be made clear, and the equipment's contribution to the total maximum day NOx emissions from construction should be disclosed fully, with revised total daily NOx emissions compared to the SCAQMD significance threshold for NOx from construction. This internal contradiction

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[59] Appendix E identifies jackhammers as being powered by a generator, putting the notation in parentheses by the equipment's name (Appdx. E at p. 42 of pdf [West Site], p. 43 of pdf [East Site]); other construction equipment is not so identified.

in the DEIR is further proof that the DEIR has not proven its assertion that the Project's construction, as mitigated, will have no significant impacts on regional air pollution, including the formation of ozone, for which the Basin is in extreme nonattainment. A recirculated DEIR must either supply the proof, or supply a corrected assessment of NOx emissions and provide full mitigation for any exceedance of the SCAQMD regional threshold. (Pub. Res. Code §§ 21002, 21081(a).)

X. THE DEIR'S GREENHOUSE GAS ANALYSIS VIOLATES CEQA.

In preparing the Greenhouse Gas section and reports for the DEIR, the City has failed to proceed in accordance with the requirements of law. See, e.g., Pub. Res. Code §§ 21002, 21002.1, and 21081(a), Guidelines §§ 15064.4, 15126.4(a)(1)(B) and (a)(2), and 15126.4 (a)(2) and (c)(3); and Health and Safety Code § 38562(a)(1) and (a)(2).

Among other violations, the City has (1) adopted an illusory threshold of significance that masks the obvious significant GHG emissions of the Project, (2) falsely asserted that GHG emissions must be based upon a 30-year useful life when the Project is clearly intended to operate well beyond this time, and (3) proposed illusory offsets in mitigation measures that fail to meet the legal requirement of being real, permanent, quantifiable, verifiable and legally enforceable.

It is important to note at the outset that the DEIR makes clear that the Project's greenhouse gas ("GHG") emissions would be high – very high. The construction emissions, calculated using the overlapping construction scenario, are listed by the DEIR in Table IV.E-6 shows construction GHG emissions as 13,476 MTCO2e. Table IV.E-7 calculates the 2025 GHG emissions for the overlapping construction scenario (with Hotel) as 8,339 MTCO2e per year of Project operation, and calculates the 2027 GHG emissions for the sequential build-out scenario as 7,867 MTCO2e per year of Project operation.

The operational GHG estimates include amortization of construction emissions over the assumed 30-year life of the Project. Assuming that 30-year life (which we contest, infra), the 30-year total GHG emissions for the two scenarios are 250,170 MTCO2e over 30 years, and 236,010 MTCO2e over 30 years, respectively. These are substantial figures, especially for a project that claims full consistency with all applicable local, regional, and state plans to reduce GHG emissions. Further, the DEIR states that

these emissions "would conservatively be considered entirely net new." (DEIR, p. IV.E-24.)

Yet, the DEIR finds these emissions to be not significant. We contest this finding on grounds that an unjustified threshold of significance is used, a false and inaccurate baseline is employed, and the Project's assumed life is impermissibly presumed to be short, as set out below.

A. The DEIR Uses an Inapplicable and Improperly Supported Threshold of Significance

Lead agencies are given several options in choosing the threshold by which they will determine the significance or insignificance of a Project's environmental effects, in light of the fact that the same impact may be significant in some settings but not in others.[60] At a minimum, a threshold requires support by substantial evidence. (Guidelines § 15064(b).)) The CEQA Guidelines encourage each public agency to "develop and publish thresholds that the agency uses in the determination of the significance of environmental effects." (Guidelines § 15064.7.) The City of Los Angeles has not developed or adopted a threshold for the significance of GHG emissions, and therefore has no numeric or other established threshold by which to evaluate the Project's GHG emissions. (DEIR, p. IV.B-28.) Nor has the City adopted a climate action plan specifically setting GHG emissions reduction targets that can be applied to specific projects. Guidelines Section 15183.5 sets out the elements such a climate action plan should have:

> (1) Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

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[60] See No Oil, Inc. v. City of Los Angeles (1974) 13 Cal.3d 68, 83, fn. 16, quoting a federal opinion saying that "[significant] covers a spectrum ranging from 'not trivial' through 'appreciable' to 'important' and even 'momentous.'" This definition is aptly suited to setting a threshold for emissions of climate-forcing gases, since the level of emissions may seem small, but the cumulative consequences may be momentous.

(2) Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;

(3) Identify and analyze the greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;

(4) Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

(5) Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels;

(6) Be adopted in a public process following environmental review.

These requirements for a climate action plan include the setting, based on substantial evidence, of actual, numerical levels of GHG emissions that would not be significant, as well as a mechanism for tracking the plan's progress towards an overall GHG reduction goals. (See also, Cool California's Climate Action Resource Guide, which provides tools for the development of a Climate Action Plan. (https://coolcalifornia.arb.ca.gov/local-government/toolkit.) A notable example is the City of San Diego's Climate Action Plan, which set numerical GHG emissions reduction targets (CAP, p. 22; https://www.sandiego.gov/sites/default/files/final_july_2016_cap.pdf.), and has been the subject of monitoring to determine how well the plan is working (https://www.sandiego.gov/sites/default/files/2019_cap_digital_version.pdf.) (See **Exhibits 35-37**.)

The City of Los Angeles has no such plan, and therefore the DEIR cannot legally rely on a City climate action plan pursuant to CEQA Guidelines Section 15064.4, subd. (b)(3).

Instead, the DEIR argues that:

> "[I]n the absence of any adopted quantitative threshold, the significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) [*sic*, perhaps 15064.4(b)(3) is meant] by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions, including CARB's 2017 Climate Change Scoping Plan, SCAG's 2016-2040 RTP/SCS, L.A.'s Green New Deal (Sustainable City Plan 2019), and the Los Angeles Green Building Code. . . . This evaluation of consistency with such plans is the *sole* basis for determining the significance of the Project's GHG-related impacts on the environment." (DEIR, p. IV.-30-31, emphasis added.)

Later, the DEIR claims:

> "[C]ompliance with a GHG emissions reduction plan renders a less-than-significant impact. The analyses below demonstrate that the Project is consistent with the applicable GHG emission reduction plans and policies included within the state's 2017 Climate Change Scoping Plan, the SCAG 2016-2040 RTP/SCS, the City of L.A.'s Green New Deal (Sustainable City Plan 2019), and Los Angeles Green Building Code. As shown herein, the Project would be consistent with the applicable GHG reduction plans and policies." (DEIR, p. IV.E-43.)

Putting these two assertions together, the DEIR argues that mere consistency or compliance with applicable "plans and policies" of the named plans, without more, makes the Project's GHG impacts insignificant, even though it will cause the emission of up to an additional quarter of a million metric tonnes of climate-forcing gases into the atmosphere and, perhaps more importantly, even though most of these plans do not claim to reduce GHG emissions to any set amount, or to meet all of the GHG reduction requirements established by California statutes and Executive Orders. The City has failed to establish a lawful standard of significance against which it can measure the impact of the Project's GHG emissions.

First, CEQA Guidelines Section 151064.4, subd.(b) specifies that the extent to which a project complies with adopted plans to reduce GHG emissions is only one of several "factors, among others [to be considered] when determining the significance of impacts from greenhouse gases on the environment"[61] and, by implication, not the "sole" factor the DEIR claims it is.

Second, many provisions of the Los Angeles City Building Code and the Green LA Plan are mandatory. As the DEIR states, "Since the Project is subject to the Los Angeles Green Building Code, Project Design Features reflect the *minimum* requirements." (DEIR, p. IV.E-39, emphasis added.) The Project is not reducing the level of GHGs it would otherwise emit by complying with mandatory code provisions; it has no choice but to include the features the Building Code requires. These limitations on GHG emissions are already part of the regulatory baseline. Further, the green building codes by themselves are not designed to achieve zero emissions, meaning that compliance with them will not produce zero emissions; insignificance is not automatic or guaranteed. If compliance with these codes actually reduced the Project's GHG emissions to zero, or to an unquestionably de minimis amount, then a conclusion of no significant impact could be supportable. Here, that is not the case. The Project would emit GHG emissions in the hundreds of thousands of tons, certainly not a de minimis amount.

Third, the green building codes do not have GHG reduction as their primary goal, and do not even purport to achieve specific GHG reductions. Reliance on compliance with these codes does not show actual progress towards any state GHG reduction goal.

Fourth, this so-called threshold allows the Project to rely on provisions in the named plans that are imposed upon, and carried out by, other entities than the Project. They do not reflect any action or choice by the applicant to reduce GHG emissions; the Project neither aids them nor can it stop them. They are, in essence, Project-neutral. In this category are the state's vehicle emissions standards, its Renewable Portfolio

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[61] Other factors listed by Guidelines § 15064.4(b) : (1) any increase in GHG emissions the project will cause over existing emissions (here, that increase is 100% of the Project's emissions, or between 230,000 and 250,000 or so metric tonnes total GHG emissions, a staggering increase); and (2) whether the project emissions exceed a level of significance the agency has established (here, the City has not established a threshold upon which it could rely).

requirements for generation of electricity, the Low Carbon Fuel Standard, and other state requirements. The Project does not have the option to *not* be consistent with these measures, and they should not be counted as active reduction by the Project of its GHG emissions. The DEIR correctly describes them as part of the Regulatory Framework. (DEIR, p. IV.E-3.) They are part of the regulatory baseline for the Project, not Project features. Again, if these statewide measures, in concert with compliance with mandatory building codes, resulted in a Project that emitted zero GHGs or an unquestionably de minimis amount, then there would not be a significant impact, and the matter would be closed. But that is not the case here.

Fifth, the SCAG Regional Transportation Plan/Sustainable Communities Strategy ("RTP/SCS") does not set GHG reduction targets that would achieve the statewide reductions called for in AB 32. The RTP/SCS aims, if met, would be only a limited, partial step towards meeting the state GHG reduction goals. The RTP/SCS' modest goals are to reduce per capita vehicle miles traveled (VMT) by passenger cars and light-duty trucks by limited amounts, namely 8 percent by 2020, 18 percent by 2035, and 21 percent by 2040 compared to the 2005 levels. The SCAG plan does not even aim at any reductions past that point, regardless of whether overall climate change goals have or have not been met. (DEIR, p. IV.E-19.) The 2050 goals in Executive Order S-03-05, set out at DEIR, p. IV.E-9, are largely ignored.

SCAG itself recognized the limits of its plan. In the Appendix to the 2016-2040 RTP/SCS, SCAG stated:

> "Though ARB has not adjusted SCAG's regional targets since the 2012 RTP/SCS, SCAG anticipates the region's targets may change, considering Governor Brown's recent Executive Order (B-30-15) that establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030. Because the transportation sector is the largest contributor to California's greenhouse gas emissions (more than 36 percent), SCAG anticipates updated and more stringent regional greenhouse gas emissions goals are forthcoming." (**Exhibit 38** [RTP/SCS Appendix at p. 59].)

We note that Executive Order B-30-15's target of a 40% reduction in GHG emissions over 1990 levels was enacted into law by SB 32, and is legally binding. That means that mere consistency with the GHG emissions targets in the SCAG plan cannot be

relied on to meet state GHG reduction goals, and consistency with the RTP/SCS Plan does not constitute substantial evidence of no significant impact on GHG emissions by the Project.

The DEIR attempts to cobble together compliance or consistency with several plans, and claim that whatever level of GHG emissions from the Project result from compliance/consistency with these plans is, per se, not significant, *regardless of how high it is*. This makes no sense as the use of compliance with individual plan components provides no objective emission standard against which the Project's substantial GHG emissions may be measured. CEQA Guidelines Section 15064.4, sub.(b)(3) applies the substantial evidence test to any threshold chosen that is based on consistency with plans that are adopted to reduce climate forcing greenhouse emissions. That test requires that substantial evidence must exist in the record that supports the City's "conclusion that the project's incremental contribution is not cumulatively considerable." The DEIR fails to make any showing that the Project's incremental contribution is not cumulatively considerable just because it will comply with applicable laws and regulations either actively (in the case of building codes) or passively (in the case of state vehicle and electricity standards). In fact, this so-called threshold of significance would find any number of differently configured Projects, with any number of different GHG emissions total, to not cause significant GHG emissions levels, regardless of how high such emissions totals might run. This standard lacks sufficient specificity to actually advise the decision makers or the public as to what impacts on state GHG levels will actually be. The DEIR fails as a matter of law. Any attempt to "fix" it would need to be made in a recirculated DEIR.

B. The DEIR's Comparison of the Project with Its GHG-Reducing Features to a Fictional Project Without Such Features, is Invalid.

The DEIR also attempts to show that the Project's GHG emissions are not significant by concocting a comparison between the Project as proposed, with all its GHG-reducing Project Features, and a Project without such GHG-reducing Features. The DEIR states that "since this comparison is intended to mirror the concepts used in CARB's Climate Change Scoping Plan, the GHG emissions for the Project without implementation of GHG reduction characteristics, features, and measures is evaluated based on the specific and defined circumstances that CARB relied on when it projected the State's GHG emissions in the absence of GHG reduction measures in the First Update to the Climate Change Scoping Plan." (DEIR, p. IV.E-41.)

To create this comparison, the DEIR posits a project that could not now exist, using the "specific and defined characteristics" CARB used to develop the Scoping Plan:

> "The specific and defined circumstances used by CARB include conditions that existed during the 2009 to 2011 period, which include the vehicle fleet regulations that existed during the 2009 to 2011 period and the 2008 Title 24 Building Energy Efficiency Standards. The specific Project Site characteristics and Project Design Features such as GHG-PDF-1 (Green Building Features – described below) and WS-PDF-1 (Water Conservation Features, refer to Section IV.N.2, Water Supply, of this Draft EIR) are not included as they encompass GHG reduction strategies and features that would be consistent with State, regional, and local GHG reduction plans and policies or would go above and beyond regulatory requirements." (Id.)

In short, the DEIR goes through a time portal to compare the current Project as proposed to a completely fictional project that could not possibly exist, one existing in a California without the vehicle emissions standards now in effect, one without the Renewable Portfolio for energy or Low Carbon Fuel standards as they now exist, and without local or regional GHG-reducing measures like the LA Green New Deal. Unsurprisingly, the proposed Project would emit considerably less GHGs than the fictional time-portal plan. (DEIR, Table IV.E-7, at p. IV.E-72 to 73.)

We note first that this time-portal project does *not* include the application of the zoning, density, and height limitations that would have applied to the site at this prior time, and whose provisions would have precluded building the Project's two towers at their proposed skyscraping height.[62] A comparison that included the City's zoning and General Plan as they applied to the site at the prior time the straw man Project posits might have produced a project that had far lower levels of GHG emissions than the

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[62] The Project applicant has proposed that these restrictions be overridden with a zoning change and other land use entitlements to substantially increase the density and height of the project. (DEIR, p. II-10 to 11.) The value of these changes transfers millions of dollars of value to the developer, yet the City requires no meaningful evaluation or mitigation of the huge GHG emissions from such densification.

DEIR's straw man project, perhaps even lower than those expected from the Project as actually proposed.

However, the comparison is invalid and irrelevant. While CARB did develop the Scoping Plan in the manner the DEIR describes, CARB did so for a specific reason that does not apply to this Project. CARB was under a statutory mandate to develop a plan that would reduce California's GHG emissions to the level they were in 1990. (Health and Saf. Code § 38550.) To do so, CARB was forced to go through the time portal and reconstruct the state's GHG levels as they were in 1990, then project what GHG emissions would be in 2020, and, finally, develop a plan that would limit the 2020 emissions to the 1990 levels (namely, the Scoping Plan). In CARB's case, the re-creation of a past situation was essential to comply with a state statute; the degree of future emissions reductions that would be needed to meet AB 32's targets could only be calculated by re-creating the past.

CARB's process in responding to a statutory mandate cannot reasonably be compared to the DEIR's process, which sets up a straw man project, then compared its GHG emissions to those of the GHG emissions posited by the DEIR for the Project as proposed.[63] CARB's purpose was to comply with the law, while the Project applicant's purpose here is only to create a Project that will maximize its profits. The comparison is not just apples to oranges, it is apples to prehistoric cycads. It is clearly a strawman argument that will in every case "prove" that the Project will emit less than a theoretical project from the past without current regulations. It's like saying the new airplane with its ban of cigarette smoking will be less harmful to human health than a TWA airliner with a twelve-row smoking section in the back of the plane as they once existed in 1970. Of course the new plane with such current regulations will be better for human health than that fictional plane from the past, just as the Project with its features will emit less GHGs than the straw-man Project without them. The comparison is not valid, and does not constitute substantial evidence that the Project's GHG emissions would not be significant. Thus, the entire use of the fictional straw man project from the past to "evaluate" emissions is a failure to proceed in accordance with law.

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[63] We say "posited" because the Project's GHG emissions are significantly under-estimated, as discussed below.

C. The Project's GHG Emissions Have Been Underestimated Through the Assumption of a 30-Year Project Lifespan That is Not Mandated by Law or Supported by Facts.

The DEIR claims that the Project will have only a 30-year lifespan for purposes of GHG impacts, and that the Project need not analyze or mitigate GHG impacts past that time. The claim is based on a 2008 *draft* guidance document[64] from the SCAQMD that *recommended* assuming a 30-year project life for industrial projects subject to SCAQMD permitting, *for purposes of amortizing GHG emissions* over a longer time than the first year of a project's life. (DEIR, p. IV.E-34.) The DEIR refers to this 30-year life span as SCAQMD "guidance" (id.), but admits elsewhere in the DEIR that the provision was not actually adopted by the SCAQMD as applicable to residential/commercial projects, only to industrial projects directly subject to SCAQMD permitting. (DEIR, p. IV.E-18, footnote 47.)

The Draft SCAQMD Guidance document does not support, much less mandate, the 30-year lifespan for the residential/commercial Project that is assumed throughout the DEIR (and whose mixed-use nature is relied upon for considerable GHG reductions, through VMT reductions. [DEIR, pp. IV.E-36, 56, 57, and 58]. . Because the assumption of a 30-year life for the Project greatly limits its expected GHG emissions, these comments will show the inapplicability to the Project of the Draft SCAQMD Guidance.

1. SCAQMD Did Not Adopt Guidance That Requires Use of a 30-Year Project Life.

The document on which the DEIR relies was attached as Exhibit E to a staff report to the SCAQMD Board (hereafter "Board") discussing the proposed Draft SCAQMD Guidance. The Board agenda for the December 5, 2008 Board meeting included an item discussing the possible setting of GHG significance thresholds for residential/commercial projects under the heading "GHG Significance Threshold Components Deferred to the Future," stating:

> "*Residential/Commercial Sectors GHG Significance Threshold* – To achieve the same policy objective of capturing 90 percent of GHG

[64] Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. (Hereafter "Draft SCAQMD Guidance.")

> emissions from new development projects in the residential/commercial sectors and implement a "fair share" approach to reducing emission increases from each sector, staff discussed with the working group a proposal combining performance standards and screening thresholds. The performance standards primarily focus on energy efficiency measures beyond Title 24 and a screening level of 3,000 MTCO2eq/yr based on the relative GHG emissions contribution between residential/commercial sectors and stationary source (industrial) sectors. *Additional analysis is needed to further define the performance standards and to coordinate with CARB staff's interim GHG proposal. Staff, therefore, recommends bringing this item back to the Board for discussion and possible action in March 2009 if the CARB board does not take its final action by February 2009*." (Emphasis added.)

We point out that the SCAQMD Board did <u>not</u> adopt any significance threshold for GHGs emitted by residential or commercial projects at this December 5, 2008 Board meeting, or at any other time that the DEIR identifies or we know of.

The DEIR seems to rely upon the Board Letter, a kind of staff report, that was provided to the Board for the December 5, 2008 Board meeting. This Board Letter (hereafter "Board Letter") is included in the References for the Air Quality section of the DEIR, and is entitled "Final Localized Significance Threshold Methodology." In the Board Letter, the SCAQMD staff presented the proposal that the Board considered, and deferred, on December 5, 2008. At page 10 of the Board letter, staff states clearly that it is "*not* recommending specific GHG significance thresholds for residential/commercial sectors at this time." (Emphasis added.)

The portion of the Board letter upon which the DEIR apparently is relying is at page 5 of the document, which states:

> "Emission Calculations and Significance Threshold Proposal – For the purposes of determining whether or not GHG emissions from *affected projects* are significant, project emissions will include direct, indirect, and, to the extent information is available, life cycle emissions during construction and operation. *Construction emissions*

> *will be amortized over the life of the project, defined as 30 years*, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier." (Emphasis added.)

The Board letter makes clear that its recommendations, including the recommendation for amortizing project GHG emissions, is limited to "affected projects," which are defined in the preceding paragraph, also on page 5, which states:

> "Applicability – At this time, staff is recommending consideration of an interim GHG significance threshold that would apply to *stationary source/industrial projects where the AQMD is the lead agency under CEQA*. The types of projects that the staff proposal would apply to include: AQMD rules, rule amendments, and plans, e.g., Air Quality Management Plans. In addition, the AQMD may be the lead agency under CEQA for projects that require discretion approval, i.e., projects that require discretionary air quality permits from the AQMD." (Emphasis added.)

The Draft SCAQMD Guidance explicitly states that it applies only to projects where the SCAQMD is the lead agency under CEQA, principally industrial projects. (See DEIR, p. IV.E-18, footnote 47, where the DEIR admits that all the SCAQMD adopted was "a GHG significance threshold of 10,000 MTCO2e per year for industrial stationary source projects for which the SCAQMD is the lead agency.") The City, not the SCAQMD, is the lead agency here; the SCAQMD's only direct role is that the Project's emergency generators require a permit from the SCAQMD to operate, due to their diesel emissions. (DEIR, p. IV.B-42.) Therefore, the policy, by its own terms, does not apply to the Project.

Further, Exhibit E to the Board Letter, which is not in the DEIR's References but is attached hereto as **Exhibit 39**, expressly *declines* to recommend applicability of the 30-year lifespan of projects for GHG calculation purposes to residential or commercial projects. Table 3-4, at page 3-18 of Exhibit E to the Board letter has a column to the far right labeled "Residential/Commercial Sector Projects." This column has under it a column labeled "AQMD (Not Recommended at this Time)." This second column has an entry that specifically lists "construction amortization over 30 years & added to operational GHG emissions." Thus, the staff did *not* recommend the 30-year lifespan for

residential/commercial projects, and the Board did not adopt such a recommendation, let alone guidance.

It is simply not the case, as a matter of law, that the SCAQMD requires, or even officially recommends, that the Project's lifespan be limited to 30 years. Even if it wished to, the SCAQMD does not have land use project approval powers, and could not impose or enforce a 30-year limit to the Project's life. The DEIR neither proves that the Project will not emit GHGs after 30 years, nor accounts in any way for such emissions. That the Project will continue to cause GHG emissions after 30 years of operation is reasonably foreseeable, and those reasonably foreseeable emissions – and their environmental impact – must be discussed, evaluated, and mitigated as part of a recirculated DEIR. (Pub. Res. Code §§ 21002, 21081(a); Guidelines §15064 (d)(1).)

Accordingly, the City's false characterization of the 2008 Draft SCAQMD Guidance as somehow requiring or limiting the useful life of the Project to only 30 years is a failure to proceed in accordance with law by deliberately refusing to calculate, disclose or mitigate the true GHG emissions of the Project.

2. Substantial Evidence Does Not Support the Use of a 30-Year Project Life.

Nor is there any substantial evidence that the Project's life will be limited to 30 years. The DEIR makes no showing that the Project will cease to exist or to function, or that it will cease to cause GHG emissions through use of electricity, e.g., for lights, heat, and cooling, after 30 years of operation. It makes no showing that Project residents will cease to drive to and from their homes in the Project, or that the Project's retail and restaurant uses will cease to function.

While the DEIR lacks any facts supporting the assumption of a 30-year Project life limit, extrinsic facts not presented in the DEIR contradict any assumption of a 30-year life limit for what is primarily a housing project. The Housing Element Update of the Los Angeles City General Plan states:

> "The median dwelling unit in Los Angeles was built in 1960, more than 50 years ago. More than half of the City's housing units were constructed prior to 1950 (51%), while almost 90% were built prior to 1990. The percentage of housing built in the 1990s and 2000s is

the lowest of any decades listed in Table 1.12. This table identifies the age of the City's housing stock by decade. Rental housing tends to be a bit newer than owner-occupied housing, with a median year-built of 1964 versus 1956."

TABLE 1.12
Age of Housing Stock, by Tenure

Year Built	Percent of Owner-Occ.	Percent of Renter Occ.
Built 2000 to 2009	4.9%	6.4%
Built 1990 to 1999	4%	6.6%
Built 1980 to 1989	8.5%	11.3%
Built 1970 to 1979	10.3%	15.6%
Built 1960 to 1969	12.8%	16%
Built 1950 to 1959	24.6%	15.3%
Built 1940 to 1949	14%	9.5%
Built 1939 or earlier	21%	19.4%

Source: U.S. Census Bureau, 2010 ACS 1-year estimate: Tenure by Year Structure Built

(Page 1-40, Housing Element 2013-2021, Adopted Date: December 3, 2013 (CPC-2013-1318-GPA.)

More generally, of the approximately 12,942,000 houses in California statewide, the US Census Bureau reports that about 2,172,000 were built between 1970 and 1979 (making them between 40 and 50 years old). Yet, they are apparently still in service. The federal Department of Housing and Urban Development reported in 2014 that the average age of public housing was 43 years. (hud.gov/sites/documents/RADPROG_062414.PDF; **(Exhibit 40)**.) Given the applicant's representations about the quality of the Hollywood Center Project's design, materials, and construction (of course, assuming the buildings do not split open and collapse in an earthquake), we do not believe that it would be less durable than housing built 50 years ago, or that it would fall to pieces or into disuse at the end of 30 years.

Positing an arbitrarily short life for the Project, unsupported by facts, serves only to decrease the amount of GHG emissions it admits it will add to the atmosphere, thereby attempting to reduce the duty to mitigate the effects of those emissions. The City must drop this artificially short expectation for the Project's life, and assume a realistic lifespan for the Project.

The DEIR does not indicate that the Project will accept as a condition of approval that it will cease to operate after 30 years, nor has the City proposed to impose one. No practical or legally binding 30-year limitation on the Project's life exists, or will exist unless the City now chooses to impose one. Hence, the DEIR should calculate – insofar as is now possible – what the GHG emissions of the Project will be after 30 years and for as long as the Project is expected to remain in operation. These emissions must be publicly disclosed in a recirculated DEIR, and must be mitigated to the extent feasible. (Pub. Res. Code §§ 21002, 21081(a).) That the Project will continue to cause GHG emissions after 30 years of operation is obvious. That must be disclosed, evaluated, and mitigated via a recirculated DEIR.

The DEIR must be revised to reflect a realistic life span for this Project. All GHG emissions for the full physical, operational life of the Project must be identified, calculated, disclosed to the public, and (as set out below), mitigated as required by CEQA and by Public Resources Code Section 21159.28. Failure to do all of the above is a violation of CEQA as a matter of law.

D. The GHG Offsets Proposed by the Project Are Not Shown to Be Real, Permanent, Additional, and Enforceable.

The DEIR incorrectly concludes that because the Project is consistent with the various state, regional, and local plans to reduce GHG emissions, that the Project's emissions of between 250,170 MTCO2e over 30 years, and 236,010 MTCO2e over 30 years, depending on the construction scenario used, are not significant. (DEIR, page IV.E-82.) Based on that conclusion, the DEIR concludes that no mitigation is necessary.[65]

[65] As a corollary, the DEIR concludes that the Project would make no contribution to any cumulative impacts on climate change or any other impact of GHG emissions, and therefore no mitigation is required for cumulative impacts. This is wrong as a matter of law for the reasons set out in the remainder of this section of these comments.

We have shown that this conclusion is neither mandated by law nor supported by substantial evidence. Further, all the applicable requirements for GHG offsets, as set forth in Health and Safety Code Section 38562, subds. (a)(1) and (2), that GHG offsets be real, permanent, quantifiable, verifiable, enforceable, and additional (i.e., otherwise would not occur) shall apply. These requirements complement CEQA's requirements for all mitigation measures, per Guidelines Section 15126.4, subd. (a)(2), subd.(c)(3), and Lincoln Place Tenants Ass'n. v. City of Los Angeles (2007) 155 Cal.App.4th 425, 440. See also, Sacramento Old City Assn. v. City Council (1991) 229 Cal.App.3d 1011, 1027 (substantial evidence of mitigation measures' effectiveness and enforceability must be included in the record). GHG emissions offsets are required to reduce the Project's GHG emissions to net zero. The DEIR again fails as a matter of law.

E. The DEIR Uses the Wrong GHG Emissions Total When Determining Necessary Offsets.

The DEIR proposes to offset to "net zero" only those GHG emissions that constitute the increase in site GHG emissions, relative to the baseline annual GHG emissions, caused by the Project "for the estimated Project lifetime." (DEIR, p. IV.E-83.) We first point out that the DEIR identifies the baseline emissions for the Site at zero (DEIR, p. IV.E -24), meaning that *all* of the Project's GHG emissions must be offset by valid offsets in order to get to "net zero." The Project may not, for example, use the straw man project that lacks the Project Features set out in the DEIR as reducing GHG emissions, described above, as its baseline. Second, we note that because, as argued above, the Project's GHG emissions are significant under CEQA, the mitigation – here, offsets – must meet CEQA's standards for offsets, also as set forth above. Third, we point out that the DEIR impermissibly limits the need for offsets to the artificially-limited and invalid 30- year life of the Project posited by the DEIR. (DEIR, p. IV.E-84.) As argued above, this limitation is invalid. *All* GHG emissions for the *entire* expected physical, operational life of the Project must be offset.

F. The DEIR Impermissibly Relies on "Accredited" GHG Offset Registries.

The DEIR states that, for any GHG offsets it requires:

> "[T]he Applicant or its successor shall enter into one or more contracts to purchase carbon credits from a qualified GHG emissions

> broker (to be selected from an accredited registry), which contract, together with any previous contracts for the purchase of carbon credits, shall evidence the purchase of carbon credits in an amount sufficient to achieve a net zero increase in site GHG emissions." (Id.)

The DEIR also states that, for such carbon registry purchased offsets:

> "Priority should be given to those credits generated within the City of Los Angeles, and in decreasing preference, credits generated within the region, in-state, and out-of-state." (Id.)

The DEIR proposes to use "accredited registr[ies]" as the source of "qualified GHG emissions broker[s]," but does not define either term. This is crucial since, insofar as we are aware, no federal, state or local agency regulates or "accredits" carbon offset registries in the private market, nor does the DEIR show that one does. CARB does accredit carbon registries to develop potential carbon offsets for regulated entities to propose for use solely in the state's Cap and Trade program (California Code of Regulations ["CCR"] title 17, § 95975), but CARB does not "accredit" any registry as to its dealings in the private market. The DEIR offers no description of how the private registries the Project would supposedly use are "accredited," but if it is relying on CARB's use of such registries in the state's Cap and Trade program without more, that reliance is misplaced, for several reasons.

First, the DEIR apparently would accept any GHG offsets identified by an "accredited" carbon offset registry. (DEIR, p. IV.E-84.) However, CARB itself does not simply accept an offset because it is developed and presented by one of the registries it uses. CARB accepts only proposed offsets that conform to CARB-approved Protocols (i.e., templates for developing techniques to reduce or permanently eliminate GHG emissions from such sources as industrial plants, dairies, or forest practices.) (CCR title 17, § 95987(a).) For regulations addressing Protocols, see, e.g., CCR, title 17, §§ 95971, 95972.) CARB's decades of air pollution control experience have gone into developing the over 400 pages of regulations governing the Cap and Trade program and its Protocols (CCR, title 17, §§ 95800-96022, plus appendices), and CARB keeps close watch on how registries do the bookkeeping on the offsets they develop for submission to CARB. (See, e.g., CCR, title 17, §§ 95975, 95976, 05980.) The DEIR describes no such vetting process for its proposed offsets, nor does it show that the City either would vet such

offsets, or that the City has the capacity and expertise to do so. It is not even clear that the City, let alone the public, would have the legal ability to enforce the contractual terms governing these offsets.

Second, CARB's regulations governing offsets are extensive and demanding. They require GHG offsets (also referred to as "carbon offsets" or "carbon credits") to represent "reductions [that] are 'additional'" to those required by law (CCR title 17, § 95973), and make them subject to strict, CARB-enforced monitoring, reporting, and record retention requirements. (CCR title 17, § 95976.) The offsets must be "verifiable," which means that the verification report complies with CARB's own Compliance Offset Protocols. (CCR title 17, § 95802, subd. (a).) They must also be "permanent," which means that the GHG reductions must either be irreversible or must last for 100 years (id.), not the paltry and unjustified 30 years to which the DEIR would limit the Project's offsets. (Id.) Crucially, offset credits in the Cap and Trade program may only be used to offset a *maximum of only 8%* of a regulated business' emissions that are subject to the program (CCR title 17, § 95854), and they must all occur within the United States or its Territories (CCR, title 17, § 95972(c)), whereas the DEIR would explicitly allow use of offsets "within the region, in-state, and out-of-state" (DEIR, p. IV.E-84), without specifying whether out-of-country offsets would be acceptable. The DEIR does not describe any such regulations to which the Project's offsets would be subject that are even remotely comparable to the CARB, regulations, sets out no limit on the amount of Project GHG emissions that could be offset, and does not demonstrate that the City is prepared to and capable of exercising adequate oversight and enforcement of these offsets.

A San Diego Superior Court evaluated a set of GHG offsets proposed by the County of San Diego that also proposed use of supposedly accredited registries, and found their use invalid, comparing the County's proposed offset requirements, and particularly their enforceability, to CARB's. Attached to these comments is a copy of the trial court's decision, the Honorable Timothy Taylor, as **Exhibit 41**. We incorporate the full opinion by reference herein.

The DEIR's discussion of offsets is shockingly short, and almost farcical. It does not and cannot support a determination that the Project's GHG emissions, even if they were calculated correctly, would be fully offset to net zero, or to any amount that would be less than significant, or that the offsets would comply with CEQA's requirement that offsets be real, permanent, additional, and enforceable. The City must revise and

recirculate the DEIR to contain such a showing, appropriately supported both in law and in fact.

Accordingly, the City's has failed to proceed as required by law because it relies upon a mitigation strategy that has not been shown to conform to CEQA's legal requirements for offsets, and also because it is not shown to be factually supported. Preparation of the proper GHG emissions analysis, disclosure of full GHG emissions of the Project over its realistic useful life, and non-illusory and legally enforceable mitigation is required in a recirculated DEIR before the City may proceed.

XI. THE DEIR'S SOILS/GEOLOGY/SEISMIC ANALYSES VIOLATE CEQA.

As discussed above, the release of a new, May 2020 United States Geological Survey ("USGS") official Open File Report constitutes significant new information about the existence and location of multiple active Hollywood Earthquake Fault traces through and beneath the Project site from the east (one probably beneath the very center of the proposed 46-story East Tower), further requiring recirculation of the April 16, 2020 DEIR. (**Exhibit 6**.)

This recent data indicates that potentially four faults/fault splays enter the Project site from the east at Argyle Street (**Exhibit 6** [USGS, 2020, Figures 4 and 22 through 25]; Wilson Geosciences Report, **Exhibit 42** [Figure 3]), with the southernmost fault very closely coincident with the southern fault in the CGS's FER-253 Supplement. All of these faults pass through or adjacent to the proposed 35- and 46-story skyscrapers or the senior buildings.

We incorporate by reference in full the Wilson Geosciences report and figures attached hereto at **Exhibit 42**, which discusses many of the ways in which the DEIR's seismic studies and conclusions are improper, and incompletely presented.

To conclude that there is no active fault running through the site, the DEIR's geologic and seismic discussions fail to acknowledge multiple studies and data showing that the Hollywood Fault as a continuous unit is active. (**Exhibit 42** [Wilson report].) Moreover, when one section of the fault is active, all sections are considered active. The DEIR's attempt to "sanitize" the Millennium property and effectively cut it off from the rest of the Hollywood Earthquake Fault and amazingly find that the fault just through the Millennium site stops being active, is a sham. It also misses a larger point: the fault(s)

crossing the project site are part of an indisputably active Hollywood Earthquake fault *system*.

In short, inclusion of these studies (not currently contained in the DEIR) in a recirculated DEIR is essential, especially when dealing with life and death issues and potentially catastrophic impacts to the environment.

With towers built over the fault – and, more likely, multiple fault splays – Millennium asks the City to put at risk not only the lives of residents and users of the onsite Project, but the lives and property of persons in immediately adjoining buildings and streets. Public and public agency comment during the original matter expressed tremendous concern about catastrophic collapse of the towers if portions of the site suddenly moved, shearing the buildings' supporting columns, foundations and structures. The collapsed buildings could block streets for months or longer, creating severe traffic impacts and impacts to public services and emergency response times. Air quality and health risk impacts to the surrounding environment would also be severe.

As our Supreme Court has repeatedly held:

> "Besides informing the agency decision makers themselves, the EIR is intended 'to demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its actions.'" Save Tara v. City of West Hollywood (2008) 45 Cal.4th 116, 136, citing No Oil, Inc. v. City of Los Angeles (1974) 13 Cal.3d 68, 86, accord, Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 392.

We are an extremely apprehensive citizenry, and the current DEIR, and its omissions of critical information, do not allay that apprehension. Only a correct and complete DEIR, with a scaled down project off of the faults, might.

We again note that during the State's administrative proceedings prior to the 2014 Alquist-Priolo Map adoption, Millennium's attorneys insisted that its consultant, Group Delta, had evidence showing no active fault on or through the East Site, and promised to submit such evidence to the State. However, as noted by the State in its FER-253 report, no such evidence was produced by Millennium as part of the administrative Alquist-

Priolo process.[66] The State's findings about the **active** Hollywood Earthquake Fault running through the Project site are **final**, and cannot now be collaterally challenged by this DEIR or process. The City and Millennium are estopped from so doing.

The DEIR's denial of the existence of an active earthquake fault through the site means that the entire classification of the environment was wrong, and thus the DEIR lacks a proper baseline, and derivatively, fails to undertake an accurate assessment of the Project's impacts, mitigation measures, or project alternatives.

XII. THE DEIR'S PALEONTOLOGY / TRIBAL CULTURAL RESOURCES ANALYSIS VIOLATES CEQA.

See discussion at pp. 7-8 and fn. 3, supra. The City violated CEQA and AB 52 by not properly consulting with tribal representatives, and by making the process a *post hoc* rationalization for a decision already made, i.e., to disregard tribal participation and monitoring when trenching happened. Millennium's trenching was in what is known as high paleontologic sensitivity formations. (DEIR, p. IV.D-25.)

We also incorporate by reference the June 1, 2020 letter from the Gabrieleño Band of Mission Indians – Kizh Nation, and their attorney, Ms. Kara Grant.

XIII. THE DEIR'S TRAFFIC ANALYSIS AND ASSERTIONS VIOLATE CEQA.

We incorporate by reference the May 28, 2020 traffic and pedestrian safety analysis prepared by traffic expert Tom Brohard, attached at **Exhibit 43** hereto.

We also incorporate by reference the June 1, 2020 expert report by KOA, attached at **Exhibit 44** hereto.

We further incorporate by reference, and require good faith responses to, all of the previous Caltrans objection letters (**Exhibit 19**), as well as to the internal Caltrans memorandum criticizing the previous project, all of which criticisms remain valid, and

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[66] We note that the DEIR ignored many of the CGS's requests in the CGS's September 24, 2018 NOP comment letter (**Exhibit 45**), and thus the DEIR is further fatally deficient on this additional ground.

are expressly adopted by us herein, requiring responses to each issue raised. (**Exhibit 46**.)[67]

XIV. THE DEIR VIOLATES CEQA'S BASELINE AND NOISE ANALYSIS MANDATES.

CEQA requires a realistic baseline that will give the public and decision makers the most accurate picture practically possible of the Project's likely environmental impacts. The DEIR assumes the baseline Property conditions consist primarily of surface parking lots which are not sensitive to noise impacts.[68] As applied to the Project's construction noise analysis, however, the baseline conceals construction noise impacts with potentially disastrous impacts on the public.

The requested Development Agreement would allow the Applicant to construct the Project over 20 years, including a Sequential Construction Scenario in which one site is fully developed prior to the other.[69] The second phase of sequential construction would – *with absolute certainty* – occur within an environmental setting radically different from existing conditions and adjacent to numerous highly noise sensitive uses. The second phase of the Project would be developed immediately adjacent to ***a thousand dwelling units, over ten thousand square feet of retail/restaurant/bar area, a public garden, an outdoor theater and hundreds of vulnerable seniors***.[70] Yet, *none* of the DEIR's mitigation measures address how to mitigate the impacts of, for example, construction noise on seniors sitting in the ground level garden.

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67 Our invocation of these documents and the need for the City to respond to all objections and criticisms contained therein is not intended to suggest, and does not mean, that the City can avoid responding to all other objections contained in the administrative record from the original case, which we have re-filed in this matter. See fn. 2, ante, and p. 6, supra.

68 DEIR p. IV.I-14.

69 DEIR p. II-73.

70 This characterization assumes assuming the Applicant, a New York-based LLC, has not weaseled out of its promises of community benefits.

The DEIR's baseline, as applied to the Sequential Construction Scenario, is so untethered from reality that it lacks substantial evidence. After a portion of the Project has been issued a certificate of occupancy, its market and senior affordable units are occupied *by the public*, its commercial space is patronized *by the public* and its open space is relied on *by the public*. It becomes part of the background environment entitled to protection under CEQA. In defiance of CEQA's statutory purpose, the DEIR improperly applies existing conditions as the baseline to conceals environmental impacts of profound public concern. The second phase of sequential construction would render the Project's public open space utterly unusable, would at least inconvenience market rate tenants by limiting use of the Amenity Deck bars and alcohol cabinets, and would devastate vulnerable seniors who depend on outdoor access for physical and mental health, as well as the surrounding community.

The DEIR must be recirculated to address these issues fully and accurately, and must be required to incorporate mandatory mitigation measure to prohibit issuance of a certificate of occupancy for either tower until construction is substantially completed for both. This mitigation measure is technically feasible because the Project Description concedes that concurrent or overlapping development is viable and realistic, and it would altogether avoid significant environmental impacts of the Sequential Construction Scenario.

Furthermore, because of the DEIR's misleading baseline for construction noise impacts, it fails to disclose unique environmental impacts, such as rendering public open space unusable and disturbing vulnerable seniors, that were not even contemplated in the DEIR. The DEIR must be recirculated to allow informed public participation and decision-making.

XV. THE DEIR VIOLATES CEQA'S ALTERNATIVES MANDATES.

As our Supreme Court has repeatedly held, the "EIR is the heart of CEQA, and the mitigation and alternatives discussion forms the core of the EIR." In re Bay–Delta cases (2008) 43 Cal.4th 1143, 1162.

Here, the DEIR further fails because it did not consider a reasonable range of alternatives, as required by CEQA. In fact, not a single alternative considered a build-out scenario that would place habitable structures off of the California Geological Survey

Alquist-Priolo mapped earthquake fault that runs through the property. In our 2018 NOP comment letter, we requested exactly that:

> "Alternatives. The Draft EIR must include a reasonable range of alternatives that do **not** place habitable structures, including buildings for occupancy and parking structures (above ground or subterranean) over or across the officially-mapped fault zones, or within 50 feet thereof. Further, alternatives that are scaled down to reduce height, density and FAR must also be included and analyzed in the Draft EIR." (**Exhibit 7** [p. 6; emphasis in original].)

Yet the DEIR failed to do so, nor did it even attempt to justify this arrogant failure. Particularly because they are all illegal, but even from just a commonsense standpoint, the self-serving alternatives considered in the DEIR are, by definition, not a "reasonable range." The DEIR and the City have again violated CEQA.

Of course, this was eminently doable. Millennium principal Phil Aarons admitted so in a September 20, 2013 Wall Street Journal article, "*Fault Line Splits Hollywood*". "Even if a portion of the fault is found to cross the site, he [Aarons] said, the size of the nearly 4½-acre site allows him flexibility to build so the towers aren't on top of the fault". (**Exhibit 47**; https://www.wsj.com/articles/fault-line-splits-hollywood-1379715068.)

The City and the DEIR were required to include at least one alternative that would have done exactly that. The failure to do so is yet another failure to proceed in the manner required by law.

XVI. CONCLUSION.

The DEIR fails as a matter of law on multiple procedural and substantive grounds. At a minimum, it should be revised and recirculated before further consideration is given to approval of this outrageously impactful and dangerous Project. This should include presenting and fully addressing all of the new earthquake fault information from the May 2020 United States Geological Survey Guided Wave study and other sources. To do less would be to present an incomplete and inaccurate picture for the public and decision makers.

More appropriately the DEIR and Project should be rejected outright. Nothing that the DEIR proposes is legal given the active Hollywood Earthquake fault traversing the Project sites. The DEIR as presented is a nullity from its inception.

A different proposal – one that observes the legally required offsets from the fault lines and by force would be smaller in scale – should be the only project the City considers. In turn, we hope any such consideration would occur after the FBI investigation into City Hall's unfolding pay-to-play scandal has concluded. Thank you.

Very truly yours,

/s/ Robert P. Silverstein
ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
Encls.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 1

39 Cal.App.5th 1
Court of Appeal, Second
District, Division 3, California.

STOPTHEMILLENNIUMHOLLYWOOD.COM
et al., Plaintiffs and Appellants,
v.
CITY OF LOS ANGELES et al.,
Defendants and Appellants;
Millennium Hollywood LLC, Real
Party in Interest and Appellant.

B282319
|
Filed 07/31/2019

Synopsis

Background: Objectors brought action for peremptory writ of mandate, seeking to require city to set aside its approval of development project and certification of environmental impact report (EIR) for project under California Environmental Quality Act (CEQA). The Superior Court, Los Angeles County, No. BS144606, James C. Chalfant, J., entered judgment in favor of objectors in part and in favor of city in part. Developer and city appealed.

Holdings: The Court of Appeal, Jones, J., held that:

[1] project description in draft EIR was not accurate, stable, and finite, as required by CEQA, and

[2] this impaired public's ability to participate in CEQA process, requiring reversal.

Affirmed; request for judicial notice denied.

Procedural Posture(s): On Appeal; Petition for Writ of Mandate.

West Headnotes (11)

[1] **Environmental Law** Assessments and impact statements

In evaluating whether an agency has abused its discretion under California Environmental Quality Act (CEQA), a reviewing court must adjust its scrutiny depending on whether the claim is predominantly one of improper procedure or a dispute over the facts; the court determines de novo whether the agency has failed to proceed in the manner prescribed by CEQA, but reviews for substantial evidence an agency's resolution of a factual dispute over whether adverse effects have been mitigated or could be better mitigated. Cal. Pub. Res. Code § 21168.5.

[2] **Environmental Law** Assessments and impact statements

Standard of review for whether a project description in an environmental impact report (EIR) complies with requirements of California Environmental Quality Act (CEQA) is de novo. Cal. Pub. Res. Code § 21000 et seq.

[3] **Environmental Law** Land use in general

Project description in draft environmental impact report (EIR) for mixed-use development project was not accurate, stable, and finite, as required by California Environmental Quality Act (CEQA), where description failed to describe the siting, size, mass, or appearance of any building proposed to be built at side, description merely presented different conceptual scenarios that might not ultimately be constructed, description did not provide technical characteristics of construction, such as site plans, cross-sections, building elevations, or illustrative massing, and there were no practical impediments to providing a more accurate description. Cal. Pub. Res. Code § 21000 et seq.; Cal. Code Regs. tit. 14, § 15124.

[4] **Environmental Law** Adequacy of Statement, Consideration, or Compliance

Under California Environmental Quality Act (CEQA), description of the project is an indispensable element of both a valid draft environmental impact report (EIR) and a final EIR. Cal. Pub. Res. Code § 21000 et seq.; Cal. Code Regs. tit. 14, § 15124.

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[5] **Environmental Law** Adequacy of Statement, Consideration, or Compliance

Under California Environmental Quality Act (CEQA), project description, as included in environmental impact report (EIR), must be accurate, stable, and finite. Cal. Pub. Res. Code § 21000 et seq.; Cal. Code Regs. tit. 14, § 15124.

[6] **Environmental Law** Adequacy of Statement, Consideration, or Compliance

Environmental Law Harmless error

If an environmental impact report (EIR) fails to include relevant information and precludes informed decisionmaking and public participation, the goals of California Environmental Quality Act (CEQA) are thwarted, and a prejudicial abuse of discretion has occurred. Cal. Pub. Res. Code § 21000 et seq.

[7] **Environmental Law** Adequacy of Statement, Consideration, or Compliance

Environmental Law Harmless error

Prejudice from failure to comply with informational requirements of California Environmental Quality Act (CEQA), as could support reversal of agency action based on such failure, is found if the failure to include relevant information precludes informed decision making and informed public comment. Cal. Pub. Res. Code § 21005(b).

[8] **Environmental Law** Land use in general

Environmental Law Harmless error

Ambiguous project description in draft environmental impact report (EIR) for mixed-use development project prejudicially impaired public's ability to participate in California Environmental Quality Act (CEQA) process, requiring reversal of project approval and certification of EIR; developer failed to present any concrete project proposal and instead chose concepts and impact envelopes, precluding informed public participation. Cal. Pub. Res. Code § 21005(b).

[9] **Courts** Opinions

An appellate opinion sufficiently states reasons if it sets forth the grounds or principles upon which the justices concur in the judgment.

[10] **Appeal and Error** Necessity of Determination by Reviewing Court

An appellate court is not required to address every one of the parties' respective arguments or express every ground for rejecting every contention advanced by every party.

[11] **Environmental Law** Assessments and impact statements

Provision of California Environmental Quality Act (CEQA) providing that a trial court order upon remand shall include only those mandates necessary to achieve CEQA compliance does not mean that appellate court is required to rule on every issue presented on appeal in a CEQA case. Cal. Pub. Res. Code § 21168.9.

Witkin Library Reference: 12 Witkin, Summary of Cal. Law (11th ed. 2017) Real Property, § 889 [Detailed Statement.]

****298** APPEAL from a judgment of the Superior Court of Los Angeles County. James C. Chalfant, Judge. Affirmed. (Los Angeles County Super. Ct. No. BS144606)

Attorneys and Law Firms

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JONES, J. *

*4 INTRODUCTION

In this appeal, Millennium Hollywood LLC (Millennium), the City of Los Angeles and Los Angeles City Council (City) (collectively appellants) challenge the trial court's ruling that the proposed development of a four-and-a-half-acre parcel straddling Vine Street in Hollywood, California (the project) failed to comply with the requirements of the California Environmental Quality Act (CEQA). (Pub. Resources Code, § 21000 et seq.)

Specifically, appellants challenge four aspects of that decision. First, they argue that the trial court's finding that the project description in the environmental impact report (EIR) failed to comply with CEQA's requirement for a *5 stable and finite project description is incorrect as a matter of law. Appellants contend that this ruling conflicts with other cases allowing a flexible, general project description.

Second, appellants challenge the trial court's conclusion that the EIR's transportation impact analysis was fatally flawed because it failed to use the methodology directed by Caltrans, a responsible agency on this aspect of the EIR. Appellants assert **299 that the City was within its sound discretion to use a methodology that did not consider the traffic impacts of the project on the 101 Freeway, located blocks away from the proposed development.

Third, appellants challenge the trial court's finding that the traffic impact analysis was unsupported by substantial evidence because it failed to consider the cumulative effects of existing developments and growth in Hollywood, and the NBC/Universal development project, located three miles from the site on the other side of the 101 Freeway.

Finally, appellants argue that the trial court erroneously concluded that the qualified condition of approval (Q Condition No. 1) impermissibly expanded the scope of the project well beyond the scope of the EIR's analysis. (See Los Angeles Mun. Code (LAMC), § 12.32, subd. (G)(2).) Appellants argue that the various land use approvals "unambiguously" limit any project uses to those that are entirely consistent with the EIR. [1]

Stopthemillenniumhollywood.com, Communities United for Reasonable Development, and George Abrahams (collectively Stopthemillennium) cross-appeal from that portion of the trial court's decision regarding the draft EIR's disclosure of seismic impacts of the development. Specifically, the trial judge found that the draft EIR adequately disclosed and analyzed the then-known facts regarding faults and their proximity to the Millennium development site. Stopthemillennium appeals that ruling, arguing that the trial court erred in finding that the draft EIR performed its required legal obligation to inform the public about seismic conditions at the development site.

*6 We find that the trial court did not err in concluding that the project description used by the City and Millennium failed to comply with CEQA's requirement of an accurate, stable and finite project description. Thus, on this ground, we affirm. As the project description is at the heart of the EIR process in this case, it is not necessary to reach appellants' and Stopthemillennium's other contentions.

BACKGROUND FACTS

The facts in this section are limited to the single basis upon which this decision rests—the legal sufficiency of the description of the project used in the EIR. [2]

The location of the proposed development at issue is a 4.47-acre site straddling Vine Street, south of Yucca Street, and **300 north of Hollywood Boulevard. The site surrounds the historic Capitol Records Building in Hollywood.

A. The 2008 Proposal

On August 18, 2008, Millennium filed a master land use permit application with the City's planning department. The 2008 project was described as a mixed-use development, consisting of approximately 492 residential units, a 200-unit luxury hotel, 100,000 square feet of office space, a 35,000-square-foot sports club and spa, more than 11,000 square feet of commercial uses, and 34,000 square feet of food

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and beverage uses. The historic Capital Records Tower and Gogerty Building would be preserved and maintained as an office and music recording facility.

As an attachment to the application, Millennium described what it proposed to build and the purposes for which the buildings would be used. The 2008 project was to have three separate towers arising out of two low-rise buildings situated on the east and west sides of Vine Street. The new construction would "frame" the Capitol Records Tower, incorporating extensive and inviting open spaces and terraces located on the multi-tiered low rise buildings. In addition, Millennium proposed a high-rise observation deck at the top of the tallest tower in the 2008 project. In that application, Millennium requested a zone change to permit a sports club, and a variance to allow greater development density than was allowed under existing plans.

***7** The 2008 project application specifically described what Millennium proposed to build. On the lot situated east of Vine (East Site), the new construction was to consist of a 12-story low-rise building, partially wrapped around seven stories of above-grade parking, on top of five stories of subterranean parking. The East Site buildings would integrate two ground floors and a 33-story residential tower that would rise out of the low-rise building to approximately 554 feet above street level, "creating a 45-story, 578,574 square foot structure that [would] be 584 feet above ground" at the highest point of the building.

On the lot situated west of Vine (West Site), Millennium proposed to build a four-story, two-tiered low-rise structure, comprised of a sports club with a spa as well as a hotel lobby. That low-rise structure would support two towers with four subterranean levels of parking, creating a 470,201 square-foot building. The two ground floors would be integrated at the mezzanine level. The larger tower, offset at an angle, would be approximately 482 feet above street level at the roof of the highest habitable floor, or 511 feet at the top of the roof-top parapet. The larger tower would have 34 stories of residential uses. The smaller second tower, also situated at an offset angle and located at the corner of Yucca and Ivar Streets, would be a 200-room luxury hotel, creating a 14-story structure that would be 218 feet above street level at the top of the roof. The residential tower would include 175 condominium units. In total, the completed project would be 1,163,079 square feet of floor area.

Detail was not omitted from the 2008 application. Millennium described the pedestrian plazas with "post card views" of the Capitol Tower, outdoor dining areas, lounge seating, a sun deck and a pool for the hotel. The entryway on Argyle Avenue "would be accented by an additional water feature and decorative ornamental planting." Detailed site plans, locations, and elevations for the buildings, architectural renderings of the buildings themselves, and the related features of the development were included.

****301** Thereafter, the City Department of Building and Safety informed the developer that the proposed project's enclosed balconies would exceed the 6:1 floor area ratio (FAR) allowable under the City's general plan and would, therefore, require a variance. Millennium took no further action on the project until 2011.

B. The 2011 Proposal

Millennium submitted another master land use permit application to the City's planning department in April 2011. The 2011 proposal shared similarities with the 2008 proposal. The total project size was largely the same, and the proposed mixed-use nature of the development was preserved. Parking ***8** garages were described as both subterranean and above-grade. Proposed uses for the buildings were described (such as residential uses, hotel and commercial uses), but this application noted that "[t]he Project may alter the types or amounts of the uses from those listed above in compliance with the Land Use Equivalency Program and Development Standards." Missing from this application was any description or detail regarding what Millennium intended to build. [3]

This lack of detail about the proposed project and what it would look like and for what uses it would be built continued throughout the environmental review process. As described by Millennium's lawyer, "the [2011 project] is presented as a concept plan and several land use scenarios." The concept plan identified various components, including residential units, hotel, office, commercial, food and beverage, fitness center, and parking uses. The project description "is designed to create an impact 'envelope' within which a range of development scenarios can occur."

In its initial study, the City described the project to include the construction of 1,052,667 square feet of newly built floor area. The Capitol Records Tower and the Gogerty Building, which are within the project site, would be preserved and maintained as office and music recording

facilities. The maximum floor area (existing buildings plus new construction) would total 1,166,970 square feet, with a 6:1 FAR averaged across the project.

Although not specifically identified, quantified or located within the building sites, "[t]he [p]roject would develop a mix of land uses, including residential dwelling units, luxury hotel rooms, office and associated uses, restaurant space, health and fitness club uses and retail establishments."

And, a development agreement for the project would have a 25-year term and embody the project's pre-defined limits "regarding developable floor area, permitted land uses, design guidelines, and site-specific development standards," which would "control the scale and massing of the Project." The initial study did not include any drawings or renderings of what Millennium proposed to build, the number of buildings, their shape and size, their location within the building sites, or the purposes to which they would be put. The only stable and finite description of buildings at the site was the size, location, and purposes of the existing Capitol Records Tower and Gogerty Building.

The initial study incorporated a land use equivalency program (LUEP) as part of the project description. Under the LUEP, Millennium could transfer ***9** floor area among parcels within the project. These adjustments "could result in several potential ****302** development scenarios." These potential scenarios and combination of land uses "would occur within the development thresholds contemplated in the Development Agreement including the not-to-exceed FAR." Thus, the initial study failed to describe a stable or finite commitment regarding the uses to be made of the undisclosed and undescribed constructed buildings.

C. The Draft EIR

The City described the project in the draft EIR. In section II of the appendices of the "Millennium Hollywood Project Development Regulations: Guidelines and Standards," the project is described as a "mixed use development" that spans the north half of two blocks on either side of Vine Street between Hollywood Boulevard and Yucca Streets.

As for specifics, however, the draft EIR contained very few. Instead, "[t]he Project would implement a Development Agreement ... that would vest the Project's entitlements, established detailed *and flexible* development parameters for the Project Site and ensure that the Project is completed consistent with [these parameters]." (Italics added.) "Implementation of a proposed Development Agreement also would grant flexibility regarding the final arrangement and density of specific land uses, siting, and massing characteristics subject to detailed development controls." Development regulations would be adopted in conjunction with the proposed development agreement which would prevail over any inconsistent land use regulations in the LAMC. [4]

As expressly noted in the draft EIR, because "flexibility is contemplated in the Development Agreement with regard to particular land uses, siting, and ***10** massing characteristics, a conceptual plan has been prepared as an *illustrative scenario* to demonstrate *a potential development program* that implements the Development Agreement land use and development standards (the Concept Plan)." (Italics added.) Thus, this concept plan was simply one "scenario" that might result from the approval of the development agreement. Two other possible scenarios were also identified in the draft EIR: the residential scenario and commercial scenario. All three scenarios were included in the draft EIR as "representative development scenarios, in order to help establish the maximum environmental impacts" to be studied under CEQA. The draft EIR explained as follows:

"Through the analysis of the Concept Plan and two additional scenarios, the ****303** Commercial Scenario and the Residential Scenario ... this Draft EIR analyzes the greatest possible impact on each environmental issue area. The most intense impacts from each scenario represent the greatest environmental impacts permitted for any development scenario for the Project. The Project may not exceed any of the maximum impacts identified for each issue area from either the Concept Plan, the Residential Scenario, or the Commercial Scenario."

The scenarios presented in the draft EIR, therefore, are only *possible* development schemes, any of which could implement the development agreement and land use and development standards. The concept plan "provides an illustrative assemblage of land uses and developed floor area that conforms to the terms of the Development Agreement." A potential configuration of the various buildings, and their location on the two lots, are provided. And "proposed net developed floor area" shared by the potential uses is enumerated.

The residential scenario increased the number of dwelling units, eliminated the hotel, did not increase office space

beyond that already provided by the Capitol Records Tower and Gogerty Building, and provided retail, restaurant and a sports and fitness club. The commercial scenario proposed a development that increased office space and hotel space at the expense of dwelling units.

As for scale and massing of the proposed development, the development regulations established height zones (A, B, C and D) and maximum floor plates for the towers. Within these zones, a building or buildings to a maximum height could be constructed. In addition, "the Project will occur within a pre-determined massing envelope." Maximum tower lot coverage, minimum floor area below certain heights, maximum floor tower plates, minimum setbacks and minimum public open space were set out. Certain rules for towers were provided. Grade level standards were also imposed to regulate street wall massing, entrances, and store fronts.

***11** Using these parameters, "conceptual architectural renderings" of a potential project were provided. The draft EIR expressly noted, however, that "these conceptual scale and massing renderings are not building designs and are being presented for purposes of depicting *potential* massing options that could be developed under the Development Regulations and Equivalency Program; other massing options are possible, but would not be more impactful than the option analyzed herein." (Italics added.)

Thus, other than being assured that ten viewpoints would be preserved, the public had no idea how many buildings or towers would be built and where they would be located on the project site. Instead, the public had only conceptual drawings of a development that might not be built.

D. Final EIR; City Council Approval

The final EIR was published in February 2013. It included, without modification, the project description set forth in the draft EIR.[5] The final EIR included criticisms received after issuance of the draft EIR from members of the public—many of whom complained that the draft EIR's project description made it impossible for them to participate meaningfully in the ****304** CEQA process. One commenter complained that the draft EIR lacked an accurate, stable, and consistent project description: "The [draft] EIR's equivalency program would allow virtually any type of development to be built, irrespective of what the [draft] EIR renderings and vague development regulations might indicate." Without greater specificity about the project, the public would be unable to "meaningfully participate in the approval process for the Project." This commenter complained that based on the draft EIR, the public had no idea "what types of uses will ultimately be built, where on the site they will be, what their general design will be, and what the ultimate environmental impacts will be." Notably, the draft EIR failed to disclose and analyze basic things—like "project driveways and ingress and egress from the Project's ... Vine Street driveways (assuming there will be Vine driveways)"—making it impossible to assess the project's impact on traffic circulation in one of Hollywood's "most congested areas." In short, this commenter observed, "we have no idea what will be built, except that it will likely be massive." The commenter further objected that the draft EIR was misleading because the concept plan "gives the public the impression that something approaching that plan will be built even though the Development Agreement allows different parts of the Project site to be sold to different ***12** developers who may choose to build something that bears no real resemblance to the Concept Plan." Further, the commenter observed, the "Development Agreement also provides that no subsequent approvals/environmental review would be required for any subsequent build-out of the Project." The commenter warned that the draft EIR's "enigmatic project description has the effect of cutting the public out of some of the more important questions about the Project. And it certainly cannot provide the City Council with enough information to support a Statement of Overriding Considerations."

Another citizen complained that it was "difficult to respond to a project that does not include a specific proposal." And, another complained that the project description "is unclear and seems intentionally nebulous." Despite these objections, the City made no modifications to the project description in the final EIR.

On July 23, 2013, the Los Angeles City Council gave final approval of Millennium's project.

E. Mandamus Petition

On August 28, 2013, Stopthemillenniumhollywood and Beachwood Canyon Neighborhood Association filed a petition asking for a peremptory writ of mandate directing the City to set aside the approval of the project and certification of the EIR. An amended petition was filed on September 5, 2014.

The first amended petition alleged three causes of action for violations of CEQA.[6] The first cause of action alleged, inter alia, that the City had prejudicially abused its discretion by failing to provide an accurate, stable, and finite project description. The second cause of action alleged, inter alia, that the City had prejudicially abused its discretion by declining to study the traffic impacts of the proposed Millennium project on the 101 Freeway, despite Caltrans's direction that it do so. The third cause of action alleged, inter alia, that the City had failed to notice and consult with the California Geological Survey regarding ****305** potential seismic hazards at the project site.

F. Trial Court's Order

On April 30, 2015, the trial court granted the petition for writ of mandate as to the first and second causes of action, but denied it as to the third cause of action. The trial court explained as follows:

Quoting *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 139 Cal.Rptr. 396 (*County of Inyo*), the trial court explained " '[a]n ***13** accurate, stable, and [consistent] project description is the *sin[e] qua non* of an informative and legally sufficient EIR' " because a shifting project description may confuse the public and public decision-makers, thus vitiating the EIR's usefulness as a vehicle for intelligent public participation. Accordingly, a project description "should be sufficiently detailed to provide a foundation for a complete analysis of the environmental impacts," and it should include all project components and "apprise the parties of the true scope of the project."

The trial court concluded that the project description in the present case was neither stable nor finite. The court characterized the final EIR as providing only a "blurred view of the project," noting that the LUEP, development regulations, and Q Condition No. 1 approved an "envelope" of *potential* residential, commercial, retail and office projects that would not have more than a maximum design mass and height, and would create no more than maximum levels of air pollution and traffic impacts.[7] Analyzing a "set of environmental impact limits," instead of analyzing the environmental impacts for a defined project, was not consistent with CEQA. Quoting *Burbank-Glendale-Pasadena Airport Authority v. Hensler* (1991) 233 Cal.App.3d 577, 284 Cal.Rptr. 498, the trial court held CEQA demanded instead that " 'the defined project and not some different project must be the EIR's bona fide subject.' " Indeed, the court noted an EIR that does not provide decision-makers, and the public, with adequate information about the project "fails as an informational document."

Acknowledging that there may be times when a project description setting forth only the project's physical parameters and maximum environmental impacts may be reasonable, the trial court found those circumstances were not present in this case. The court distinguished *Citizens for a Sustainable Treasure Island v. City and County of San Francisco* (2014) 227 Cal.App.4th 1036, 174 Cal.Rptr.3d 363 (*Treasure Island*), in which the island had been contaminated by hazardous materials that required cleanup, and the developer could not be sure when the island would be available for development. In that unusual circumstance, the *Treasure Island* court had concluded that a project description that included both fixed elements (such as street layouts) and conceptual elements (such as the shape of buildings or specific landscape designs) was all that could be meaningfully provided at present. Once additional project features were known, those would "be likely subjects of supplemental review before a final design was implemented." ***14** The trial court concluded that the unique circumstances present in *Treasure Island* were entirely absent in the ****306** present case. The court noted that the Millennium project site did not contain hazardous substances or other external variables that made the nature and timing of development unknown or unknowable, nor was there any planned supplemental environmental review, any external conditions creating uncertainty, or any reason the project developer could not be specific about project details. Thus, the trial court concluded: "While CEQA does not require a project to be defined down to the last detail, Millennium's uncertainty about market conditions or the timing of its build-out is an insufficient ground for the ambiguous and blurred Project Description."

Additionally, the trial court held that the conceptual approach used to define the project in this case impermissibly deferred a portion of the environmental impacts analysis. It noted that without knowing which of the project "concepts" would ultimately be built, the EIR could not (and did not) explain how the developers would avoid exceeding the maximum impacts when the project was finally designed and built. Moreover, the LUEP allowed Millennium to transfer or change uses within the project, and it allowed the planning director to approve a change request if the request demonstrated that it was consistent with the maximum allowable number of increased vehicle trips (trip captures) and did not exceed the maximum environmental impacts

identified in the EIR. The trial court asked, "But how will the Planning Director make that determination for changing the Project and using what criteria?" It noted that since no additional CEQA review was required to ensure that Millennium was within maximum environmental standards, and no public input would be allowed, the final EIR essentially "defers the environmental assessment of the Project and ultimately fails to ensure that the finally designated Project will not be approved without all necessary mitigations of environmental harm."

In finding the project definition impermissibly ambiguous, the trial court returned to the underlying informational purposes of CEQA. Citing *Natural Resources Defense Council v. City of Los Angeles* (2002) 103 Cal.App.4th 268, 126 Cal.Rptr.2d 615, the trial court held the environmental review process mandated by CEQA was "intended to provide the fullest information reasonably available on which the decision-makers and the public can rely in determining whether to start a project." When properly drafted, an EIR furnishes both the road map and the environmental price tag for the project so that the decision maker and the public both know how much they and the environment will have to give up in order to take that journey. In the present case, however, the ambiguous project description rendered this "price tag" ***15** unascertainable and deferred significant portions of the environmental analysis. As a result, CEQA's "informational and substantive requirements were violated." Accordingly, the court vacated the EIR and the entitlements it purported to support. [8]

Following a decision on non-writ causes of action, the trial court entered judgment on March 17, 2017. Millennium, the City, and Stopthemillennium timely appealed.

DISCUSSION

A. Standard of Review

A court's inquiry in a CEQA case " 'shall extend only to whether there was a prejudicial ****307** abuse of discretion. Abuse of discretion is established if the agency has not proceeded in the manner required by law or if the determination or decision is not supported by substantial evidence.' " (*Laurel Heights Improvement Assn. v. Regents of University of California* (1988) 47 Cal.3d 376, 392, 253 Cal.Rptr. 426, 764 P.2d 278, quoting Pub. Resources Code, § 21168.5.)

[1] In evaluating whether an agency has abused its discretion, a reviewing court must adjust its scrutiny depending on whether the claim is predominantly one of improper procedure or a dispute over the facts. The court determines de novo whether the agency has failed to proceed in the manner prescribed by CEQA, but reviews for substantial evidence an agency's resolution of a factual dispute over whether " 'adverse effects have been mitigated or could be better mitigated.' " (*Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 435, 53 Cal.Rptr.3d 821, 150 P.3d 709.)

[2] Regarding the question of whether the EIR's project description complied with CEQA's requirements, the standard of review is de novo. (*Washoe Meadows Community v. Department of Parks & Recreation* (2017) 17 Cal.App.5th 277, 286–287, 225 Cal.Rptr.3d 238 (*Washoe Meadows*); *see also Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 513, 241 Cal.Rptr.3d 508, 431 P.3d 1151.)

***16** B. Analysis

1. The Project Description Was Not "Accurate, Stable and Finite" as Required Under CEQA.

[3] A draft EIR must contain a project description. (Cal. Code Regs., tit. 14, § 15124.) [9] That project description must include (a) the precise location and boundaries of the proposed project, (b) a statement of the objectives sought by the proposed project, (c) a general description of the project's technical, economic and environmental characteristics, and (d) a statement briefly describing the intended use of the EIR. (*Id.*, § 15124, subds. (a)—(d).)

[4] **[5]** This description of the project is an indispensable element of both a valid draft EIR and final EIR. (*Washoe Meadows*, *supra*, 17 Cal.App.5th at p. 287, 225 Cal.Rptr.3d 238, citing *Western Placer Citizens for an Agricultural & Rural Environment v. County of Placer* (2006) 144 Cal.App.4th 890, 898, 50 Cal.Rptr.3d 799.) That project description must be accurate, stable and finite. (*County of Inyo*, *supra*, 71 Cal.App.3d at p. 193, 139 Cal.Rptr. 396.)

County of Inyo was the first decision to articulate the need for a definite and unambiguous project description as part of CEQA's environmental review process. In that case, the project involved the extraction of subsurface water in the Owens Valley by the City's Department of Water and Power.

(*County of Inyo*, *supra*, 71 Cal.App.3d at p. 189, 139 Cal.Rptr. 396.) Although the EIR initially described the project as a proposed increase of 51 cubic square feet of subsurface water, other portions of the EIR discussed proposals far broader than the initially described project. (*Id.* at p. 190, 139 Cal.Rptr. 396.)

The *County of Inyo* court acknowledged that the EIR adequately described the broader project's environmental effects, and thus the informative quality of the EIR's environmental forecasts were not affected by the "ill-conceived, initial project ****308** description." (*County of Inyo*, *supra*, 71 Cal.App.3d at p. 197, 139 Cal.Rptr. 396 ["The elasticity of the project concept does not vitally affect the 'impact' sections of the report."].) Nonetheless, the court concluded that the "incessant shifts" among different project descriptions "vitiate[d] the City's EIR process as a vehicle for intelligent public participation," because "[a] curtailed, enigmatic or unstable project description draws a red herring across the path of public input." (*Id.* at pp. 197, 198, 139 Cal.Rptr. 396.)

More recently, in *Washoe Meadows*, *supra*, 17 Cal.App.5th 277, 225 Cal.Rptr.3d 238, the requirement in CEQA of a clear and unambiguous project description was ***17** reiterated. In that case, the Department of Parks and Recreation (the Department) proposed the " 'Upper Truckee River Restoration and Golf Course Reconfiguration Project.' " (*Id.* at pp. 282–283, 225 Cal.Rptr.3d 238.) The draft EIR identified five alternatives for the project without specifying a preferred alternative. (*Id.* at 283, 225 Cal.Rptr.3d 238.) Rather, the Department would select a preferred alternative after "receipt and evaluation of public comments." (*Ibid.*) A discussion of that decision would be included in the final EIR. (*Ibid.*)

The Court of Appeal found the open-ended and indefinite project description utilized by the Department was legally impermissible under CEQA. "Dispositive of this appeal is the [draft] EIR's failure to provide the public with an accurate, stable and finite description of the project." (*Washoe Meadows*, *supra*, 17 Cal.App.5th at p. 285, 225 Cal.Rptr.3d 238.) The Department was able to provide certainty; it had selected a preferred alternative as part of its public scoping process for the project. (*Id.* at pp. 282–283, 225 Cal.Rptr.3d 238.) But, for some reason, it simply failed to describe a project at all. "Instead, it presented five different alternatives for addressing the Upper Truckee River's contribution to the discharge of sediment into Lake Tahoe, and indicated that following a period for public comment, one of the alternatives, or a variation thereof, would be selected as the project." (*Id.* at p. 285, 225 Cal.Rptr.3d 238.)

It did not matter to the *Washoe Meadows* court that the draft EIR thoroughly analyzed the alternative that was ultimately selected in the final EIR. "[T]he problem with an agency's failure to propose a stable project is not confined to 'the informative quality of the EIR's environmental forecasts.' " (*Washoe Meadows*, *supra*, 17 Cal.App.5th at p. 288, 225 Cal.Rptr.3d 238.) Rather, a failure to identify or select a project at all "impairs the public's right and ability to participate in the environmental review process." (*Ibid.*)

The requirement of an accurate, stable, and finite project description as the *sine qua non* of an informative and legally sufficient EIR has been reiterated in a number of cases since *County of Inyo.* (See, e.g., *Treasure Island*, *supra*, 227 Cal.App.4th at p. 1052, 174 Cal.Rptr.3d 363 ["This court is among the many which have recognized that a project description that gives conflicting signals to decision makers and the public about the nature and scope of the project is fundamentally inadequate and misleading"]; *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 85–89, 108 Cal.Rptr.3d 478 [EIR failed as an informal document because the project description was inconsistent and obscure as to the true purpose and scope of the project]; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 653, 57 Cal.Rptr.3d 663 [an EIR must include detail sufficient to enable those who did not participate in its preparation to understand and to consider ****309** meaningfully the issues raised by the proposed project].)

***18** In this case, the project description is not simply inconsistent, it fails to describe the siting, size, mass, or appearance of any building proposed to be built at the project site. The draft EIR does not describe a building development project at all. Rather, it presents different conceptual scenarios that Millennium or future developers may follow for the development of this site. These concepts and development scenarios—none of which may ultimately be constructed—do not meet the requirement of a stable or finite proposed project.

The development regulations that were incorporated into the project description provide the public and decision makers little by way of actual information regarding the "design features" or the "final development scenario." Rather, these regulations simply limit the range of construction choices for future developers. And, even the limits imposed are

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vague and ambiguous. While future developers are to create a mixed-use development, eliminate the visual impact of current on-site parking, establish, where feasible, pedestrian linkages to existing public transit, and "provide designs that address, respect and complement the existing context, including standards for ground-level open space, podium heights and massing setbacks," no particular structure or structures are required to be built.

[6] In support of their argument that the conceptual "impacts envelope" of project alternatives employed in the EIR complies with CEQA, appellants erroneously assert that so long as the worse-case-scenario environmental effects have been assumed, analyzed, and mitigated, and so long as no development takes place that exceeds those mitigation measures, CEQA's purpose has been fully satisfied. That argument was made and roundly rejected in *County of Inyo*, and *Washoe Meadows.* CEQA's purposes go beyond an evaluation of theoretical environmental impacts. "If an EIR fails to include relevant information and precludes informed decisionmaking and public participation, the goals of CEQA are thwarted and a prejudicial abuse of discretion has occurred." (*Save Our Peninsula Committee v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 128, 104 Cal.Rptr.2d 326.)

Nor does *South of Market Community Action Network v. City and County of San Francisco* (2019) 33 Cal.App.5th 321, 245 Cal.Rptr.3d 174 (*South of Market*) suggest a different rule. In that case, the Court of Appeal confirmed the proposition that an " 'accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR.' " (*Id.* at p. 332, 245 Cal.Rptr.3d 174, citing *County of Inyo*, *supra*, 71 Cal.App.3d at p. 199, 139 Cal.Rptr. 396.) " 'Only through an accurate view of the project may affected outsiders and public decision makers balance the proposal's benefit against its environmental costs, consider ***19** mitigation measures, assess the advantage of terminating the proposal ... and weigh other alternatives in the balance.' " (*South of Market*, *supra*, 33 Cal.App.5th at p. 332, 245 Cal.Rptr.3d 174.)

In *South of Market*, however, the project description was neither " 'curtailed, enigmatic or unstable.' " (*South of Market*, *supra*, 33 Cal.App.5th at pp. 327–328, 245 Cal.Rptr.3d 174.) The draft EIR described a mixed-use development that would preserve and rehabilitate two existing buildings and construct four new buildings at the project site. The only uncertainty challenged by the opponents of the project was that the draft EIR did not commit to whether the buildings would be used predominately as office space or residential units. (*Id.* at p. 332, 245 Cal.Rptr.3d 174.) ****310** "Plaintiffs do not dispute the [draft] EIR's project description met CEQA technical requirements, and do not describe any information that was required to be included in the project description but was not." (*Ibid.*) In fact, the draft EIR included "site plans, illustrative massing, building elevations, cross-sections and representative floor plans for both options." (*Id.* at p. 333, 245 Cal.Rptr.3d 174.) Thus, the project description met the information required by the guidelines. (*Id.* at p. 332, 245 Cal.Rptr.3d 174 [requiring a general description of the project's technical, economic and environmental characteristics].)

In the present case, the project description fails to meet this basic Guidelines requirement. The technical characteristics of the construction project—such as was provided in *South of Market*—were not provided here. The draft EIR did not contain site plans, cross-sections, building elevations, or illustrative massing to show what buildings would be built, where they would be sited, what they would look like, and how many there would be.

Moreover, as noted by the trial court, there were no practical impediments as to why Millennium could not have provided an accurate, stable, and finite description of what it intended to build. Unlike the *Treasure Island* developer, there were no contaminated sites on this property that interfered with making any firm commitment as to whether development would be possible and, if so, what type of development. (*See Treasure Island*, *supra*, 227 Cal.App.4th at p. 1054, 174 Cal.Rptr.3d 363 [given the soil, groundwater and structural contamination on Treasure Island, the EIR could not be faulted for not providing detail that "does not now exist"].) In fact, in its earliest proposals regarding the project, Millennium clearly described what it proposed to build on its two parcels in Hollywood.

Nor, as in *Treasure Island*, would the Millennium development's future configuration be subject to "supplemental review" before the "final Project design" is implemented. (*See Treasure Island*, *supra*, 227 Cal.App.4th at p. 1054, 174 Cal.Rptr.3d 363.) This lack of further environmental review is another significant difference between the circumstances presented in *Treasure Island* and those present here.

***20** 2. The EIR's Ambiguous Project Description Prejudicially Impairs the Public's Ability to Participate in the CEQA Process.

[7] **[8]** The failure to comply with CEQA's informational requirements does not require reversal unless there is prejudice. (Pub. Resources Code, § 21005, subd. (b).) Such prejudice is found, however, if the failure to include relevant information precludes informed decision making and informed public comment. (*Washoe Meadows*, *supra*, 17 Cal.App.5th at p. 290, 225 Cal.Rptr.3d 238.) The omission of relevant information is deemed prejudicial " 'regardless of whether a different outcome would have resulted if the public agency had complied with those provisions.' " (*Id.* at p. 290, 225 Cal.Rptr.3d 238, citing Pub. Resources Code, § 21005, subd. (a); *Rural Landowners Assn. v. City Council* (1983) 143 Cal.App.3d 1013, 1021, 192 Cal.Rptr. 325.)

In this case, Millennium's failure to present any concrete project proposal, instead choosing concepts and "impact envelopes" rather than an accurate, stable, and finite project, was an obstacle to informed public participation, "even if we cannot say such input would have changed the project ultimately selected and approved." (*Washoe Meadows*, *supra*, 17 Cal.App.5th at p. 290, 225 Cal.Rptr.3d 238.) Accordingly, the trial court correctly invalidated the EIR and granted the CEQA writ petition.

****311** 3. Need Not Reach the Remaining Arguments on Appeal

[9] **[10]** **[11]** The parties raise other issues regarding the EIR's sufficiency on appeal, including, inter alia, whether the City is required by law to use Caltrans's methodology for the study of traffic effects, whether the City was required to consider cumulative effects, including those on the 101 Freeway, in evaluating the project under CEQA, and whether the seismic issues were sufficiently disclosed. Given that the project description is fatally defective and supports the trial court's decision to issue the writ, we need not reach these issues. " 'An opinion sufficiently states "reasons" if it sets forth the "grounds" or "principles" upon which the justices concur in the judgment.' " (*People v. Garcia* (2002) 97 Cal.App.4th 847, 853, 118 Cal.Rptr.2d 662, citing *Lewis v. Superior Court* (1999) 19 Cal.4th 1232, 1262, 82 Cal.Rptr.2d 85, 970 P.2d 872.) An appellate court is not required to address every one of the parties' respective arguments or express every ground for rejecting every contention advanced by every party. [10] (*People v. Garcia*, at p. 853, 118 Cal.Rptr.2d 662.)

***21 DISPOSITION**

The judgment is affirmed. Stopthemillennium shall recover their costs on appeal. The League of Cities' request for judicial notice is denied.

We concur:

EDMON, P. J.

LAVIN, J.

All Citations

39 Cal.App.5th 1, 251 Cal.Rptr.3d 296, 19 Cal. Daily Op. Serv. 8349, 2019 Daily Journal D.A.R. 8120

Footnotes

* Judge of the Los Angeles Superior Court, assigned by the Chief Justice pursuant to article VI, section 6 of the California Constitution.

1 Two organizations submitted amicus curiae briefs in support of appellants: League of California Cities (League of Cities) and the California State Association of Counties (State Association of Counties). The State Association of Counties' brief is directed to that portion of the trial court's decision regarding Caltrans's role in the environmental review of the project. As we do not reach those issues, we similarly will not reach the argument furthered by the State Association of Counties.
As for the League of Cities, its arguments largely repeat appellants' contentions that the project description satisfies CEQA's requirements and thus we do not separately address them. We deny the League of Cities'

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request for judicial notice. The materials sought to be noticed are not relevant to the legal determination of whether the project description utilized in this case was sufficiently accurate, stable and finite to meet CEQA's requirements.

2 The City adopted the project description contained in the draft EIR as the project description in the final EIR. Although at oral argument an issue was raised as to whether the possibility of the venue being used for outdoor concerts was added by a city council person before final approval, the late inclusion of that use was not challenged below. Appellants conceded at oral argument that the project description used in the draft EIR is the same project description that was used for the final EIR.

3 And, as noted in the final EIR, any approved project under this application and CEQA process would have to comply with what was studied in the draft EIR, not what the 2008 application describes.

4 The project site was zoned C4-2D-SN, which is commercial with limitations and multi-family residential uses within Height District 2. Millennium requested uses permitted in the land use equivalency program or as permitted in the C2 zone, as defined in section 12.16.A of the LAMC in Q Condition No. 1. Although Millennium asserts that Q Condition No. 1 was added solely to allow it to include a health and fitness center in the project, the plain language of the condition does not include such limitation. Q Condition No. 1 reads, in full: “The use of the subject property shall be limited to those uses permitted in the Land Use Equivalency Program, attached as Exhibit D or as permitted in the C2 Zone as defined in Section 12.16.A of the L.A.M.C.” (Italics added.) While it may be that future developers elect not to construe this provision by its literal terms, it is the plain meaning that governs the interpretation. At oral argument, Millennium argued that the remaining conditions (such as Q Condition No. 2, which incorporates the development regulations) made it obvious that the language in Q Condition No. 1 was only to allow a fitness center to be incorporated in the project. A review of the development regulations, however, fails to support that argument. Nothing in these regulations mandates the construction of a fitness center. In fact, the development regulations state that “[t]he Project Site is zoned Commercial (C2).”

5 Once a draft EIR is prepared, the public is provided notice and an opportunity to comment. (Pub. Resources Code, § 21092.) These comments and responses, if any, are subsequently published in a final EIR. (Cal. Code Regs., tit. 14, §§ 15088—15089, 15204, subd. (a).)

6 The first amended petition also contained non-CEQA causes of action, but because they are not relevant to this appeal, we do not discuss them.

7 The trial court considered the use of the disjunctive “or” in the project's Q Condition of Approval No. 1 to give the developer the ability to choose from any of the long list of land uses expressly permitted in the C2 zone. Whether intended by the City, the express language of that condition provided Millennium even greater latitude to re-design and reconfigure the project. The trial court found that this possibility was not subject to environmental analysis and, therefore, the City's approval of this condition violated CEQA.

8 The trial court also heard and decided whether the City's analysis of the project's traffic and seismic impact analysis met the legal requirements of CEQA. These rulings will not be considered here as we conclude that the project description used in this case was legally insufficient.

9 The regulations implementing CEQA are codified at California Code of Regulations, title 14, section 15000 et seq., and are referred to as the State CEQA Guidelines (hereafter Guidelines).

10 Contrary to appellants' contention at oral argument, Public Resources Code section 21168.9 does not mandate that we rule on every issue presented on appeal. Rather, that section provides that the trial court's order, upon remand, shall include only those mandates that are necessary to achieve CEQA compliance. (*City of Redlands v. County of San Bernardino* (2002) 96 Cal.App.4th 398, 416, 117 Cal.Rptr.2d 582.)

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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 2

Here's a closer look at the ex-deputy mayor enmeshed in City Hall corruption probe

Former Deputy Mayor Raymond Chan, left, and Los Angeles Mayor Eric Garcetti. (Los Angeles Department of Building and Safety; Associated Press)

By Emily Alpert Reyes, Joel Rubin
May 20, 2020 | 5 AM

Raymond Chan earned praise at City Hall for his eagerness to smooth out city bureaucracy for developers, both as the head of Los Angeles' building department and later as a deputy mayor focused on economic development.

When Chan stepped down from city service, Mayor Eric Garcetti credited him with helping to usher in L.A.'s development boom and lauded him as a "true public servant."

Now court records in an ongoing federal probe into corruption at City Hall tell a different story. Prosecutors have alleged that a deputy mayor was paid by a real estate consultant to help shepherd a major project through City Hall — and leveraged his power as a city official to aid the development.

Although federal investigators did not name the former deputy mayor in court papers, details about his employment history make clear it is Chan, including the dates that he headed the Los Angeles Department of Building and Safety and when he was appointed deputy mayor for economic development. He has not been charged with a crime.

Chan has long been known to be under scrutiny by investigators: He was previously named in a federal warrant seeking evidence of possible crimes involving more than a dozen people, which surfaced more than a year ago. The warrant, served on Google, sought records from his email account.

But the latest filing spells out much more about what investigators are probing about the former deputy mayor and building chief, whose enthusiasm for fostering new development had long polarized his fans and critics.

The allegations surrounding such an important figure — a City Hall veteran who led a department crucial to real estate development — could deepen the distrust in local government that has been fueled by the federal investigation.

Chan did not respond to phone messages seeking comment. His attorney, Harland Braun, said Chan had done nothing wrong. Chan was recognized in the development industry as a "helpful, go-to person whenever help or advice was needed" and "never asked for or received anything in return for his own interest or benefit," Braun said.

The new allegations emerged when one of Chan's business associates became the third person charged in the sweeping investigation into alleged pay-to-play schemes at L.A. City Hall. Real estate consultant George Chiang has agreed to plead guilty to participating in a criminal enterprise that included helping a Chinese firm bribe an L.A. City Council member and paying a deputy mayor to usher along a development project.

Garcetti, asked about the federal allegations involving a former deputy mayor, said last week that he had "zero tolerance" for the alleged wrongdoing detailed by prosecutors.

Chan had long been seen as a friend to development. Six years ago, when Chan was chosen to permanently take over the building department, council members praised him for cutting red tape. Councilman Mitch O'Farrell said he had "made great strides in reducing the number of steps that it takes to get projects off the ground," bolstering the economy.

Robert "Bud" Ovrom, who headed the building department before Chan, described Chan as a "Mr. Fix It" who was bullish about development and extremely accommodating to council members.

"If a councilman asked Ray, 'What does two and two equal?' he would answer by saying, 'What do you want it to equal?' " said Ovrom, who added that he was stunned by the allegations in the federal case.

Chan emphasized his efforts to streamline L.A.'s permitting process. In a slideshow for employees after Chan got the job, the department urged employees to be flexible and focus on the intent of city codes. It offered up a scenario of a man who orders a set dinner in a restaurant and is told he cannot substitute fruit for Kahlua cream pie.

“Would the man eat at the restaurant again?” the slideshow asked. “Could the restaurant be more reasonably flexible?”

Robert P. Silverstein, an attorney who has represented neighborhood groups suing the city over development decisions, said he was disturbed that the building department seemed to see developers, not the public, as its customers. He argued that the department “reached a truly deplorable low under Chan,” who led the department as either its interim or permanent chief from 2013 to 2016.

Opponents of the Millennium Hollywood skyscraper project, which was thwarted by legal challenges brought by Silverstein, argued that Chan had a conflict of interest because his son was a paid intern at a law firm that represented the Millennium developer. Silverstein complained that “instead of cleaning house, Garcetti promoted Chan to deputy mayor” in 2016.

Chan said shortly after the complaint was submitted that he had been cleared of wrongdoing. A Garcetti spokesman said the matter “was referred to the Ethics Commission, which declined to take any enforcement action.”

In federal filings last week, prosecutors laid out a bribery plot involving Chiang, his business partners and an unnamed Los Angeles City Council member. Details in court filings have made clear that the politician is Councilman Jose Huizar, whose attorneys have repeatedly declined to comment.

Prosecutors also detailed the role of “Individual 1,” describing him as a former deputy mayor who first met Chiang at an event hosted by the Chinese firm that pursued the hotel-and-residential project involved in the alleged bribes.The man told Chiang he was well-respected as the general manager of the building department, their filing said.

The unnamed man later asked over lunch whether Chiang was interested in consulting on downtown development projects and offered to introduce Chiang to city officials, according to the plea deal.

Individual 1 “indicated that his goal was to ensure the success of Chinese projects in Los Angeles,” prosecutors said. He instructed Chiang to set up a consulting company to carry out his goals, and Chiang formed Synergy Alliance Advisors,according to the federal filings. The two later formed CCC Investment Group, which worked with development companies.

Chiang became a consultant on a planned project that would redevelop the Luxe City Center Hotel across from the L.A. Live entertainment complex, proposed by the Chinese firm Shenzhen Hazens. Prosecutors did not name the development involved in the alleged bribery scheme, but details in their filings — including the number of hotel rooms and residential units and the dates of City Hall votes — match the downtown project.

The plea deal states that the deputy mayor reached an agreement with Chiang to help with the planned project in exchange for “future payments.” While the deputy mayor was still working

for the city, he prepared weekly lists of tasks for the project, led project meetings and assigned tasks to Chiang to advance the project, according to the plea deal.

He also leveraged his official position to pressure subordinates to take favorable steps for the project, set up a meeting between the planning department and company officials pursuing the development, and met with a member of the City Planning Commission to urge them to approve it, prosecutors alleged. Months after he left his city job in 2017, he was paid $112,000 for his assistance with the project as deputy mayor, according to prosecutors.

Shortly after leaving his city job, during the period when he was barred from lobbying city officials, the former deputy mayor asked a top staffer to an unnamed council member — identified only as “City Staffer D” — to ask a Garcetti staffer to pressure the commission to approve the project, according to prosecutors. Soon afterward, Chiang set up a consulting agreement to benefit a relative of City Staffer D, the filing states.

The Times also reported last year that while serving as deputy mayor, Chan had raised tens of thousands of dollars for Asian Pacific American Heritage Month celebrations from real estate developers who were seeking city approvals or awaiting building inspections.

Chan told a council aide that he had secured a $10,000 donation from Shenzhen Hazens. Experts said such fundraising activities are legal but could raise ethical concerns, depending on how much influence Chan had over those companies.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 3

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April 29, 2020

VIA EMAIL mindy.nguyen@lacity.org
AND OVERNIGHT DELIVERY

Mindy Nguyen
City of Los Angeles, Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012

Re: Objection to Denial of Request for Extension of 45-Day Comment Period for Hollywood Center Project Draft Environmental Impact Report ("DEIR"); Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen and City Officials:

This letter and all complete documents and materials contained in the links set forth within this letter are to be included in the administrative record for the above-referenced matter.

The City's April 28, 2020 response to our and others' request for an extension of the Hollywood Center Project DEIR comment period is repugnant, verging on mocking the public. To acknowledge as your April 28, 2020 email does that "these are unprecedented times," and yet for the Planning Dept. to treat them for public comment purposes as regular times, defies logic. Its import also ignores how everyone's lives have been upended as people are busy trying to stay safe, to home school children, to care for sick relatives, to manage entirely new and disruptive routines, etc. This no less includes the staff of governmental agencies expected to comment on this DEIR, and which should have the fullest time possible to comment as part of their duties to ensure the public health, safety and welfare.

It is also to deny Mayor Garcetti's repeated emotional pleas, and even threats, to the community about obedience to his "Stay-at-Home" orders. The Planning Dept. buck of unreasonable denial of a tolling or extension of the public comment period for this

massive project and EIR stops with Garcetti. We incorporate by reference the articles contained at these links quoting Mayor Garcetti in this regard:

> "In a remarkable State of the City address, one that comes five weeks into the shutdown of many businesses, government buildings and other facilities, Garcetti declared that the city is 'under attack' from the coronavirus and the economic fallout that has come with it.
>
> 'I've never before hesitated to assure you that our city is strong,' he said. 'But I won't say those words tonight. Our city is under attack. Our daily life is unrecognizable.'"[1]
>
> "Los Angeles Mayor Eric Garcetti unveiled a $10.5-billion budget for the city Monday that imposes cuts across an array of city agencies, with nearly 16,000 city workers being furloughed in response to the economic fallout from the coronavirus outbreak."[2]
>
> "'This weekend we saw too many images of too many people crowding beaches or canyons beyond their capacity. Too many people, too close together, too often,' Garcetti said during his daily briefing on the impact of the novel coronavirus. 'The longer we do that, the more people will get sick, and the more people will die. There's no way to sugarcoat that.'
>
> 'Asked by a reporter whether the city would hold residents accountable for breaking quarantine orders, Garcetti said that law enforcement officers will 'not be shy' when it comes to approaching those who are seen doing so."'[3]

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[1] https://www.latimes.com/california/story/2020-04-19/garcetti-state-of-city-la-address-coronavirus

[2] https://www.latimes.com/california/story/2020-04-20/coronavirus-garcetti-budget-story-2020-2021-furloughs-cuts

[3] https://www.latimes.com/california/story/2020-03-23/coronavirus-mayor-eric-garcetti-ignoring-social-distancing-beaches

> "'I know your heart breaks…. This is such a great tradition for the many families we have,' L.A. Mayor Eric Garcetti said. 'But we can't afford to have one cluster of even just a few people together spread this disease to more people and kill them.'[4]
>
> "'Unfortunately among the fallen 'is a city employee, Garcetti said Friday. 'It wasn't just lip service that these are going to be tough days.'"[5]
>
> "If a business refuses to provide face coverings for its workers, it could be fined, but the hope is that businesses and customers will follow the order without issue, Garcetti said."[6]
>
> "At least five nights a week, Garcetti has appealed directly to Angelenos on live television — or Facebook, for those with smaller screens — to get them to comply with public health orders and keep up with the region's rapidly changing response to the spread of the novel coronavirus."[7]
>
> "Garcetti said that his office is still receiving daily reports of nonessential businesses that continue to operate as normal — behavior he called 'irresponsible and selfish.'"
>
> "He also announced a Safer at Home business ambassadors initiative that aims to help push greater adherence from nonessential businesses who aren't complying with the city's order to close.

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4 https://www.latimes.com/california/story/2020-04-10/california-toughens-stay-at-home-rules-as-coronavirus-cases-top-20-000

5 https://www.latimes.com/california/story/2020-04-11/2-l-a-city-workers-die-of-coronavirus

6 https://www.latimes.com/california/story/2020-04-07/coronavirus-face-covering-order-los-angeles-mayor-garcetti

7 https://www.latimes.com/california/story/2020-04-13/garcetti-coronavirus-briefings-distancing-masks-love

> Such businesses should also expect to get a warning call from local prosecutors before the city takes more aggressive action, including turning off their water and power, he said.
>
> 'The easiest way to avoid a visit from the city is to follow the rules,' he said."[8]
>
> "Los Angeles Mayor Eric Garcetti said Wednesday that he's authorized the Department of Water and Power to shut off service to nonessential businesses that continue to operate despite the strict Safer at Home restrictions designed to slow the spread of the coronavirus."[9]

Your April 28, 2020 email also implies or assumes that everyone who wants to review the EIR should be able, on their own, to have an internet connection and sufficient bandwidth to download this very hefty DEIR. There is a serious Environmental Justice issue in the City's unreasonable conduct during this time.

We and our clients are indeed prejudiced, including by my difficulty in accessing all of our hard files, including from the previous StopTheMillenniumHollywood.com vs. City of Los Angeles, et al. (LASC Case No. BS144606; Court of Appeal Case No. B282319; CA Supreme Court Case No. S258643) litigation. Large parts of the administrative record from that original case must be included in the current administrative record because of its relevance to the instant application and DEIR. However, we cannot more discreetly select those documents because of lack of access to our physical offices.

As a result, we incorporate by reference the entire administrative record from the original Millennium case. Although the City Attorneys' Office and, presumably, the City Planning Department have the entire Administrative Record and Reference Library from the original Millennium case, which we ask to be incorporated by reference, nonetheless, in an abundance of caution, we are also sending you by overnight delivery a flash drive containing the full bates-stamped administrative record and full bates-stamped reference

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[8] https://www.latimes.com/california/story/2020-03-24/garcetti-warns-la-coronavirus-crisis-will-get-worse

[9] https://www.latimes.com/california/story/2020-04-01/l-a-will-shut-off-water-for-non-essential-businesses-operating-amid-coronavirus-restrictions

library from the original Millennium case administrative record. The entirety of those files must be uploaded and included in the present administrative record and on the City Planning Department's running web page of the ongoing additions to the present administrative record for the Hollywood Center Project DEIR. We would suggest those materials be noted in the description as follows:

- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 1 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 2 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 3 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 4 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 5 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 6 of 6
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 1 of 2
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 2 of 2

You are required to include all of these documents from the original administrative record in the current administrative record for this Hollywood Center application and Draft EIR, including pursuant to Consolidated Irrigation District:

> "We conclude that the term "submitted to" – which generally means presented or made available for use or study – is concerned with the effort that must be expended by the lead agency in using or studying the "written evidence" presented. (§ 21167.6, subd. (e)(7).) Consequently, we think that the term should be interpreted and

> applied pragmatically to fairly allocate the burden of handling the written evidence. Applying the term too broadly could place an unacceptable burden on lead agency personnel by requiring them to expend time and limited resources tracking down information that could have been provided more efficiently by the commenter. Based on considerations regarding the allocation of burden, we conclude that "written evidence" has been "submitted to" a lead agency for purposes of section 21167.6, subdivision (e)(7) when the commenter has made the document readily available for use or study by lead agency personnel." Consolidated Irrigation Dist. v. Superior Court (2012) 205 Cal.App.4th 697, 723.
>
> "The third category contains five documents named in the comment letters of CID and the air pollution control district along with a citation to the specific Web page containing the document. We conclude that the information provided made these documents readily available to City personnel. To access the document, the person need only type the URL into a computer connected to the Internet. The document will appear on the computer screen and no further searching is required. Thus, the burden placed on lead agency personnel is minimal when a commenter provides the URL to the specific Web page containing the document." Consolidated Irrigation Dist. v. Superior Court (2012) 205 Cal.App.4th 697, 724-725.

The burden placed on the City is minimal, actually non-existent. We have provided a flash drive with all of the bates-stamped files comprising the prior administrative record and reference library that the City itself certified. If you have any difficulty accessing or in utilizing the City's own set of the same materials, please promptly advise.

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Finally, please understand that this by no means remedies or sufficiently mitigates the prejudice to us, and others, from the truncated 45-day comment period during the pandemic. Our request (and that of numerous other community members) for a tolling or extension of that deadline remains active. Thank you.

Very truly yours,

/s/ Robert P. Silverstein
ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
Encl.: Flash drive containing Millennium AR and RL

cc: Mayor Eric Garcetti (mayor.garcetti@lacity.org)
Councilman Mitch O'Farrell (councilmember.ofarrell@lacity.org)
Councilman David Ryu (david.ryu@lacity.org)
Vince Bertoni, Dir. Of City Planning (vince.bertoni@lacity.org)
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May 20, 2020

VIA EMAIL mindy.nguyen@lacity.org
AND OVERNIGHT DELIVERY

Mindy Nguyen
City of Los Angeles, Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012

Re: Inclusion of Original Millennium Case Administrative Record for Hollywood Center Project Draft Environmental Impact Report ("DEIR"); Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen and City Officials:

In our April 29, 2020 letter to you, we submitted for inclusion in the Hollywood Center administrative record the entire administrative record and reference library of emails from the StopTheMillenniumHollywood.com vs. City of Los Angeles, et al. (LASC Case No. BS144606; Court of Appeal Case No. B282319; CA Supreme Court Case No. S258643) litigation.

Although the City Attorneys' Office and, presumably, the City Planning Department have the entire administrative record and reference library from the original Millennium case, which we asked to be incorporated by reference, nonetheless, in an abundance of caution, we also sent to you by overnight delivery a flash drive containing the full bates-stamped administrative record and full bates-stamped reference library from the original Millennium case administrative record. That must be included here and now. Please immediately confirm that you will do so.

As of today, we see that the original Millennium case record has not been uploaded to the running administrative record for the Hollywood Center Project DEIR as requested or provided. Because of this and because we hope that the lack of inclusion in the current record is simply an oversight, we are sending an updated flashdrive containing clearer versions of the same documents we sent to you on a flashdrive via overnight

delivery on April 29, 2020. We request that the set of documents enclosed with this letter be uploaded in place of the April 29, 2020 set. If you have any questions, please contact us immediately for further clarification of this request.

The entirety of those files must be uploaded and included in the present administrative record and on the City Planning Department's running web page of the ongoing additions to the present administrative record for the Hollywood Center Project DEIR. We would suggest those materials be noted in the description as follows:

- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 1 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 2 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 3 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 4 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 5 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 6 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 7 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 8 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 9 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 10 of 13

- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 11 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 12 of 13
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 13 of 13
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 1 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 2 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 3 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 4 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 5 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 6 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 7 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 8 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 9 of 11
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 (“Original Millennium Case”) 10 of 11

- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 11 of 11

You are required to include all of these documents from the original administrative record in the current administrative record for this Hollywood Center application and Draft EIR, including pursuant to Consolidated Irrigation District:

> "We conclude that the term "submitted to" – which generally means presented or made available for use or study – is concerned with the effort that must be expended by the lead agency in using or studying the "written evidence" presented. (§ 21167.6, subd. (e)(7).) Consequently, we think that the term should be interpreted and applied pragmatically to fairly allocate the burden of handling the written evidence. Applying the term too broadly could place an unacceptable burden on lead agency personnel by requiring them to expend time and limited resources tracking down information that could have been provided more efficiently by the commenter. Based on considerations regarding the allocation of burden, we conclude that "written evidence" has been "submitted to" a lead agency for purposes of section 21167.6, subdivision (e)(7) when the commenter has made the document readily available for use or study by lead agency personnel." Consolidated Irrigation Dist. v. Superior Court (2012) 205 Cal.App.4th 697, 723.
>
> "The third category contains five documents named in the comment letters of CID and the air pollution control district along with a citation to the specific Web page containing the document. We conclude that the information provided made these documents readily available to City personnel. To access the document, the person need only type the URL into a computer connected to the Internet. The document will appear on the computer screen and no further searching is required. Thus, the burden placed on lead agency personnel is minimal when a commenter provides the URL to the specific Web page containing the document." Consolidated Irrigation Dist. v. Superior Court (2012) 205 Cal.App.4th 697, 724-725.

The burden placed on the City is minimal, actually non-existent. We have provided a new flash drive with all of the bates-stamped files comprising the prior administrative record and reference library that the City itself certified. If you have any difficulty accessing or in utilizing the City's own set of the same materials, please promptly advise.

Separately, we requested in our April 20, 2020 email to you that you include in the record an April 19, 2020 LA Times article for which we provided a link. As of today, that article was not included in the record with our email. For your convenience, we are including the complete email and article below this letter. We hope this is also simply an oversight on the part of City Planning, and not an intentional failure to maintain a complete record as is required. Any linked documents referenced in a letter or other document submitted to you must be printed and included for the running record.

Thank you.

Very truly yours,

/s/ Robert P. Silverstein
ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
Encl.: **Updated** Flash drive containing Millennium AR and RL

cc: Mayor Eric Garcetti (mayor.garcetti@lacity.org)
Councilman Mitch O'Farrell (councilmember.ofarrell@lacity.org)
Councilman David Ryu (david.ryu@lacity.org)
Vince Bertoni, Dir. Of City Planning (vince.bertoni@lacity.org)
Kevin Keller, Exec. Officer of City Planning (kevin.keller@lacity.org)

From: Robert Silverstein
To: Mindy Nguyen
CC: Luciralia Ibarra; Veronica Lebron; councilmember.ofarrell@lacity.org; kevin.keller@lacity.org; mayor.garcetti@lacity.org; mindy.nguyen@lacity.org; vince.bertoni@lacity.org
Date: 4/20/2020 2:19 PM
Subject: Hollywood Center: Objection to 45-Day Comment Period for Hollywood Center Draft Environmental Impact Report; Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen:

Thank you. Is my request for tolling or extending the public comment period being considered, and by whom?

Given the current extremely short, 45-day window and the critical issues associated with this project and the pandemic (see Mayor Garcetti's pronouncements as reported in the LA Times today: https://www.latimes.com/california/story/2020-04-19/garcetti-state-of-city-la-address-coronavirus [please print and include the full article as part of this communication for the record]), when can we expect a clear response from City officials to my letter?

As with all my communications, please include this in the record for this matter. Thank you.

Robert P. Silverstein, Esq.
The Silverstein Law Firm, APC
215 North Marengo Avenue, 3rd Floor
Pasadena, CA 91101-1504
Telephone: (626) 449-4200
Facsimile: (626) 449-4205
Email: Robert@RobertSilversteinLaw.com
Website: www.RobertSilversteinLaw.com
==========
The information contained in this electronic mail message is confidential information intended only for the use of the individual or entity named above, and may be privileged. The information herein may also be protected by the Electronic Communications Privacy Act, 18 USC Sections 2510-2521. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone (626-449-4200), and delete the original message. Thank you.

>>>

From: Mindy Nguyen <Mindy.Nguyen@lacity.org>
To: Robert Silverstein <robert@robertsilversteinlaw.com>
CC: Veronica Lebron <Veronica@robertsilversteinlaw.com>, Luciralia Ibarra <luciralia.ibarra@lacity.org>
Date: 4/20/2020 1:53 PM
Subject: Re: Objection to 45-Day Comment Period for Hollywood Center Draft Environmental Impact Report; Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Mr. Silverstein,

Thank you for your email. It has been received and will be noted for the record.

Best,

On Fri, Apr 17, 2020 at 6:55 PM Robert Silverstein <robert@robertsilversteinlaw.com> wrote:

> Dear City Officials:
> Please see attached urgent letter. Please promptly respond. Thank you.
>
> Robert P. Silverstein, Esq.
> The Silverstein Law Firm, APC
> 215 North Marengo Avenue, 3rd Floor
> Pasadena, CA 91101-1504
> Telephone: (626) 449-4200
> Facsimile: (626) 449-4205
> Email: Robert@RobertSilversteinLaw.com
> Website: www.RobertSilversteinLaw.com
> ==========
> The information contained in this electronic mail message is confidential

information intended only for the use of the individual or entity named above, and may be privileged. The information herein may also be protected by the Electronic Communications Privacy Act, 18 USC Sections 2510-2521. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone (626-449-4200), and delete the original message. Thank you.

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LOS ANGELES CITY PLANNING

Mindy Nguyen
City Planner
Los Angeles City Planning
221 N. Figueroa St., Suite 1350
Los Angeles, CA 90012
Planning4LA.org
T: (213) 847-3674
E-NEWS

Garcetti: L.A. is ‘under attack’ and will need to furlough thousands of city workers

In his annual State of the City address, Mayor Eric Garcetti announced plans for furloughs of thousands of city workers.

By David Zahniser, Dakota Smith, Emily Alpert Reyes
April 19, 2020 5:39 PM UPDATED April 19, 2020 | 9:21 PM

Mayor Eric Garcetti warned Sunday that the economic downturn facing Los Angeles will be more painful than the 2008 recession, requiring cuts to government programs and the furlough of thousands of city employees.

In a remarkable State of the City address, one that comes five weeks into the shutdown of many businesses, government buildings and other facilities, Garcetti declared that the city is “under attack” from the coronavirus and the economic fallout that has come with it.

“I’ve never before hesitated to assure you that our city is strong,” he said. “But I won’t say those words tonight. Our city is under attack. Our daily life is unrecognizable.

“We are bowed and we are worn down. We are grieving our dead,” the mayor continued, choking back tears. “But we are not broken.”

The mayor’s remarks represented a jarring break from previous State of the City speeches, when he offered overwhelmingly uplifting messages. In this year’s address, Garcetti offered a series of grim signposts about the city’s immediate future: joblessness, a collapse in hotel reservations and a 95% drop in passenger air travel — all products of the coronavirus outbreak.

The city has already borrowed $70 million from special funds while responding to the health crisis. To balance the city budget, civilian city workers will need to take off 26 unpaid days — the equivalent of a 10% reduction in pay, the mayor said.

“From a fiscal perspective, this is the worst it’s ever been,” he declared.

So far, the city’s political leaders sounded open to the reductions being sought by Garcetti.

Councilman Mike Bonin said that, considering the extent of the economic calamity facing the region, he was relieved that the mayor was not announcing layoffs. Councilman Gil Cedillo described furloughs as the best in a series of bad choices, but worried that residents and city employees would suffer.

“City services are in greater need during a crisis,” said Cedillo, who represents parts of the Eastside.

How acutely the public will feel the cuts is far from clear. Furlough days will not be demanded of police officers, firefighters or workers at the Department of Water and Power, among others. Trash pickup will remain intact, a Garcetti aide said.

The mayor has already closed a number of city facilities to the public, including cultural centers, the Los Angeles Zoo and scores of branch libraries. Some city employees have been reassigned to work in recreation centers operating as makeshift homeless shelters.

One union leader voiced dismay over the cost-cutting plans, saying his members have been called into duty as emergency workers, helping to relocate the city’s homeless population and working at coronavirus testing centers. Adding more instability for those workers will hurt the city, said Bob Schoonover, president of Service Employees International Union Local 721.

“We cannot call these men and women heroes and then turn around and attempt to balance the budget on their backs,” said Schoonover, whose union represents custodians, tree trimmers and others.

Los Angeles Mayor Eric Garcetti, delivering his State of the City speech in a nearly empty City Council chamber, says: "We are bowed and we are worn down. ... But we are not broken."
(Marcus Yam / Los Angeles Times)

Sunday's address comes at an extraordinary time for Garcetti and the city. Over the last five weeks, the mayor has issued emergency orders to close businesses, halt evictions, require face masks, waive parking tickets and generally keep Angelenos away from each other on beaches, hiking trails and in other locations.

With much of the city staying indoors, Sunday's speech bore little resemblance to previous State of the City addresses in L.A. Gone was the color guard, the Pledge of Allegiance and the other ceremonial flourishes that typically accompany Garcetti's yearly address to the city.

In normal years, Garcetti has delivered the address before hundreds of people in packed venues such as the California Science Center and the Valley Performing Arts Center at Cal State Northridge. On Sunday, he spoke inside a mostly empty City Council chamber, with even council members staying at home.

People watch as Los Angeles Mayor Eric Garcetti gives his annual 'State of the City' speech at City Hall in Los Angeles.
(Marcus Yam/Los Angeles Times)

As a result, the event felt closer to one of the many evening coronavirus briefings given by Garcetti since mid-March. However, the overall message was more grim, with Garcetti saying the city would need major help from the federal government to weather the crisis.

"Don't bail out banks but leave cities with cuts and collapse," he said.

Garcetti said Congress should pass a national infrastructure bill to put people back to work. And he called on the federal government to loosen restrictions on emergency funds that prevent the city from using them to replace lost revenue.

The coronavirus outbreak and accompanying economic downturn pose by far the biggest challenge to Garcetti and other city leaders since the 2008 recession. During that crisis, the city's elected officials responded by imposing furloughs, laying off hundreds of workers and eliminating thousands of jobs.

"Until now, it was the biggest economic blow of our lifetime, and it hurt," Garcetti said. "But there's no way to sugarcoat this. This is bigger. It will hurt more."

Revenue for the coming budget year could be as much as $598 million below projections, depending on how long Angelenos continue staying indoors, according to figures released last week by City Controller Ron Galperin.

Much of the reductions have been caused by the steep drop-off in tourism activity, including a major decline in projected hotel bed taxes, Galperin said. Since stay-at-home orders were issued across the state, unemployment claims have skyrocketed, with workers in the entertainment, hospitality and travel industries hit particularly hard.

Garcetti is scheduled to release his proposed budget Monday. The document, which covers spending for the fiscal year that starts July 1, must be approved by the City Council before it can go into effect.

Hollywood resident Kat DeVoe-Peterson joined other protesters outside Getty House on Sunday night. Activists want Los Angeles Mayor Eric Garcetti to cancel rent payments across the city, and take over hotels and fill vacant rooms with homeless Angelenos.
(Dakota Smith/ Los Angeles Times)

While Garcetti delivered his address, activists staged a protest outside Getty House, the mayor's official residence in Windsor Square, calling on him to use his emergency powers to order the cancellation of rent payments and fill vacant hotels with homeless Angelenos.

As drivers repeatedly honked their horns, dozens of sidewalk protesters from the Los Angeles Tenants Union and other groups chanted, “No rent, no rent!” Hollywood resident Kat DeVoe-Peterson, who was recently laid off from her job at a bar in Silver Lake, said Garcetti needs to secure federal funding for renters in the city.

“It’s not just about me, it’s about everyone,” said DeVoe-Peterson, driving a car with the sign “Food Not Rent.”

Josh Rubenstein, a Los Angeles Police Department spokesman, said 11 citations were issued during Sunday’s protest. Some drivers who repeatedly honked their horns were cited for violating an “amplified sound” ordinance. Two protesters on the sidewalk were also detained and cited, police said.

Garcetti said in recent weeks that he has been pressing lawmakers in Washington, D.C., to approve a stimulus package that safeguards both renters and landlords from a massive financial collapse. During his address, he said federal funds should specifically be used to back the suspension of rents and mortgages.

The mayor said the federal government also needs to tackle problems that hurt Americans well before the coronavirus outbreak — depressed wages, crippling college debt, a lack of access to healthcare.

“We must ask of our city and our nation at this time, is ‘normal’ really what we want to come back to?” he asked.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 4

LOS ANGELES CITY
ETHICS COMMISSION

SEP 09 2013

RECEIVED

Los Angeles City Ethics Commission

Complaint Form

The Ethics Commission has the authority to investigate violations of state and City laws regarding campaign financing, lobbying, and governmental ethics. Complaints regarding other laws are referred to appropriate agencies. This complaint form does not constitute a written request to commence a civil action under Los Angeles Municipal Code sections 49.5.19(B)(3) or 49.7.38(B)(3). If you have a question regarding whether your complaint is within our jurisdiction, please contact us.

You may make your complaint anonymously. If you do give us your name, we will not release it unless we receive your permission, we refer the complaint to another appropriate agency, or we are ordered by a court to release it. You are protected against retaliation for blowing the whistle on your coworkers and superiors.

Investigations can be complex and can take many months to complete. We do not confirm or deny the existence of any complaint or investigation, and we do not provide updates on the status of complaints. We will not contact you unless we need additional information.

Please provide the information requested below. The more information you give, the more helpful your complaint will be. Thank you for taking the time to submit your complaint.

Your name*: George Abrahams

Your address*: 3150 Durand Drive, Los Angeles, CA 90068

Your phone number*: 323 463 9209

Your email address*: ggg@copper.net

Name of person who allegedly violated the law: Raymond Chan

Title of that person: Interim General Manager

Place of that person's employment: Los Angeles Department of Building and Safety

Laws that were allegedly violated: Possible violations of conflict-of-interest, money-laundering and ethics rules.

Nature of complaint (with as much detail as possible, including dates, names, etc.):

See complaint and attachments

Complaint - 4 pages

Exhibits - 9 pages

CEQA Petition - Case No. BS 144 606 - 58 pages

Names and contact information of persons who may have helpful information:

Raymond Chan and Jeremy Chan

DECLARATION*

I certify under penalty of perjury under the laws of the state of California that the information above is true and correct.

Date: September 9, 2013 Signature:

At: Los Angeles, CA Name: George Abrahams

**Optional*

Please attach additional sheets, if necessary.

Please attach copies of any available documentation regarding the alleged violation.

Please submit this form and all attachments to the Ethics Commission:

By Email: ethics.commission@lacity.org

By Mail: Enforcement Division
200 North Spring Street, 24th Floor
Los Angeles CA 90012

By Fax: (213) 978-1988

ETHICS COMPLAINT

I strongly urge the City Ethics Commission (the "Commission") to investigate troubling circumstantial evidence that Raymond Chan, the interim general manager of the City's Department of Building and Safety (DBS), violated conflict-of-interest, money-laundering and city ethics rules regarding high official political activities.

I have it on excellent authority that Raymond Chan is the father of Jeremy B. Chan (see attached Clark County, Nevada assessor's office record).

Recently I learned of allegations that Chan's son, Jeremy Chan, had a business relationship with the law firm of Sheppard Mullin.

I followed up on these reports because of my concerns about the integrity of DBS's review of the earthquake safety issues surrounding the controversial Millennium Hollywood project. Jerold Neuman is the lead attorney at Sheppard Mullin representing Millennium Partners, LLC, the developer of the project.

A Google search revealed a list of attendees to a Feb. 28, 2013 Urban Land Institute (ULI) conference on the "Art of Development." That list shows a "Jeremy Chan" representing the law firm of Sheppard Mullin as an attendee. The Sheppard Mullin website does not list a "Jeremy Chan" as an attorney at the firm and the California State Bar website does not show a "Jeremy Chan" registered to practice law in the State of California.

A copy of that attendees list is attached as is a summary of the proposed seminar/conference.

That ULI list also shows this same Jeremy Chan identified himself as a Monterey Park resident. I have it on excellent authority that Raymond Chan, the DBS interim general manager, lives at 1585 Kempton Ave., Monterey Park. Clark County, Nevada assessor's records (see attached) show that as of at least 4/24/2010 Jeremy Chan was also identified as residing at the same Kempton Ave. address.

It would certainly have the appearance of a conflict-of-interest for Raymond Chan to oversee and make critical administrative decisions regarding the Millennium

Project if his son were simultaneously working for Sheppard Mullin, the project's chief advocate at City Hall.

In fact, I now know, based on emails obtained through the California Public Records Act, that in March 2012 Raymond Chan, as DBS's executive officer (the top lieutenant to then-GM Bud Ovrom), was very much in the loop about the Millennium project.

It is alleged in a lawsuit (*StopTheMillenniumHollywood.com, et al, vs. City of Los Angeles*, Los Angeles County Superior Court Case No. BS 144 606) to which I am a party that DBS falsified or approved the falsification of reports and the suppression of key seismic data in order to mislead the public about the proximity of the Hollywood Fault to the proposed Millennium development. Notable seismic experts strongly believe that the fault runs through the project site, while the developer and the City deny that this is the case. The proximity of the fault to the project has a huge bearing on the project's future and its safety and has been the subject of considerable public controversy and debate.

A copy of the lawsuit is attached. Note in particular Paragraphs 92-113.

In a March 15, 2012 email, Raymond Chan was informed by Alfred Fraijo, Jr., a member of the Sheppard Mullin law firm, that a discussion about the possibility of an earthquake fault running through the Millennium property was initiated by City geologist Dana Prevost. Fraijo asked Chan for information about the City's rules about building near an earthquake fault zone. Within two hours, Chan emailed Fraijo: "We are working on this and will get back to you tomorrow." The next day (March 16, 2012) a member of Chan's staff, Charmie Huynh, emailed Chan (and cc'd Fraijo and Jerold Neuman of the Sheppard Mullin law firm) to confirm that Prevost had met with the "project team to discuss the Hollywood Fault line that could potentially be crossing the [Millennium] property" and that city staff would be requiring that the developer conduct a study to determine if the fault, in fact, crossed its property. Chan emailed a reply acknowledging his receipt of that information.

Copies of these emails are attached.

In our lawsuit, it has been alleged that the subsequent fault study found evidence of a possible fault on the site. However, this critical study was illegally covered up and hidden from the public in the project's Environmental Impact Report (EIR) that was, at that time, being drafted.

The precise role Chan played, if any, in this illegal cover-up of critical information remains to be determined. But it is clear that Chan was "in the loop" about this project.

I do not know for a fact that the Jeremy Chan who identified himself as a Sheppard Mullin representative is the son of Raymond Chan. However, I believe the strong possibility that he is Raymond Chan's son demands the Commission's immediate attention.

I also have learned of allegations that Chan's son may have made substantial financial contributions to City candidates.

Upon inspecting City campaign finance records, I found that a "Jeremy Chan," identified as a student from Monterey Park (Chan's DOB is Sept. 8, 1989), contributed $2,600 to Wendy Greuel's campaign for mayor ($1,300 on 9/30/12 and another $1,300 on 3/6/13). On 6/6/13, a "Jeremy Chan," also a student from Monterey Park, gave $1,300 to mayor-elect Eric Garcetti. On 7/17/13, a "Jeremy B. K. Chan," identified as a student from Monterey Park, contributed $700 to City Council candidate Cindy Montanez. It is noteworthy that the San Bernardino Superior Court has confirmed that a "Jeremy BingKun Chan" – with an address of 1585 Kempton Ave., Monterey Park - was issued a traffic ticket in case MO00724721JC in 2009. Could the middle name "BingKun" account for the initials "B. K." or is this just a very unusual coincidence?

A copy of the aforementioned campaign contributions – derived from the Commission's own campaign disclosure website – is attached as is a copy of the aforementioned traffic ticket.

I have also been informed that voter records do not show a "Jeremy Chan," a "Jeremy B. Chan" or a "Jeremy B.K. Chan" to be a registered voter in Los Angeles County.

So who is this mysterious student from Monterey Park who contributed $4,600 to city candidates but is not registered to vote in Los Angeles County and only in the past 12 months became a political contributor? (Commission records show no evidence of a Jeremy Chan making campaign contributions except for the four contributions cited above)?

I do not know. But I urge the City Ethics Commission to find out.

It is illegal for anyone to be reimbursed for his/her campaign contributions, to make contributions using other people's money or to make contributions on behalf of someone else (unless the true source of the funds is separately identified).

City Council files (copy attached) show Raymond Chan was appointed DBS interim general manager on May 10, 2013. City Ethics Commission rules also *forbid* a City general manager from asking others to make a political contribution. The contributions made by a "Jeremy Chan" to Garcetti and by a "Jeremy B.K. Chan" to Montanez occurred after Raymond Chan became general manager.

In summary, I urge the City Ethics Commission to immediately investigate if Raymond Chan's son worked for Sheppard Mullin. If he did, while his father was involved in DBS decision-making regarding the Millennium project (Sheppard Mullin's client), I believe that would constitute, at the very least, the appearance of a serious conflict-of-interest on the part of Raymond Chan.

I also strongly urge the Commission to immediately investigate if the Jeremy Chan who contributed to the aforementioned campaigns is Raymond Chan's son. If he is, I urge the Commission to immediately determine if Raymond Chan was the actual source of all or a portion of those $4,600 in contributions and thus violated anti-money laundering laws and if Raymond Chan prompted his son's contribution of $1,300 to Garcetti or his $700 contribution to Montanez in violation of City rules that bar City general managers from "ask[ing] someone to make a contribution" or "act[ing] as an agent or intermediary in the making of a contribution."

Urban Land Institute

Attendee List: ULI Los Angeles: YLG - Art of Development Part 1: Understanding and Navigating the Entitlement Process

Name	Company	City	State	Country
Alvarez, Yenzi	Primestor Development	Los Angeles	CA	UNITED STATES
Beaulieu, Jeff	Karlin Real Estate	Santa Monica	CA	UNITED STATES
Breckheimer, Peter	Glaser, Weil, Fink, Jacobs, Howard & Shapiro, LLP	Los Angeles	CA	UNITED STATES
Breskal, Saul	Glaser Weil Fink Jacobs Howard & Shapiro	Los Angeles	CA	UNITED STATES
Chan, Jeremy	Sheppard Mullin Richter & Hampton, LLP	monterey park	CA	UNITED STATES
Christian, Adam	Sharon Greene + Associates	Pacific Palisades	CA	UNITED STATES
Chun, William	Capri Capital Partners	Los Angeles	CA	UNITED STATES
Colich, J., Michael	CBRE	Rancho Palos Verdes	CA	UNITED STATES
DiSilva, Michael		Los Angeles	CA	UNITED STATES
DuBois, Jesse	Farmscape	Los Angeles	CA	UNITED STATES
Dupree, Jeremy	Astani Enterprises, Inc.	Beverly Hills	CA	UNITED STATES
Eisenberg, Adam	Bolour Associates	Los Angeles	CA	UNITED STATES
Enayati, Herman	Kennerly, Lamishaw & Rossi LLP	Los Angeles	CA	UNITED STATES
Erwell, Travis	Primestor Development	Los Angeles	CA	UNITED STATES
Filler, Alex	University of Southern California	Los Angeles	CA	UNITED STATES
Gallinaro, Mark, J.	UCLA Anderson	Los Angeles	CA	UNITED STATES
Gasper, Candice	Andersen Environmental	Los Angeles	CA	UNITED STATES
Gordon, Chad	Private Family Office	Los Angeles	CA	UNITED STATES
Grant, Evan	UCLA Ziman Center for Real Estate	Sacramento	CA	UNITED STATES
Hay, Alex		Los Angeles	CA	UNITED STATES
Horning, Benjamin, Michael	Xebec Building Company	Los Angeles	CA	UNITED STATES
Howell, Matthew, T.	PMRG/American Realty Advisors	Los Angeles	CA	UNITED STATES
Ironi, Jason	Andersen Environmental, Inc.		CA	UNITED STATES
Janda, Jason	R.W. Selby & Company, Inc.	Los Angeles	CA	UNITED STATES
Keyes, Brad		Beverly Hills	CA	UNITED STATES
Leishman, Bryan	R. W. Selby & Co.	Los Angeles	CA	UNITED STATES
Makker, Sonam	Gibson, Dunn	Los Angeles	CA	UNITED STATES
Mattison, Craig	AEW Capital Management	Los Angeles	CA	UNITED STATES
Mazler, Haggai	GM Engineering	Los Angeles	CA	UNITED STATES
Meyers, Adam	Rudoy Fleck, a PLC	Los Angeles	CA	UNITED STATES
Midzi, Nash	Colliers International	Los Angeles	CA	UNITED STATES
Mimms, John		Los Angeles	CA	UNITED STATES
Morse, Russell	Truman & Elliott LLP	Los Angeles	CA	UNITED STATES
Owen, Jacob	Ensemble Investment	Los Angeles	CA	UNITED STATES
Paddock, Alec	CenterCal Properties	El Segundo	CA	UNITED STATES
Powell, Thomas		Los Angeles	CA	UNITED STATES
Ramirez, Jessica	Primestor Development, Inc.	Los Angeles	CA	UNITED STATES
Rapisardi, Marc, John		Burbank	CA	UNITED STATES
Rodriguez, Enrique	Sheppard Mullin Richter & Hampton, LLP	Los Angeles	CA	UNITED STATES
Russell, Bryan	Comerica Bank	Santa Monica	CA	UNITED STATES
Schon, Paul	RuMex Development Group	Los Angeles	CA	UNITED STATES
Shapiro, Dorian	PM Realty Group	Los Angeles	CA	UNITED STATES
Singh, Divjot	Drapac Group	Los Angeles	CA	UNITED STATES
Smith, Almuhtada	REAP - LA	Beverly Hills	CA	UNITED STATES
Sutanto, Shienny	TCA Architects	Los Angeles	CA	UNITED STATES
Taylor, Judith	Pro Forma Advisors	Los Angeles	CA	UNITED STATES
Tepler, Artem	RuMex	Los Angeles	CA	UNITED STATES
Tiradi, Florence	S3 Builders, Inc.	Burbank	CA	UNITED STATES
Wade, Patrick	Marcus & Millichap Real Estate Investment Services	Hermosa Beach	CA	UNITED STATES
Waite, Marie, N.	Los Angeles County Department of Regional Planning	Los Angeles	CA	UNITED STATES
Warren, Andrea	Alston & Bird	Los Angeles	CA	UNITED STATES
Whigham, Nathan	Nebo Capital, Inc.	Los Angeles	CA	UNITED STATES
Wittmann, Greg	USC Law	Los Angeles	CA	UNITED STATES
Young, Glenn	Bolour & Associates	Los Angeles	CA	UNITED STATES

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February 28, 2013

YLG: Art of Development Part 1: Understanding and Navigating the Entitlement Process

Join us for the first program in the Art of Development Series. This program will begin with an overview of the land use entitlement process. Then, using a variety of mixed-use, residential and commercial projects as case studies, the program will explore how high profile projects have been able to navigate the entitlement process.

Date: February 28, 2013 5:45 pm

Speaker

Craig Lawson, President, Craig Lawson & Co., LLC, Land Use Consultants

The Art of Development is a multi-part series of programs, case studies, presentations and site tours led by LA's leading real estate experts. The goal of the program is to further educate ULI members on the various aspects of the development process. Additional programs will focus on the planning, financial feasibility, leasing, market analysis, construction and finance aspects of development.

Parking

Parking is not included. We suggest parking at the Westfield Century City Shopping Center. Parking is $1 per hour for the first 3 hours.

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Marcus & Millichap
Real Estate Investment Services

Annual YLG Sponsors

HUB International

(2)

From: Raymond Chan <raymond.chan@lacity.org>
Sent: Friday, March 16, 2012 2:14 PM
To: Charmie Huynh; jneuman@sheppardmullin.com; afraijo@sheppardmullin.com
Subject: Re: 1750 North Vine Street
Attachments: Outlook.jpg

Thank you Charmie!!!

On Fri, Mar 16, 2012 at 8:19 AM, Charmie Huynh <charmie.huynh@lacity.org> wrote:
Hi Ray,

I spoke to Dana Prevost regarding the Millenium project at 1750 N Vine St. He mentioned that he met with the project team to discuss the Hollywood Fault line that could potentially be crossing the property. Here are some bullet points on what we discussed:

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- Per the Alquist Priolo Earthquake Fault Zoning Act, no structure for human occupancy shall be permitted to be placed on or across an active fault trace. I've attached a copy of our info bulletin and highlighted this condition (#2). It also describes a min 50' no build zone. However, Dana discussed with the project team that he has granted one modification in the past on another project that allowed them to build right adjacent to the fault line.

Please let me know if you have any questions.

Thanks,

Charmie Huynh, P.E.
Structural Engineering Associate / Case Manager
Development Services Case Management
City of Los Angeles - Department of Building and Safety
201 N Figueroa St, Suite 1030
Los Angeles, CA 90012
T: (213) 482-6875
F: (213) 482-6874
E: Charmie.Huynh@lacity.org

On Thu, Mar 15, 2012 at 12:50 PM, Raymond Chan <raymond.chan@lacity.org> wrote:
Hi Alfred,

We are working on this and will get back to you tomorrow.

(3) Exhibit 1

From: Raymond Chan <raymond.chan@lacity.org>
Sent: Thursday, March 15, 2012 12:50 PM
To: Alfred Fraijo Jr.
Cc: Charmie Huyhn
Subject: Re: 1750 North Vine Street
Attachments: Outlook.jpg

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Ray

On Thu, Mar 15, 2012 at 11:04 AM, Alfred Fraijo Jr. <afraijo@sheppardmullin.com> wrote:
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We are looking for information on the building code regulations that apply to development within a fault zone or prohibitions on development related to fault areas. We were informed by Mr. Dana Prevost that a limited fault investigation would be required in the portion of the subject site. There is a Hollywood Fault trace mapped by the California Geological Survey that prompted the discussion with Mr. Prevost.

The property extends on two adjacent sites along Vine Street and is generally bounded by Yucca Street, Argyle Avenue and Ivar. Below is a general map of the site.

Thank you in advance for your assistance.

(4)

Exhibit 2

[Print| Excel | Close] [Page: >>]

Date	Contributor	Candidate/ Officeholder	Schedule (Type)	Amount
09/30/12	**Jeremy Chan** (Student, N/A) Monterey Park, CA 91755	**Wendy Greuel** Mayor 1337185 - Wendy Greuel for Mayor 2013	A - Monetary Contribution Received (IND - Individual) [*Period:* 07/01/12 to 09/30/12]	$1,300.00
03/06/13	**Jeremy Chan** (Student, N/A) Monterey Park, CA 91755	**Wendy Greuel** Mayor 1356050 - Wendy Greuel for Mayor 2013 - General	A - Monetary Contribution Received (IND - Individual) [*Period:* 01/01/13 to 04/06/13]	$1,300.00 [*Election:*05/21/13]
06/06/13	**JEREMY CHAN** (STUDENT, NONE) MONTEREY PARK, CA 91755	**ERIC GARCETTI** Mayor 1341339 - GARCETTI FOR MAYOR 2013	A - Monetary Contribution Received (IND - Individual) [*Period:* 05/16/13 to 06/30/13]	$1,300.00 [*Election:*03/05/13]
07/17/13	**Jeremy B. K. Chan** (Student, N.A.) Monterey Park, CA 91755	**Cindy Montanez** Council Member - District 6 1358024 - Cindy Montanez For City Council 2013-General	A - Monetary Contribution Received (IND - Individual) [*Period:* 07/07/13 to 07/17/13]	$700.00 [*Election:*07/23/13]
			Total Monetary Contributions (A):	**$4,600.00** (does not include unitemized)
			Total Amount Received:	**$4,600.00**

[Print | Excel | Close] [Page: >>]

5

Michele W. Shafe, Assessor

REAL PROPERTY PARCEL RECORD

Click Here for a Print Friendly Version

Assessor Map | Aerial View | Building Sketch | Ownership History | Neighborhood Sales | New Search

GENERAL INFORMATION	
PARCEL NO.	138-27-215-015
OWNER AND MAILING ADDRESS	CHAN RAYMOND S & SARAH C CHAN JEREMY B 1585 KEMPTON AVE MONTEREY PARK CA 91755-5609
LOCATION ADDRESS CITY/UNINCORPORATED TOWN	1004 OLVERA WAY LAS VEGAS
ASSESSOR DESCRIPTION	TENNINGTON RIDGE-PHASE 3 PLAT BOOK 55 PAGE 62 LOT 9 BLOCK 3 SEC 27 TWP 20 RNG 60
RECORDED DOCUMENT NO.	* 20101008:02072
RECORDED DATE	10/08/2010
VESTING	JOINT TENANCY

*Note: Only documents from September 15, 1999 through present are available for viewing.

ASSESSMENT INFORMATION AND SUPPLEMENTAL VALUE	
TAX DISTRICT	200
APPRAISAL YEAR	2012
FISCAL YEAR	13-14
SUPPLEMENTAL IMPROVEMENT VALUE	0
SUPPLEMENTAL IMPROVEMENT ACCOUNT NUMBER	N/A

REAL PROPERTY ASSESSED VALUE		
FISCAL YEAR	2012-13	2013-14
LAND	7700	7700
IMPROVEMENTS	28807	29604
PERSONAL PROPERTY	0	0
EXEMPT	0	0
GROSS ASSESSED (SUBTOTAL)	36507	37304
TAXABLE LAND+IMP (SUBTOTAL)	104306	106583

6

COMMON ELEMENT ALLOCATION ASSD	0	0
TOTAL ASSESSED VALUE	36507	37304
TOTAL TAXABLE VALUE	104306	106583

Click here for Treasurer Information regarding real property taxes.

Click here for Flood Control Information.

ESTIMATED LOT SIZE AND APPRAISAL INFORMATION	
ESTIMATED SIZE	0.11 Acres
ORIGINAL CONST. YEAR	1994
LAST SALE PRICE MONTH/YEAR	121500 10/10
LAND USE	1-10 RESIDENTIAL SINGLE FAMILY
DWELLING UNITS	1

PRIMARY RESIDENTIAL STRUCTURE					
TOTAL LIVING SQ. FT.	1684	**CARPORT SQ. FT.**	0	**ADDN/CONV**	NONE
1ST FLOOR SQ. FT.	968	**STORIES**	TWO STORY	**POOL**	NO
2ND FLOOR SQ. FT.	716	**BEDROOMS**	3	**SPA**	NO
BASEMENT SQ. FT.	0	**BATHROOMS**	2 FULL 1 HALF	**TYPE OF CONSTRUCTION**	FRAME STUCCO
GARAGE SQ. FT.	508	**FIREPLACE**	0	**ROOF TYPE**	CONCRETE TILE
CASITA SQ. FT.*	0				

*Note: Casita square footage not included in Total Living square footage.

ASSESSORMAP VIEWING GUIDELINES	
MAP	138272
	In order to view the Assessor map you must have Adobe Reader installed on your computer system. If you do not have the Reader it can be downloaded from the Adobe site by clicking the following button. Once you have downloaded and installed the Reader from the Adobe site, it is not necessary to perform the download a second time to access the maps.

NOTE: THIS RECORD IS FOR ASSESSMENT USE ONLY. NO LIABILITY IS ASSUMED AS TO THE ACCURACY OF THE DATA DELINEATED HEREON.

FORM GEN. 160

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

Date: June 6, 2013

To: The City Council

From: Miguel A. Santana, City Administrative Officer

Subject: **SALARY FOR THE INTERIM GENERAL MANAGER LOS ANGELES DEPARTMENT OF BUILDING AND SAFETY**

On June 3, 2013, the Executive Employee Relations Committee vote to approve the Mayor's salary recommendation for Mr. Raymond Chan as the Interim General Manager of the Los Angeles Department of Building and Safety. The effective date of the appointment and salary is May 10, 2013.

MAS:EAG:07130126b

8

Charges

Defendant 1 of 1

Case MO00724721JC Defendant 3165799 CHAN, JEREMY BINGKUN

Filed Charges						
Count	*Charge*	*Severity*	*Description*	*Violation Date*	*Plea*	*Status*
1	VC I22349(A)	I	EXCEEDING 65 MPH	04/24/2009	NOT GUILTY	DISMISSED

9

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 5

From: Raymond Chan <raymond.chan@lacity.org>
Sent: Friday, March 16, 2012 2:14 PM
To: Charmie Huynh; jneuman@sheppardmullin.com; afraijo@sheppardmullin.com
Subject: Re: 1750 North Vine Street
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Structural Engineering Associate / Case Manager
Development Services Case Management
City of Los Angeles - Department of Building and Safety
201 N Figueroa St, Suite 1030
Los Angeles, CA 90012
T: (213) 482-6875
F: (213) 482-6874
E: Charmie.Huynh@lacity.org

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Thank you in advance for your assistance.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 6

USGS
science for a changing world

Prepared in cooperation with California Geological Survey

2018 U.S. Geological Survey–California Geological Survey Fault-Imaging Surveys Across the Hollywood and Santa Monica Faults, Los Angeles County, California

By Rufus D. Catchings, Janis Hernandez, Mark R. Goldman, Joanne H. Chan, Robert R. Sickler, Brian Olson, and Coyn J. Criley

Open-File Report 2020–1049

U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
DAVID BERNHARDT, Secretary

U.S. Geological Survey
James F. Reilly II, Director

U.S. Geological Survey, Reston, Virginia: 2020

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Suggested citation:
Catchings, R.D., Hernandez, J., Goldman, M.R., Chan, J.H., Sickler, R.R., Olson, B., and Criley, C.J., 2020, 2018 U.S. Geological Survey–California Geological Survey fault-imaging surveys across the Hollywood and Santa Monica Faults, Los Angeles County, California: U.S. Geological Survey Open-File Report 2020–1049, 42 p., https://doi.org/10.3133/ofr20201049.

Associated data for this publication:
Goldman, M.R., Catchings, R.D., Chan, J.H., Sickler, R.R., Criley, C.C., Hernandez, J.L., and Olson, B., 2020, Data release for the 2018 U.S. Geological Survey–California Geological Survey fault-imaging surveys across the Hollywood and Santa Monica Faults, Los Angeles County, California: U.S. Geological Survey data release, https://doi.org/10.5066/P9ENA8D4.

ISSN 2331-1258 (online)

Acknowledgments

Partial funding for this work was provided by the California Geological Survey (CGS). We thank CGS for identifying and securing the investigative fault sites. We thank Deshawn Brown, Michael DeFrisco, Erik Frost, Maxime Mareschal, Gordon Seitz, Brian Swanson, and Christopher Tran of the California Geological Survey for assistance in acquiring the data for this report. We thank the First Presbyterian Church of Hollywood, the City of Los Angeles, and the City of Beverly Hills for access. We thank Yong-Gang Li of the University of Southern California, and Walter Mooney of the U.S. Geological Survey (USGS), for reviewing the manuscript.

We thank the following USGS scientists: Kerri Gefeke, Dan Langermann, Belle Philibosian, and Ali Pickering; we also thank USGS volunteers Joseph Catchings, Shirley Imsand, Richard Philibosian, and Nathan Suits, for assistance in acquiring the data for this report. We thank Shane Detweiler, Mike Diggles, and Taryn Lindquist (all USGS) for editing and formatting and reviewing.

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Conversion Factors

International System of Units to U.S. customary units

Multiply	By	To obtain
	Length	
centimeter (cm)	0.3937	inch (in.)
millimeter (mm)	0.03937	inch (in.)
meter (m)	3.281	foot (ft)
kilometer (km)	0.6214	mile (mi)
	Flow rate	
meter per second (m/s)	3.281	foot per second (ft/s)
	Mass	
kilogram (kg)	2.205	pound avoirdupois (lb)

Abbreviations

1-D	one dimensional
2-D	two dimensional
AGC	automatic gain control
AWD	accelerated weight drop
CGS	California Geological Survey
HGW1	Hollywood guided-wave survey 1
HGW2	Hollywood guided-wave survey 2
HGW3	Hollywood guided-wave survey 3
HRR1	Hollywood refraction-reflection survey 1
HRR2	Hollywood refraction-reflection survey 2
HW1	Hollywood seismic profile 1 (P-wave survey)
HW2	Hollywood seismic profile 2 (S-wave survey)
HW3	Hollywood seismic profile 3 (P-wave survey)
Hz	hertz
MASW	multichannel analysis of surface waves
MAS_LW	MASW for Love waves
MAS_RW	MASW for Rayleigh waves
PGV	peak ground velocity
V_P	P-wave or compressional-wave velocity
V_P/V_S ratio	ratio of P-wave velocity to S-wave velocity
V_S	S-wave or shear-wave velocity
USGS	U.S. Geological Survey
UTC	coordinated universal time

2018 U.S. Geological Survey–California Geological Survey Fault-Imaging Surveys Across the Hollywood and Santa Monica Faults, Los Angeles County, California

By Rufus D. Catchings,[1] Janis Hernandez,[2] Mark R. Goldman,[1] Joanne H. Chan,[1] Robert R. Sickler,[1] Brian Olson,[2] and Coyn J. Criley[1]

Abstract

We acquired multiple types of seismic data across the Hollywood Fault in Hollywood, Calif., and the Santa Monica Fault in Beverly Hills, Calif., in May and June 2018. On the basis of our data, we infer near-surface locations of various traces of these faults.

From two separate profiles across the Hollywood Fault, we evaluated multiple seismic datasets and models, including guided-wave data, tomographic V_P data, tomographic V_S data, V_P/V_S and Poisson's ratio models derived from tomographic V_P and V_S data, Rayleigh-wave–based V_S models, Love-wave–based V_S models, V_P/Vs and Poisson's ratio models (derived from combinations of tomographic-based V_P and surface-wave–based V_S models), P-wave reflection images, and S-wave reflection images. All of these data and models can be used to delineate near-surface faulting, and the data consistently infer near-surface fault traces of the Hollywood Fault in the same locations. Importantly, the combined data indicate more than one near-surface fault trace of the Hollywood Fault. Between North Bronson and North Gower Avenues, evidence exists for a near-surface trace of the Hollywood Fault slightly south of Carlos Avenue. Farther west, along Argyle Avenue, our data contain high levels of cultural noise, but we interpret near-surface faulting slightly south of the intersection of Carlos and Argyle Avenues and between Carlos Avenue and Yucca Street.

For the Santa Monica Fault in Beverly Hills, we acquired guided-wave data only along Lasky Drive between Moreno Drive and South Santa Monica Boulevard, owing to limited access permissions. However, we used two separate source locations to generate the guided-wave data (SP1 and SP2). The data from more distant source location (relative to the recording array, SP1) were noisy, but on the basis of those data, we infer near-surface faulting at several locations along Lasky Drive, with concentrated near-surface faulting slightly south of the intersection of Lasky Drive and Charleville Boulevard. Guided-wave data generated at the closer source location (relative to recording array, SP2) more clearly show evidence for distributed near-surface faulting at several locations along Lasky Drive, with concentrated faulting near the intersection of Lasky Drive and Charleville Boulevard.

Although the seismic surveys across both faults provide strong evidence for the locations of near-surface fault traces, the seismic data provide little or no information about the rupture history of the fault traces.

Introduction

In May and June 2018, the U.S. Geological Survey (USGS) and the California Geological Survey (CGS) jointly conducted a series of seismic investigations in Los Angeles County, Calif., that

[1]U.S. Geological Survey
[2]California Geological Survey

were aimed at locating near-surface traces of the Hollywood Fault in Hollywood, Calif., and the Santa Monica Fault in Beverly Hills, Calif. (fig. 1). For the Hollywood Fault, we acquired four seismic surveys along two transects, from which we evaluated five types of seismic data, as well as multiple data combinations that can be used to evaluate near-surface faulting. We used active sources to generate body waves, surface waves, and guided waves, and from those data, we evaluated (1) P-wave velocities (V_P), S-wave velocities (V_S), and their ratios using tomography, (2) S-wave velocities (V_S) using multichannel analysis of surface waves (MASW) on Rayleigh and Love waves, (3) peak ground velocities (PGV) of guided waves, (4) reflection images, and (5) combinations of those data. For the Santa Monica Fault, we acquired two guided-wave seismic surveys along Laskey Drive, from which we evaluated PGV of guided waves. In this report, we present images, models, and interpretations for the acquired data.

Seismic Methodologies

Faulting produces physical effects in the shallow subsurface that can be observed using multiple seismic-imaging methods. Although various types of seismic data can be affected differently by near-surface faulting, those effects generally occur within the fault zone at the same locations. As a result, using multiple seismic datasets can provide greater confidence in the locations of near-surface faults.

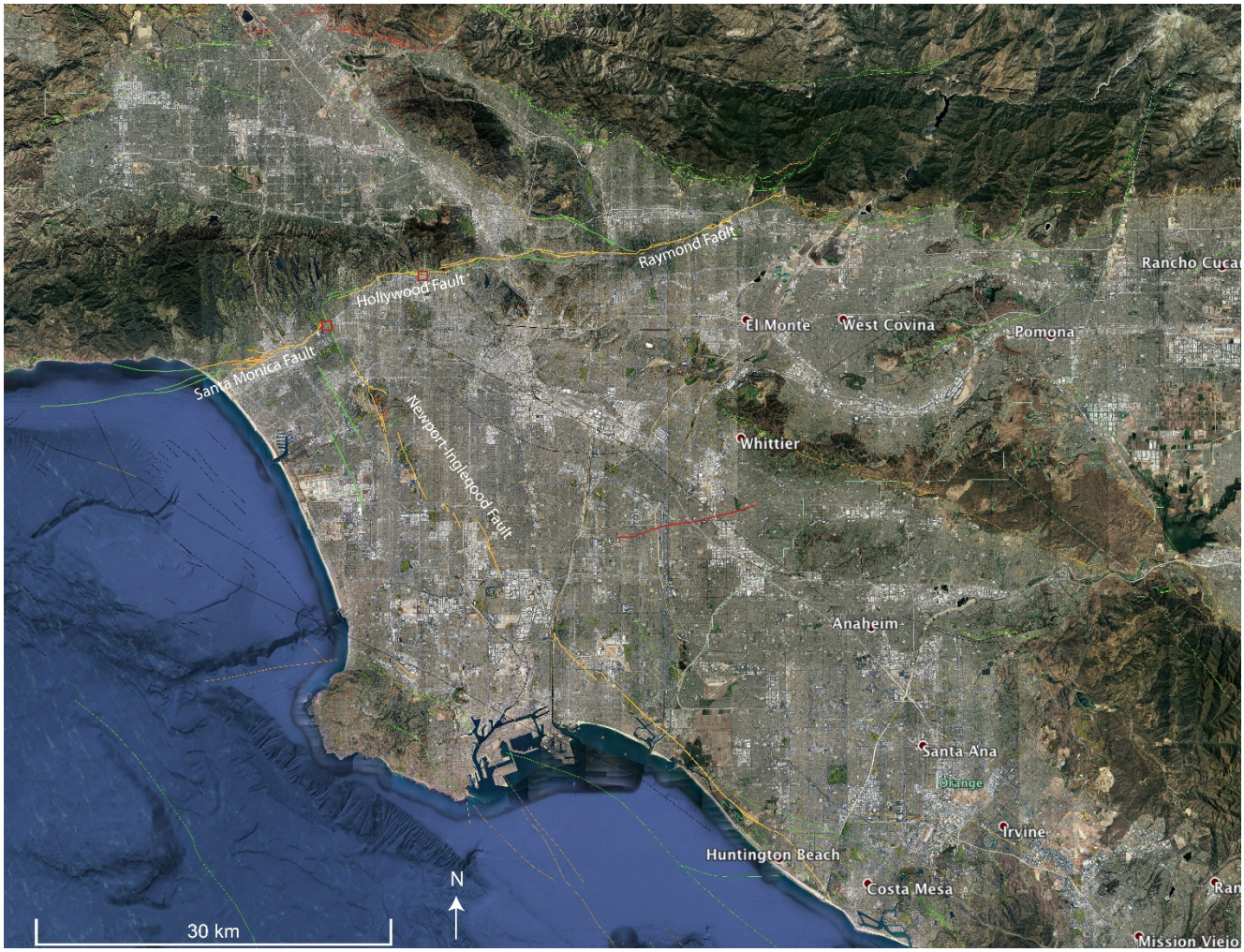

Figure 1. Mosaic of Google Earth images of the greater Los Angeles area, showing locations of the Hollywood Fault, Santa Monica Fault, and other faults. Small red rectangles indicate locations of Hollywood and Beverly Hills seismic profiles. Red lines show locations of historic faulting. Abbreviation: km, kilometer(s).

Here, we briefly describe some of these effects and how they relate to the seismic methods used in this investigation.

Shearing during the faulting process reduces the rigidity of faulted rocks and materials. As a result, both P- and S-wave velocities (V_P and V_S, respectively) decrease within fault zones relative to the surrounding rock mass. Empirical studies using laboratory data (Wang and others, 1978), active-source refraction data (Healy and Peake, 1975; Mooney and Luetgert, 1982; Mooney and Ginzburg, 1986; Jarchow and others, 1994; Catchings and others, 1998, 2002, 2008, 2009, 2014, 2016; Catchings, 1999), seismic-velocity logs (Boness and Zoback, 2004), earthquake-source data (Mayer-Rosa, 1973; Aki and Lee, 1976; Thurber, 1983; Eberhart-Phillips, 1990; Thurber and Atre, 1993; Thurber and others, 1995; Eberhart-Phillips and Michael, 1998), and guided-wave data (Leary and others, 1987; Li and Vidale, 1996; Li and others, 2000, 2007; Korneev and others, 2003; Li and others, 2014; Catchings and others, 2016) show a significant reduction (as much as 50%) in seismic velocities within fault zones.

These reductions in V_P and V_S that are due to faulting typically are seen in velocity models as near-vertical zones of low seismic velocities. However, in the shallow subsurface, low-velocity fault zones can be obscured in V_P models because of the presence of near-surface groundwater, which causes V_P in fault zones to increase, rather than decrease. In the shallow subsurface, V_S, which is strongly affected by the shear modulus, is typically more affected by faulting than V_P, which is strongly affected by the bulk modulus and the presence of groundwater. As a result, the ratios of V_P to V_S can be unusually high in fault zones, and such high ratios typically are highly diagnostic of near-surface faulting (Catchings and others, 2014).

Where present, stratigraphic layers can be vertically offset by near-surface faulting, particularly for reverse and normal faulting. Seismic-refraction tomography is a highly useful method for identifying such vertical offsets, particularly when different rock types are juxtaposed across faults. Seismic-reflection imaging is another particularly useful seismic method for identifying such vertical offsets when subhorizontally layered strata is present in the shallow subsurface. However, small vertical offsets may not be seen in the near-surface at the resolutions of many seismic-reflection surveys, particularly when faulting produces little vertical offset.

Guided waves (see below) can also be highly diagnostic of near-surface faulting when a fault trace can be identified in at least one location along its length. Collectively, these methods have been shown to be highly diagnostic of near-surface faulting.

Guided-Wave Methodology

With respect to seismic-wave propagation, low-velocity fault zones can be considered as wave guides that channel seismic energy. A number of studies have documented the wave-guide effect and the seismic energy that travels along and within the fault zones. This seismic energy is referred to as fault-zone-guided waves or fault-zone-trapped waves (Cormier and Spudich, 1984; Li and Leary, 1990; Li and others, 1990, 1997, 2000; Hough and others, 1994; Huang and others, 1995; Ben-Zion, 1998; Jahnke and others, 2002; Rovelli and others, 2002; Ben-Zion and others, 2003; Malin and others, 2006; Li and others, 2014). Fault-zone-guided waves travel exclusively within low-velocity fault zones, and once the seismic energy enters the fault zone, high-amplitude seismic energy results from coherent multiple reflections at the boundaries between low-velocity fault zones and higher velocity wall rocks (Cormier and Spudich, 1984; Leary and others, 1987; Li and Leary, 1990; Li and Vidale, 1996). Propagation of the seismic waves in fault zones is somewhat similar to optical-fiber light transmission. The amplitudes of fault-zone-guided waves are typically much larger, and the velocities are much lower, than body waves that travel outside of the fault zone (Cormier and Spudich, 1984; Spudich and Olson, 2001; Fohrmann and others, 2004; Ellsworth and Malin, 2011). Numerical studies have shown that high-amplitude guided waves are generated and propagate within fault zones only when the source is located within, or very close to, the fault zone (Li and Leary, 1990; Li and Vidale, 1996; Ben-Zion, 1998; Ingel

and others, 2002) or when the source underlies a fault zone that extends only to shallow depths (Fohrmann and others, 2004). Thus, for most crustal faults, guided waves propagate only along faults that are continuous between the seismic source and the observation point, as a discontinuous fault prevents lateral propagation of guided waves beyond the endpoint of the fault (Li and Vidale, 1996; Jahnke and others, 2002). Thus, the presence, continuity, and connectivity of faults can be inferred from the presence or absence of guided waves along faults (Catchings and others, 2016).

Guided waves have been identified in most studies on the basis of their relatively low-velocity, high-amplitude waveforms that have dispersive wavetrains, which are recorded on a series of seismographs deployed across or along a fault zone. The waveforms can be forward-modeled to estimate physical properties of the fault zone, including geometry, Q (attenuation), velocities, and temporal changes in velocity (Li and others, 2014, 2016). Furthermore, the locations of stations that record the high-amplitude waveforms and long time durations can be used to infer the overall maximum width of a fault zone, but this method is not ideal for locating individual fault traces within the overall fault zone.

In our study, we use peak amplitude (peak ground velocity [PGV]) of fault-zone-guided waves (Catchings and others, 2013, 2016) to more precisely locate individual fault traces within the overall fault zone. Because fault zones can be kilometers in width and can consist of multiple traces, evaluation of PGV is more effective in locating individual traces. For our present study, we identify guided waves as high-amplitude seismic waves that arrive later than the body waves (either V_P or V_S) and are narrowly confined to a set of stations. Guided waves can be measured on either vertical- or horizontal-component sensors (Malin and others, 1996), but in our present study, we use only data from horizontal-component sensors.

Tomography, MASW, and Reflection Methodologies

To develop seismic images, we also used seismic-refraction tomography, multichannel analysis of surface waves (MASW), and seismic-reflection processing techniques in this study. We developed P- and S-wave seismic-refraction tomography models using first-arrival travel times and the modeling code of Hole (1992). The nonlinear travel-time-tomography method by Hole (1992) uses a finite-difference algorithm to solve the eikonal equation in computing first-arrival travel times from the source to the receiver, and the model is updated in iterative steps using backprojection. Because P- and S-wave geophones and their respective shots were colocated approximately every 2 meters (m), we parameterized both our V_P and V_S models using 2-m horizontal (x) and vertical (z) intervals. For the tomographic inversions, we used 1-D starting models developed from shot-gather modeling that assumed similar but differing vertical variations in velocity. All starting models produced similar final velocity models, having velocities that generally differed by less than 5 percent at any given location in the final models. The geometrical setup of the seismic profile allowed us to use reciprocal shot and geophone (receiver) pairs to determine travel times. First arrivals were measured at nearly every geophone (~89) for each shot point (89) along the profile, totaling nearly 7,900 first arrivals for the P waves and for S waves. Although most first arrivals could be measured on most shot gathers, for some less energetic shots, we used reciprocal travel times from the more energetic shots to ensure travel-time consistency.

We developed Rayleigh- and Love-wave V_S models using a version of the MASW method (Park and others, 1999) that was developed by Hayashi and Suzuki (2004) and Hayashi (2008) and is available in the Geometrics 2D SeisImager software package. For MASW analysis, the SeisImager algorithm constructs common midpoint correlations to develop 1-D dispersion curves and 1-D V_S models for each shot point along the seismic profiles, and, by laterally combining those V_S models, a 2-D V_S model can be developed for each seismic profile. Although the MASW method can be applied to Rayleigh- and Love-wave (surface wave) data, the MASW method was originally applied to Rayleigh waves (Xia and others, 1999) and is generally referred to as the MASW method in the scientific literature. However, the

method is sometimes referred to as the MAS_RW method (Yong and other, 2013). The MASW method also has been applied to Love waves and has been referred to as the MALW method (Yuan, 2011; Xia and others, 2012; Catchings and others, 2017) or the MAS_LW method (Yong and others, 2013). In this report, we use the MAS_RW and MAS_LW descriptors to differentiate between the MASW method when applied to Rayleigh and Love waves, respectively.

In seismic-reflection data processing, we followed procedures similar to those outlined by Brouwer and Helbig (1998). Processing steps included geometry installation, independent trace editing, timing corrections, automatic gain control (AGC), band-pass filtering, surgical muting of refractions, surface waves and airwaves, velocity analysis (tomographic and 1-D velocities), elevation static corrections and normal moveout correction (using refraction-tomography velocities), stretch muting, common-depth point stacking, and poststack AGC and band-pass filtering. We attempted to stack both the P- and S-wave reflection data to look for variations in the resolution of the images.

Hollywood Fault Data Acquisition and Profiles

We acquired seismic data along profiles in Hollywood between May 23, 2018, and June 1, 2018. Data were acquired in several stages, with the data being recorded along the following two transects: (1) Profile HW1, which consisted of a 178-m-long, north-south-trending, linear profile (within a parking lot) located north of Hollywood Boulevard and about 80 m east of North Gower Street **(**fig. 2**)**, and (2) Profile HW2, a 370-m-long, north-south-trending, linear profile along North Argyle Avenue, between Hollywood Boulevard and Franklin Avenue (fig. 3).

Hollywood Fault Profile HW1

Profile HW1 originated on the north side of Hollywood Boulevard and ended in the courtyard of the First Presbyterian Church of Hollywood. We conducted several types of seismic investigations along Profile HW1. The first seismic investigation was a guided-wave survey (HGW1), whereby the recording array was perpendicularly offset from the seismic source, which was generated by a 227-kilogram (kg) (500-pound [lb]) accelerated weight drop (AWD). We used 157 individual "shots" at the same physical location (SP1), and the individual "shots" were stacked to form a single shot gather containing fault-zone-guided waves. Generally, the seismic source must be within or near a fault trace to generate guided waves, and so, accordingly, we placed SP1 within a known trace of the Hollywood Fault that had been previously investigated by core-boring and cone-penetration-testing (CPT) transects (Ninyo and Moore, 2015a, b).

The second seismic survey (HRR1) along Profile HW1 used active P-wave seismic sources (227-kg AWD shots and 3.6-kg hammer shots) that were in line with the recording array. Both seismic sources generated seismic energy when an AWD or hammer vertically struck a steel plate on the ground surface. The recording array consisted of 89 vertical-component sensors that were spaced 2 m apart. For the HRR1 seismic survey, we recorded P-wave refraction, P-wave reflection, and Rayleigh-wave data that were evaluated for evidence of faulting. In acquiring the P-wave data, we generated seismic shots at locations coincident with the 89 sensors. We used two stacked AWD shots at each of the southernmost 70 shot points, and four stacked hammer shots for each of the northernmost 19 shots, which were largely within the church courtyard.

The third seismic survey (HRR2) along Profile HW1 used active S-wave sources that were in line with the recording array. We generated the seismic sources by horizontally striking a 3.6-kg hammer against an aluminum block that was tethered to the ground surface. The recording array consisted of 89 horizontal-component sensors that were spaced 2 m apart. For the HRR2 survey, we recorded S-wave refraction, S-wave reflection, and Love-wave data that were evaluated for evidence of faulting. In acquiring the S-wave data, we generated seismic shots at 78 (of 89) shot-point locations that

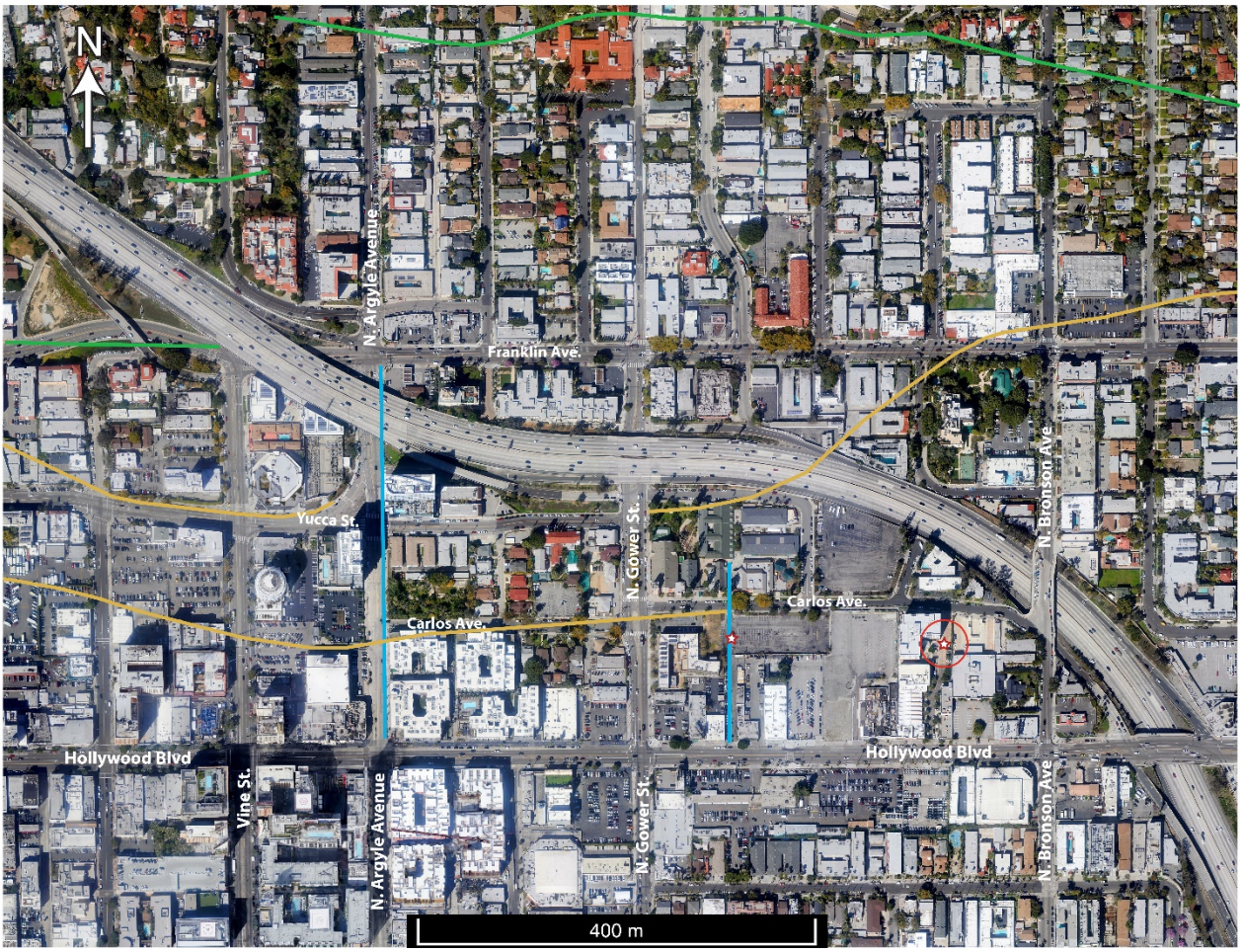

Figure 2. Google Earth image of study area along Hollywood Fault (yellow lines). Green lines show inferred location of faults of undetermined age. Blue lines show locations of seismic profiles: HW1 is shorter, eastern profile; HW2 is longer, western profile. Red stars show locations of shot points used to generate guided waves: SP2, star along profile HW1; SP1, circled star. Abbreviation: m, meter(s).

were coincident with horizontal-component sensors. Most of the unused shot-point locations were within the courtyard of the First Presbyterian Church of Hollywood, where the ground was covered with cement. To avoid damaging the cement, we chose not to have sources at sensor numbers 66, 69, and 81 to 89. We used four stacked hammer-block shots for each shot point.

We used three types of recording systems along Profile HW1. For in-line, P- and Rayleigh-wave seismic imaging, we used Mark Products 4.5-hertz (Hz), vertical-component sensors (geophones) that were attached to a refraction cable. For in-line, S- and Love-wave seismic imaging, we used Mark Products 4.5-Hz, horizontal-component sensors that were attached to the same refraction cable. For both types of sensors, the refraction cable was attached to two 60-channel Geometrics RX60 Strataview seismographs. For both the P- and S-wave surveys, we used a sampling rate of 0.5 milliseconds (ms), and data were recorded for 2 seconds (s). For guided-wave recording along Profile HW1, at each recording site, we used two stand-alone, Reftek RT-125 (Texan) seismographs that were attached to Sercel 4.5-Hz, 3-component L-28 sensors, and we used a sampling rate of 0.5 ms and a recording length of 3 s.

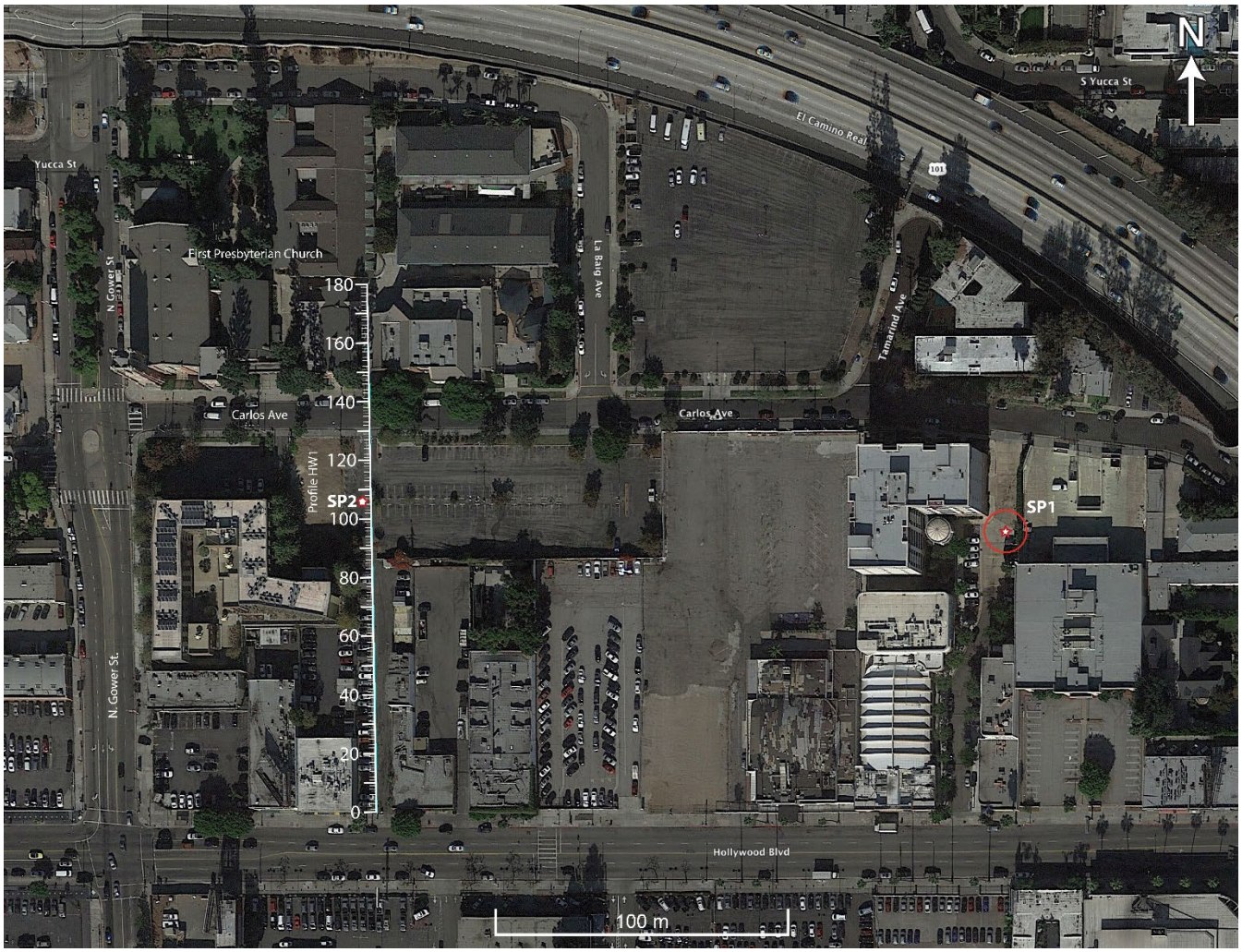

Figure 3. Google Earth image of Hollywood Fault study area near Profile HW1, showing distance scale (in meters [m]) along Profile HW1 and locations of shot points SP1 and SP2 (red stars). SP1 is located at the near-surface fault trace, as determined by a core-boring and cone-penetration-testing (CPT) transect; SP2 is located at the near-surface trace of Hollywood Fault, as indicated by peak ground velocity of guided waves.

Hollywood Fault Profile HW2

Profile HW2 extended along the east side of North Argyle Avenue from Hollywood Boulevard to Franklin Avenue, crossing Yucca Street and Highway 101 near the north end of the profile (fig. 4). As with Profile HW1, we conducted several types of seismic investigations along Profile HW2 or parts of it. The first seismic survey along Profile HW2 was a guided-wave survey (HWG2), from which guided-wave data were acquired. The second seismic survey was an in-line P-wave survey (HRR3), from which reflection, refraction, and MAS_RW (multichannel analysis of surface waves, Rayleigh waves) data were acquired. The third seismic survey was an S-wave survey (HRR4), from which we attempted to acquire reflection, refraction, and MAS_LW (multichannel analysis of surface waves, Love waves) data; however, we recorded only 13 S-wave shots for the HRR4 survey because our S-wave seismic sources were too weak to overcome the traffic noise along North Argyle Avenue. As a result, we did not process data for the third (HRR4) survey.

For the HRR3 in-line seismic survey, we deployed 66 channels, using 3-m spacing between each channel and having a total profile length of 195 m. The actively recording profile extended only from

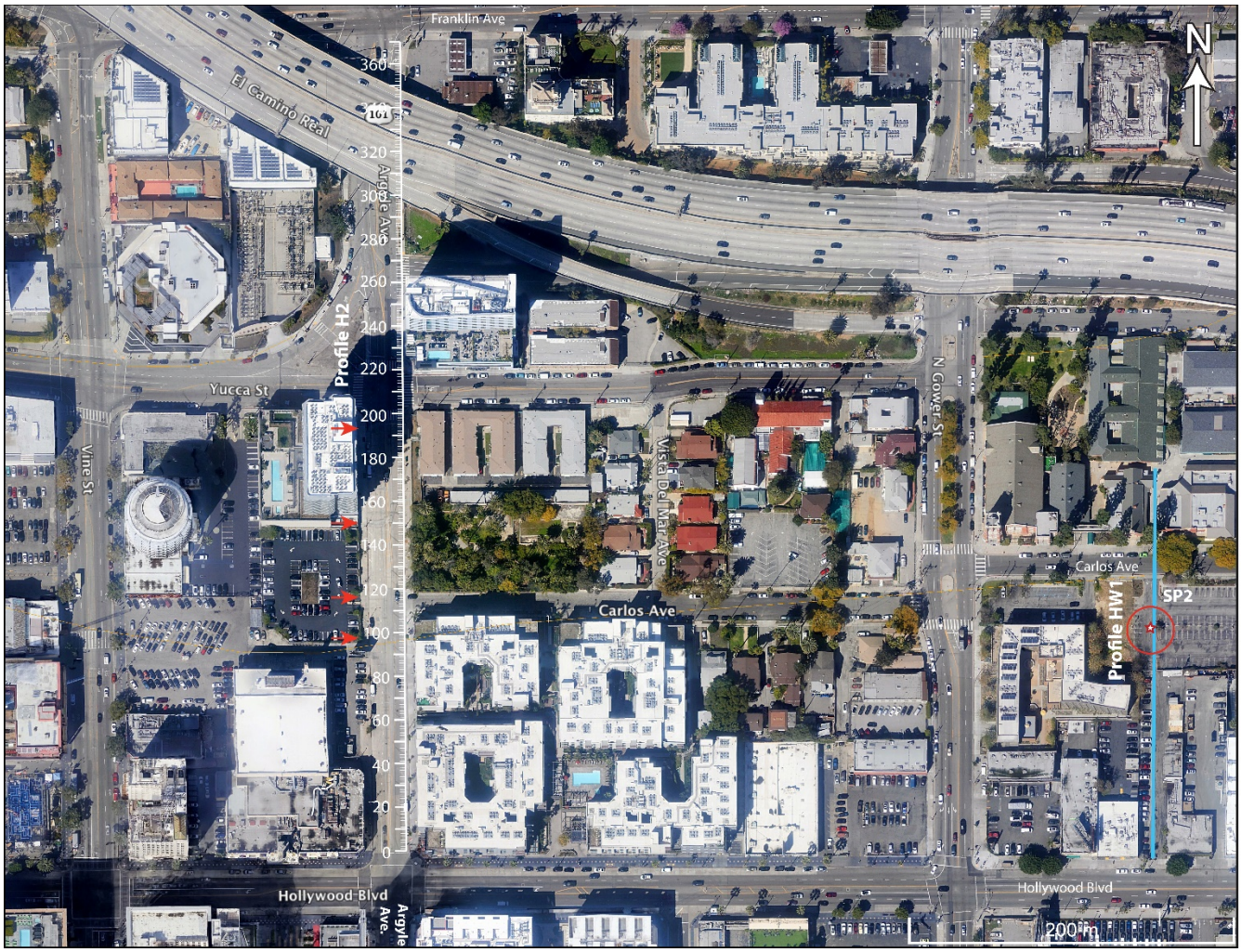

Figure 4. Google Earth image of Hollywood Fault study area near Profile HW2, showing distance scale (in meters [m]) along Profile HW2 (North Argyle Avenue) and location of SP2 (circled red star). Red arrows along North Argyle Avenue denote two zones of probable faulting, as indicated by seismic data. SP2 is located at the near-surface trace of Hollywood Fault, as indicated by peak ground velocity of guided waves.

Hollywood Boulevard to Yucca Street (fig. 4). We used a 227-kg AWD to generate P- and Rayleigh-wave seismic energy along the profile, and a shot point was colocated with every active channel except three of them that had obstructions that prevented the use of the AWD. The P- (and Rayleigh-) wave data were recorded using two Geometrics RX-60 seismographs that were attached to refraction cables and Sercel 4.5-Hz, single-component (vertical) sensors.

Guided-Waves Results for Profile HW1

The guided-wave seismic survey (HGW1) along Profile HW1 was conducted on the night of May 24, 2018. Although we deployed 89 sensors that were spaced at 2-m intervals, ten of the sensors experienced instrumental failure. The seismic source for the HGW1 survey was located about 215 m east of the recording array and approximately 100 m west of North Bronson Avenue, between Carlos Avenue to the north and Hollywood Boulevard to the south (fig. 3). To record guided waves with less cultural noise, we generated seismic sources (157 AWD shots) in the evening hours of May 24, 2018, beginning at about 18:06:11 (local time) and continuing until 18:57:40. The resulting data contained clear arrivals and strong guided-wave energy.

Guided-Wave Data Analysis for Profile HW1

Guided waves generated during the HGW1 survey were identifiable as high-amplitude arrivals following the shear-wave arrivals (figs. 5*A*, *B*). As a result, we evaluated PGV on the seismic traces only for the part of the seismic record at and following the S-wave first arrival. We correlated the PGV of the guided waves and the travel times to differentiate the guided waves from other possible strong arrivals (figs. 6*A*, *B*). The data show that the highest PGV values, which are expected at fault traces, arrived at the recording array at about 1,200 ms (1.2 s), and, because the source was approximately 215 m from the recording array, we determined that the guided waves traveled (on average) at about 180 m/s. The earliest shear waves arrived at the recording array at about 800 ms (0.8 s), suggesting an average V_S of about 270 m/s. Thus, the guided waves traveled at about 67 percent of the velocity of the shear waves, consistent with velocities expected of guided waves.

Because guided waves travel exclusively within fault zones as high-amplitude arrivals, the physical location of near-surface fault traces can be inferred from guided waves (fig. 6*A*), with the highest amplitudes occurring at the near-surface trace. Our analysis of the PGV of guided waves along Profile HW1 shows a prominent peak between channels 48 and 66 (meters 94–110) of the recording array, with the highest peak concentrated at channel 54 (meter 106) of Profile HW1. Although the highest PGV value occurs at channel 54, relatively high values also occur between channels 50 and 60 (meters 98–118), suggesting a wider fault zone at slightly greater depths. PGV values are appreciably lower to the north and south of the apparent fault zone (channels 48–66, meters 94–110), but an asymmetry is present in PGV values, whereby values to the south are higher than those to the north. We interpret this asymmetry to indicate either a near-surface southward dip of the fault zone or some additional deeper fault traces to the south of meter 106 of the seismic profile.

Our inferred fault location is also consistent with disruptions in lithology identified in previous borehole measurements (Group Delta, 2015). However, Group Delta (2015) interpreted this change in lithology as arising from a shallow-depth paleochannel at that location. We suggest, however, that a paleochannel cannot account for the presence of guided waves, the observed travel-time delay of the guided waves, or the discrete high PGV values at meter 106. As discussed below, a paleochannel also cannot account for other seismic anomalies observed at that location. Thus, we suggest that the lithology change and the high PGV values result from near-surface faulting near meter 106 of Profile HW1 .

In addition to the high PGV values at the apparent near-surface fault zone (meter 106), a zone of relatively higher PGV values is present between channels 1 and 18 (fig. 6*A*). Although this zone has high PGV values that would be expected of a deeper fault zone, the timing of the high PGV values (fig. 6*B*) suggests that they are not generated by guided waves. Instead, we suggest that this zone of high PGV values may be caused by seismic energy generated by the subway system (Metro Red Line), which is located beneath Hollywood Boulevard. With respect to guided waves, a subway system would be somewhat analogous to a fault zone, whereby high-amplitude seismic and sound waves that are generated within the subway bore by moving trains would be trapped and would propagate within the subway bore.

Tomography, MASW, and Reflection Results for Profile HW1

For the in-line active-source surveys along Profile HW1, we evaluated V_P, V_S, V_P/V_S ratios, and Poisson's ratios, using V_P derived from tomography and V_S derived from several methods. We also evaluated V_P and V_S reflection images.

Profile HW1 V_P Model

Along Profile HW1, our tomography model (fig. 7) shows that V_P ranges from about 300 m/s (at the surface) to 2,800 m/s (at ~50 m depth). In the shallow subsurface, a change in the depth of the

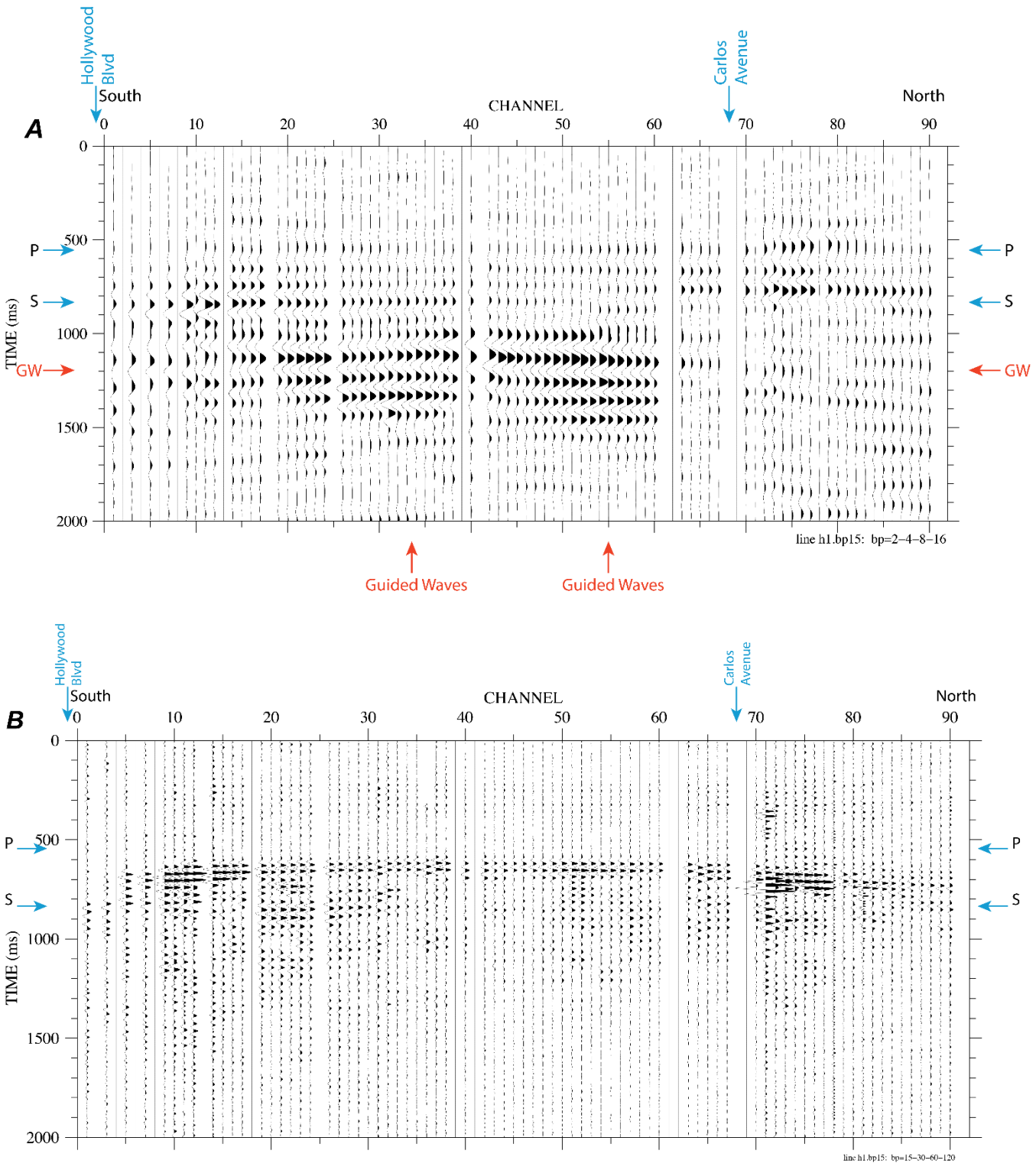

Figure 5. *A*, Stacked guided-wave shot gather for Profile HW1 (guided-wave survey HGW1). Source is located at SP1; recording array is located along Profile HW1. P waves (P), S waves (S), and guided waves (GW) are labeled on shot gather. Data were band-pass filtered between 2 and 16 Hz. *B*, Same shot gather as in *A*, but filtered between 15 and 120 Hz (note that only P-waves and partial S-waves are prominent at higher frequencies). Locations of nearby streets are shown. Other abbreviation: ms, millisecond(s).

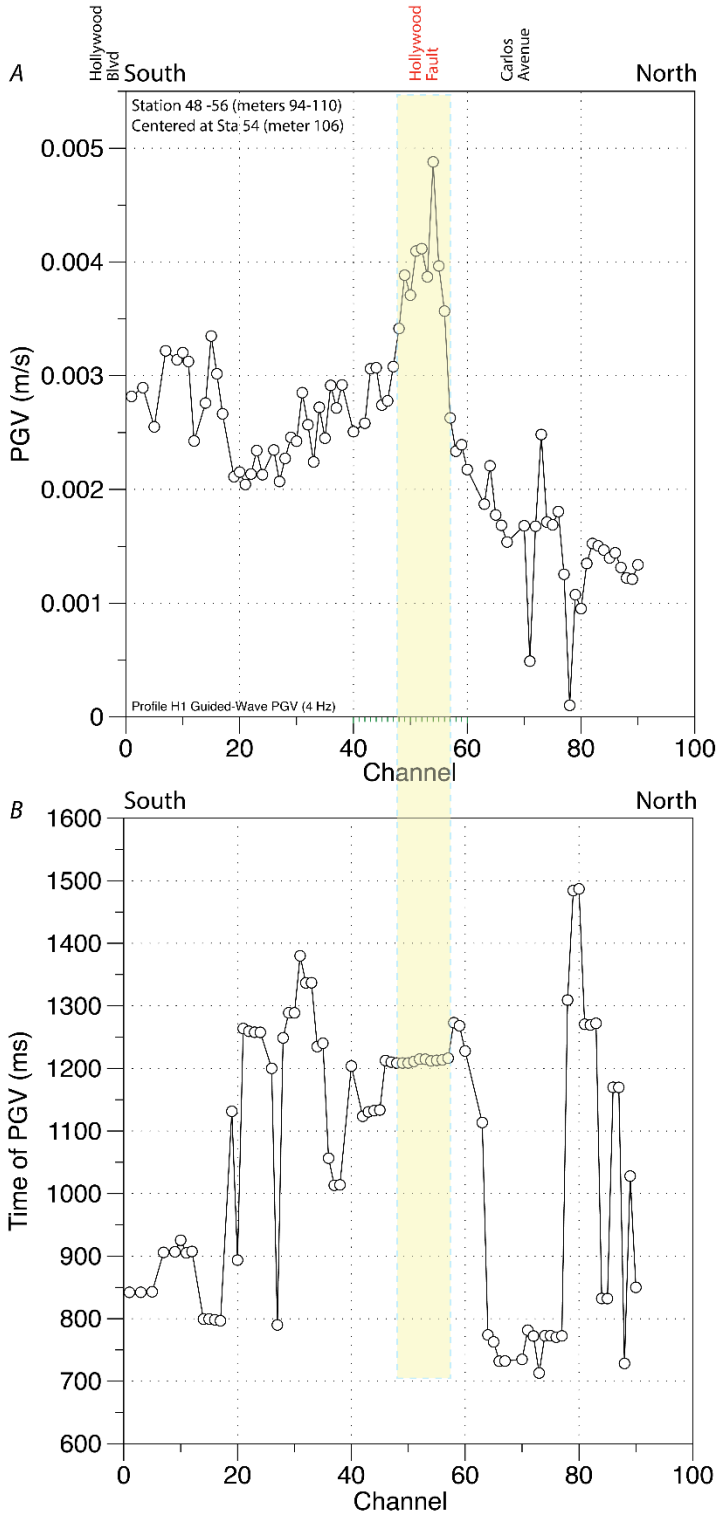

Figure 6. *A*, Plot of peak ground velocity (PGV) of guided waves for each recording channel along Profile HW1; highest PGV values (yellow shading) are concentrated between channels 48 and 56, and highest PGV value is at channel 54 (meter 106). *B*, Plot of time of arrival of corresponding PGV values shown in *A*; highest PGV values coincide with delayed phases that arrive at about 1,200 ms. As can be seen from shot gather (see fig. 5*A*), these delayed phases correlate with guided waves; zones of high PGV of guided waves are expected within near-surface fault zones. Locations of nearby streets are shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

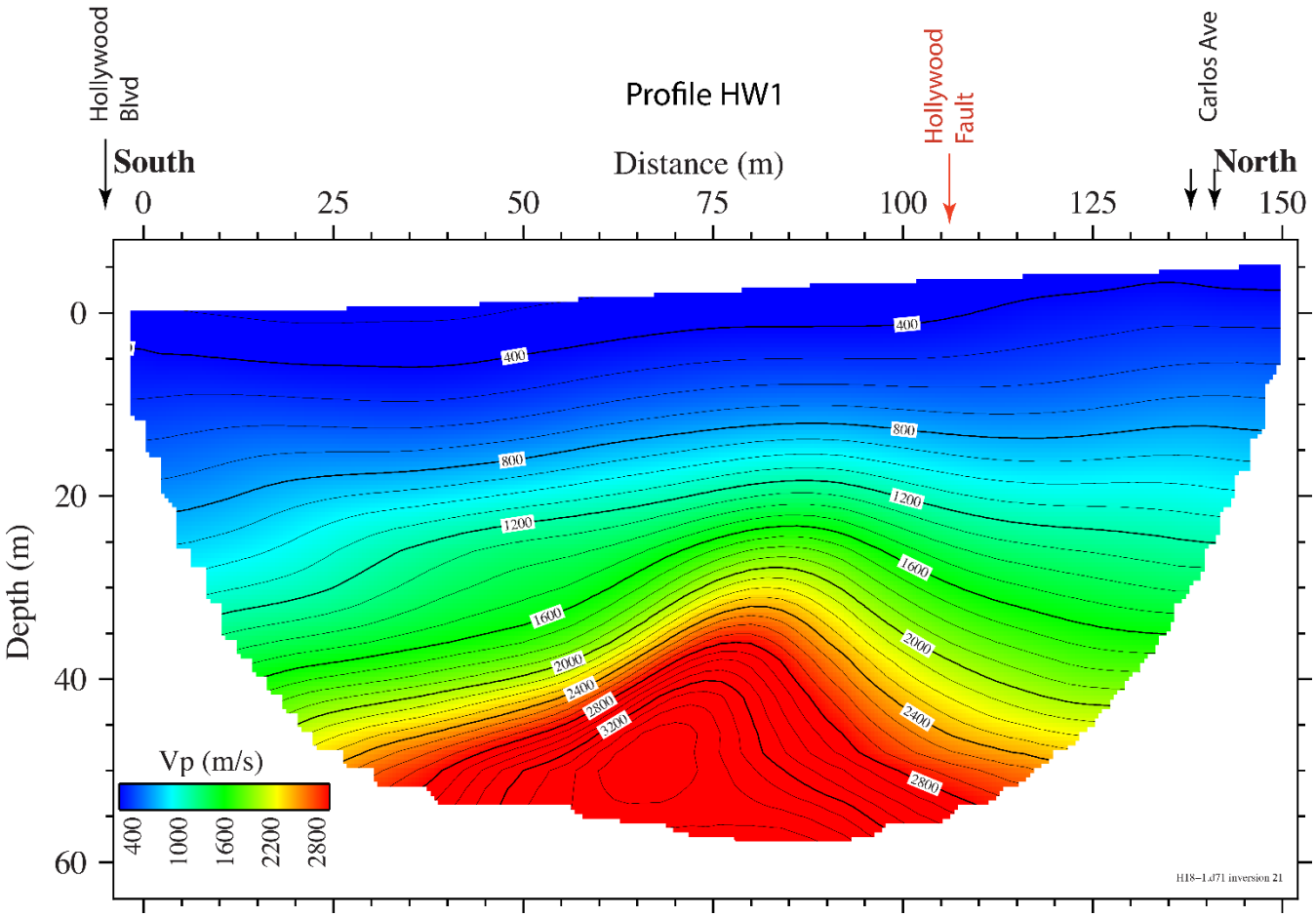

Figure 7. Tomographic P-wave velocity (V_P) model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves) correlates with sharp change in depth of 400-m/s velocity contour. At about 20 m depth, slightly south of inferred surface trace of Hollywood Fault, there is a zone of high velocities, especially velocities higher than about 1,500 m/s, which is consistent with a fault that acts as a groundwater barrier. Other abbreviations: m, meter(s); s, second(s).

400-m/s velocity contour is observed near meter 106 of the seismic profile, suggesting a lateral change in material properties there. This shallow change in materials overlies a deeper, dome-shaped set of velocity contours, suggesting a continuous change in velocities from the near-surface to the base of our velocity model. For V_P values in excess of 1,500 m/s, the apex of the dome is located at meter 90 at about 20-m depth. Overall, the dome-shaped structure dips to the south. We have observed such domelike velocity structures elsewhere where groundwater saturation, which typically has V_P of 1,500 m/s in sediments, abruptly changes across faults. Such structures typically result from ponding of groundwater against faults that act as ground-water barriers. However, ponding typically occurs on the topographically upslope side of faults, unless water flows parallel to the fault or over the top of a fault that does not reach the surface (Catchings and others 2014). We suggest that the approximate depth to the top of groundwater along Profile HW1 is indicated by the 1,500-m/s velocity contour.

Profile HW1 V_S Model

Our tomographic V_S model (fig. 8) shows that shear-wave velocities (V_S) along Profile HW1 range from about 200 m/s (at the surface) to about 490 m/s (at about 25-m depth). At shallow depths, V_S is lowest (~200 m/s) near meters 80 and between meters 95 and 106, but an abrupt change in V_S is

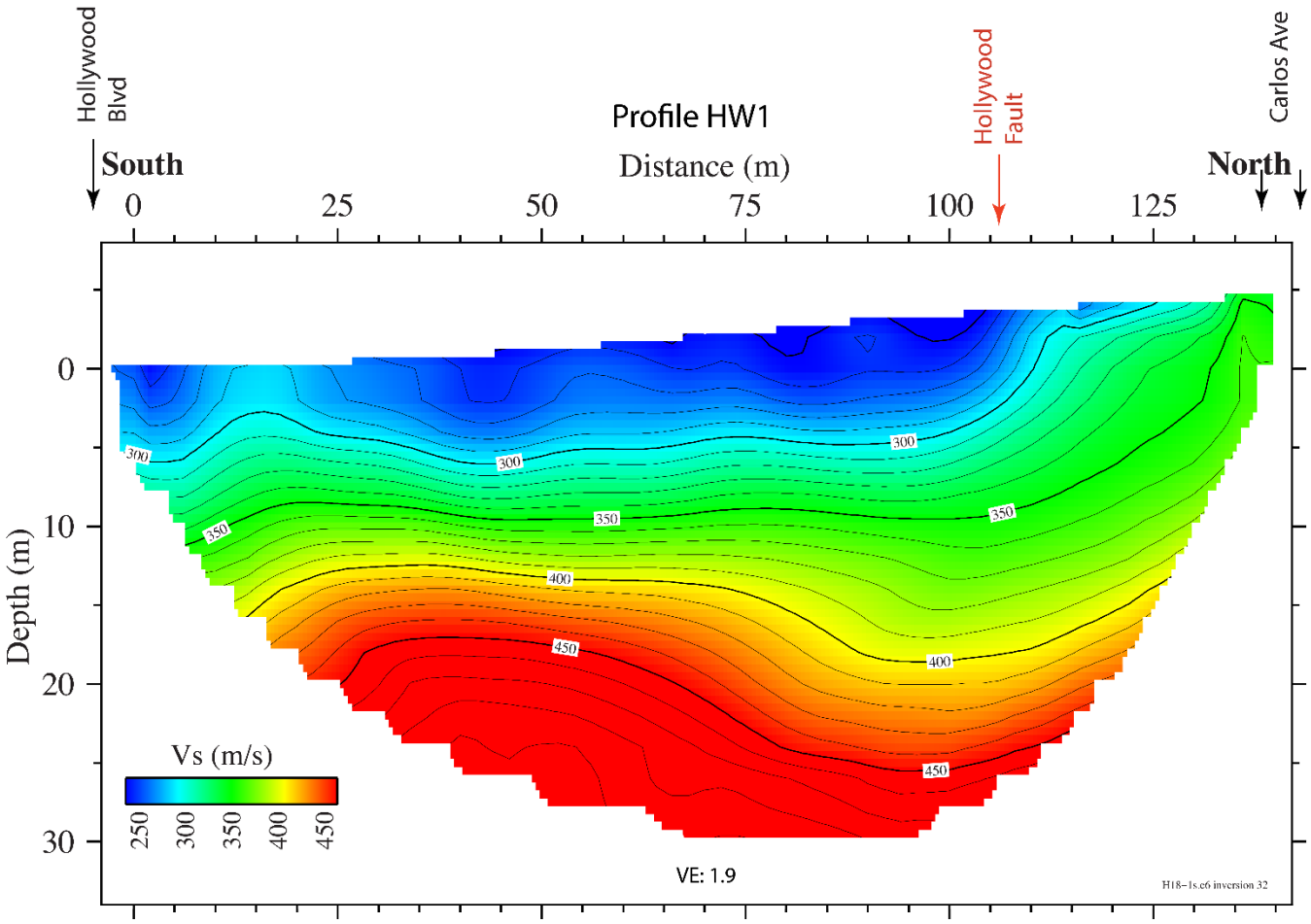

Figure 8. Tomographic S-wave velocity (V_S) model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves and P-wave velocities) correlates with a sharp change to higher velocities to the north and a relatively low-velocity zone at depths greater than about 15 m. Such near-vertical, S-wave, low-velocity zones are consistent with faulting. Other abbreviations: m, meter(s); s, second(s); VE, vertical exaggeration.

observed at about meter 106, where higher velocities occur at shallower depths to the north. This abrupt change in V_S continues vertically to the base of the velocity model at about 30 m depth. Zones of abrupt vertical changes in V_S are consistent with faulting because faults cause decreases in V_S owing to shearing. The general low-velocity zone associated with our interpreted fault dips about 79° to the south.

Profile HW1 V_P/V_S Ratios, Tomography Model

We developed a model of V_P/V_S ratios (fig. 9) along Profile HW1 by dividing V_P by V_S at each node of the velocity models. V_P/V_S ratios along Profile HW1 range from about 1 at the surface (in the south and extreme north) to about 4.4 at about 30-m depth (near meter 80). In a manner similar to the V_P structure along Profile HW1, we observe a domelike structure for all V_P/V_S values in the vicinity of meters 75 to 106, but the dome is most pronounced at depths greater than about 15 m. Overall, a slightly southward dip of the structure is observed. Water-saturated faults are expected to have high V_P/V_S ratios because the presence of water causes an increase in V_P, and also because shearing causes a larger decrease in V_S than V_P, resulting in high values of V_P/V_S. Typical hard rocks have V_P/V_S ratios of about 1.72, but sediments can have V_P/V_S ratios in excess of 3. Furthermore, Catchings and others (2014) showed that faulted sediments have higher V_P/V_S ratios beneath the groundwater table. Accordingly, we

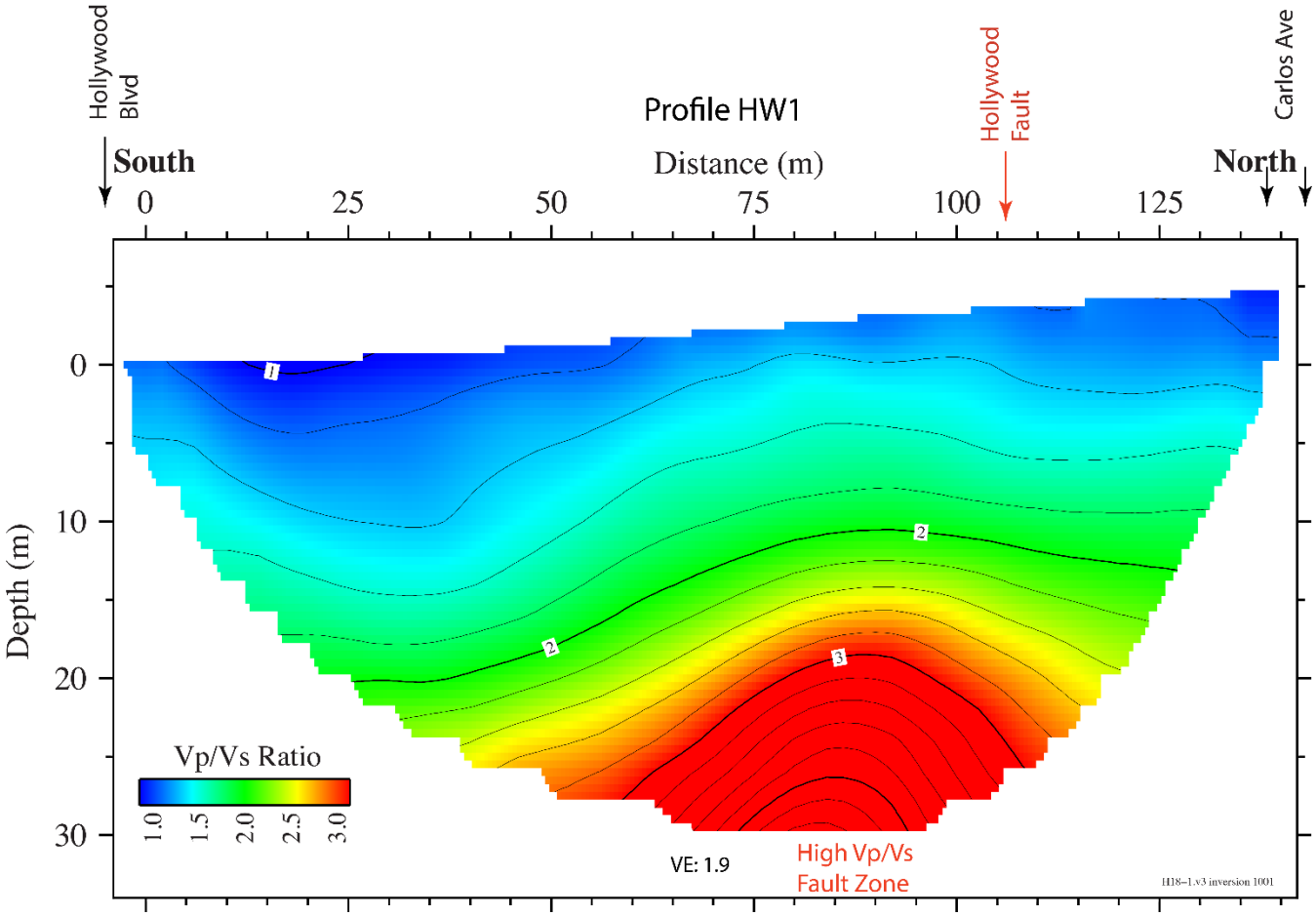

Figure 9. Tomographic V_P/V_S ratio model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves and P- and S-wave velocities) correlates with a shallow-depth zone of high V_P/V_S ratios. Below the inferred (1,500 m/s) water table, V_P/V_S ratios are unusually high (as high as 4.6) in upper 30 m; water-saturated fault zones typically have high V_P/V_S ratios. Other abbreviations: m, meter(s); s, second(s); VE, vertical exaggeration.

interpret the relatively high V_P/V_S ratios on Profile HW1 to be the result of groundwater variations associated with faulting.

Profile HW1 Poisson's Ratios, Tomography Model

We developed a model of Poisson's ratio (fig. 10) along Profile HW1 using the following relationship between V_P and V_S:

$$v = 3\mathrm{K} - \frac{2\mu}{6\mathrm{K}} + 2\mu \quad (1)$$

$$= \frac{\left[\left(\frac{\mathrm{Vp}}{\mathrm{Vs}}\right)^2 - 2\right]}{\left[2\left(\frac{\mathrm{Vp}}{\mathrm{Vs}}\right)^2 - 2\right]}, \quad (2)$$

where

v	is Poisson's ratio;
K	is the bulk modulus;
μ	is the shear modulus;

V_P is the P-wave velocity; and

V_S is the S-wave velocity.

The value of ν ranges from about 0.05 to about 0.45 along profile HW1. The very low values of ν are associated with the shallowest velocity structure (unsaturated zone), and the highest values occur in the deepest materials (below the water table). In the shallow subsurface, ν is most strongly influenced by groundwater saturation, but lithology (such as clays) also can have a strong influence. A ν value of 0.5 is indicative of a fluid, and, in shallow sediments, a ν value above about 0.43 to 0.44 has been associated with the top of the groundwater table (Catchings and others 2007, 2014). Overall, the ν structure along Profile HW1 is similar to the V_P/V_S ratio structure, which are both indicative of a water-saturated fault at depth.

Profile HW1 MAS$_R$W Model

Using Rayleigh waves that were recorded along Profile HW1, we used the MASW method to develop a second V_S model (fig. 11) for Profile HW1. However, the MASW method is inherently a one-

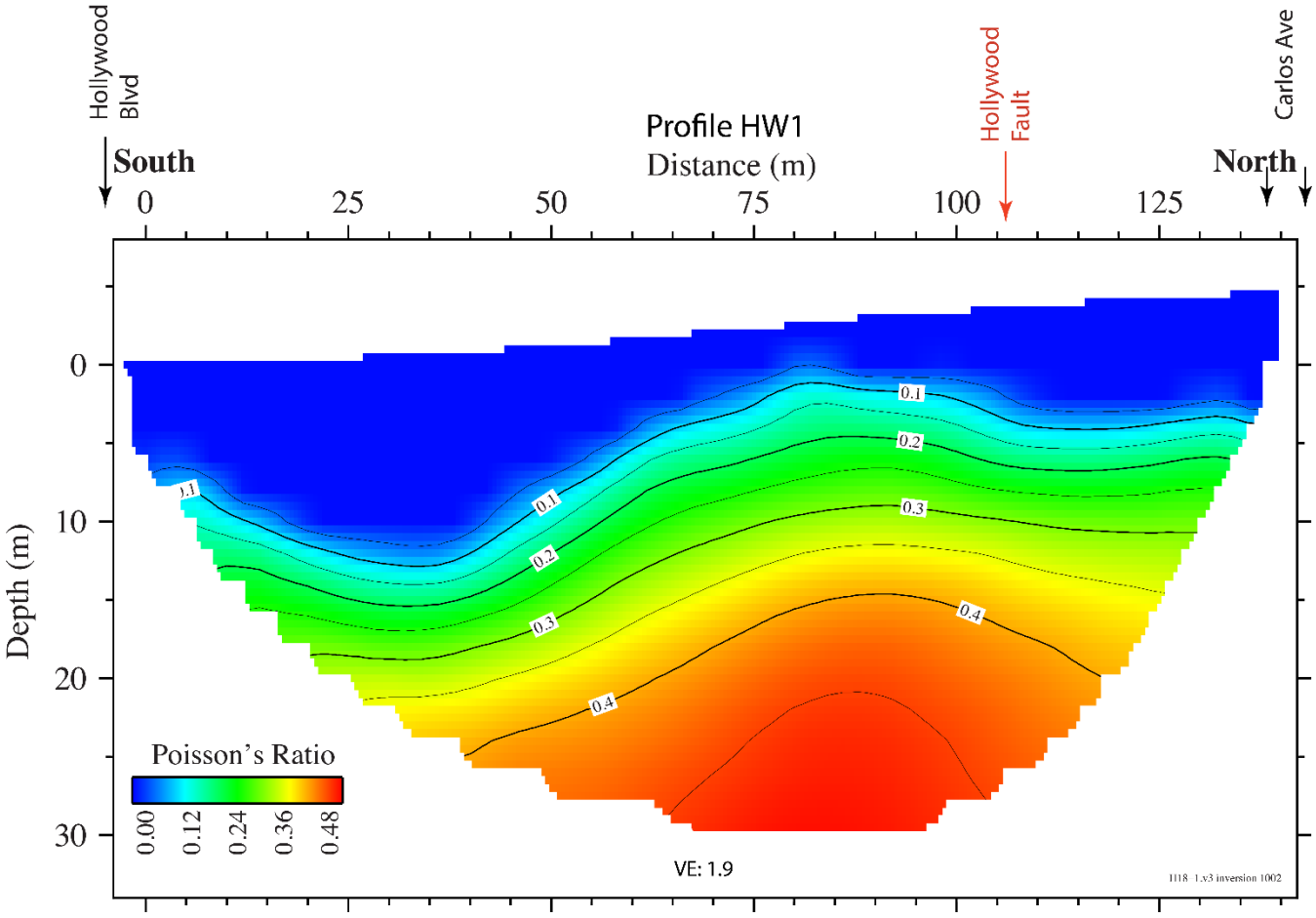

Figure 10. Tomographic Poisson's ratio model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves, P- and S-wave velocities, and V_P/V_S ratios) correlates with a shallow-depth zone of high Poisson's ratios. At depths of about 20 m, Poisson's ratios are shown to be as high as 0.45 below and slightly southwest of the surface trace of Hollywood Fault. Fluids have a Poisson's ratio of about 0.5, and Poisson's ratios of about 0.43 have been shown to correlate with groundwater table (Catchings and others, 2008). Water-saturated fault zones typically have high Poisson's ratios. Other abbreviations: m, meter(s); s, second(s); VE, vertical exaggeration.

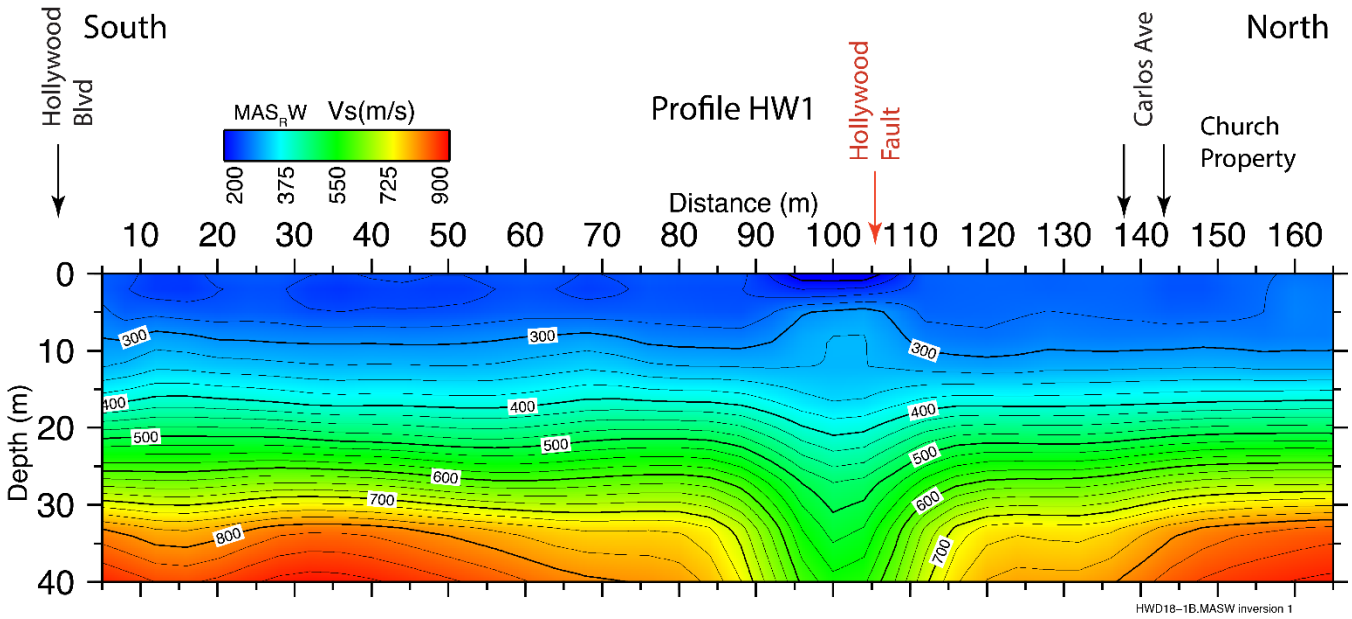

Figure 11. S-wave velocity (V_S) model inferred from Rayleigh waves, using multichannel analysis of surface waves (MASW) method. Near the inferred near-surface Hollywood Fault, our MASRW V_S model infers a zone of low V_S in upper few meters, underlain by a zone of high V_S at about 10 m and also a zone of low V_S to at least 40 m depth. Such near-vertical low-velocity zones are consistent with near-vertical faulting. Although details of the V_S model determined from MASW are slightly different from those of the V_S tomography model, both velocity anomalies are similar and are consistent with faulting near meter 106. Locations of nearby streets are shown. Other abbreviations: m, meter(s); s, second(s).

dimensional method, and, as a result, determination of V_S can be affected by lateral variations in structure, velocity, and topography. Nevertheless, the MASW method can provide an indication of lateral variations in V_S along Profile HW1. Our analysis of Rayleigh waves (MASRW) indicates that V_S along Profile HW1 ranges from about 200 m/s in the shallow subsurface (meters 95–105) to as much as 875 m/s at about 40-m depth. The shallowest V_S values are consistent between the tomography and the MASRW models, with minimum V_S values of about 200 m/s near meters 94 to 106, but MASRW-inferred V_S values are higher at depths greater than about 20 m in the MASRW model. In addition, the overall velocity structure is less variable and more linear in the MASRW model than the tomography model. However, both models suggest the presence of a general near-vertical low-velocity zone near meter 106 that extends to the base of the models. At about meter 106, the MASRW model indicates a more pronounced near-vertical low-velocity zone, which is highly consistent with a zone of near-vertical faulting (Catchings and others, 2014). Aligning the low-velocity contours in the MASRW model suggests that the shallow Hollywood Fault dips about 82° to the south.

Profile HW1 MASLW Model

Using Love waves recorded along Profile HW1, we developed a V_S model (fig. 12) using the MASW method. Our MASLW modeling indicates that V_S ranges from about 250 m/s at shallow depths to about 675 at about 50-m depth. Although the overall MASLW model varies from both the MASRW model and the tomography model, V_S and the overall V_S structure have similarities to those of both the tomography and MASRW models. In particular, the near-vertical low-velocity zone in the vicinity of meters 102 to 120 is seen in all the models and is consistent with a fault in that area. However, whereas the MASRW and tomography models and the asymmetry of the PGV of guided waves suggest a slight

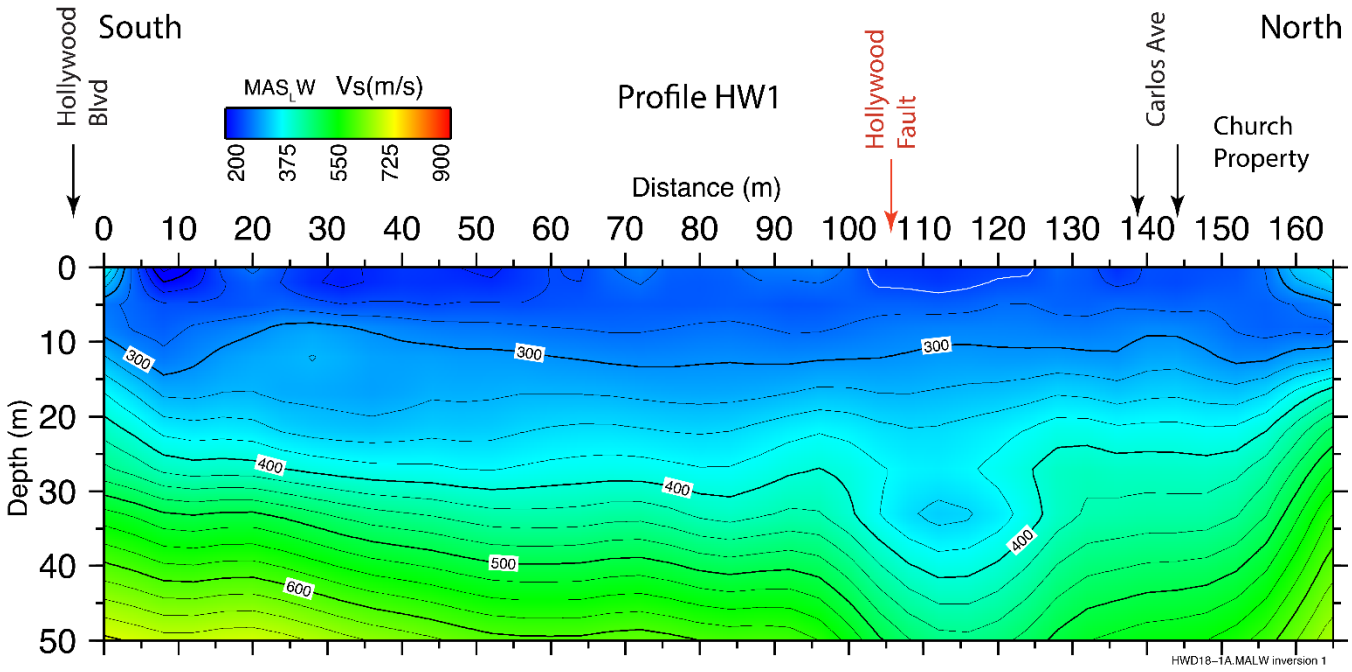

Figure 12. S-wave velocity (V_S) model inferred from Love waves, using multichannel analysis of surface waves (MASW) method. Near the inferred near-surface Hollywood Fault, our MAS$_L$W V_S model infers zones of low V_S in upper few meters and also below about 20 m depth. Such near-vertical low-velocity zones are consistent with near-vertical faulting. Although details of V_S models determined from MAS$_R$W, MAS$_L$W, and tomography differ in absolute velocity, velocity anomalies determined from all three methods are similar and are consistent with faulting. Locations of nearby streets are shown. Other abbreviations: m, meter(s); s, second(s).

southward fault dip at shallow depths, the MAS$_L$W model indicates a slight northward (79°) fault dip at shallow depths, on the basis of the observed low-velocity contours.

Profile HW1 V_P/V_S (V_P Tomography and V_S MAS$_R$W) Model

Using V_P from our tomography model (fig. 7) and the V_S from our MAS$_R$W model (fig. 11), we developed a hybrid V_P/V_S–ratio model (fig. 13) along Profile HW1. Our tomographic/MAS$_R$W hybrid V_P/V_S–ratio model suggests that V_P/V_S ratios range from about 1.2 at the surface to 3.8 at 40-m depth. This range of values in hybrid V_P/V_S ratios is slightly lower than the maximum V_P/V_S ratio value (4.4) indicated by the tomographic V_P/V_S–ratio model (fig. 9); however, the hybrid V_P/V_S–ratio model indicates a pronounced high V_P/V_S–ratio (up to 3.8) zone centered at about meters 100 to 105, similar to the high value (4.4) in the tomographic V_P/V_S–ratio model. Because water-saturated fault zones are expected to cause concentrated high V_P/V_S–ratio zones, we suggest that the relatively wide zone of high V_P/V_S ratios at depth in the hybrid model is likely indicative of a wider fault zone in the upper 40 m depth of the velocity model. The hybrid V_P/V_S–ratio image indicates an overall near-vertical fault that is centered near meter 100; however, this image is also consistent with the presence of adjacent splay faults.

Profile HW1 V_P/V_S (V_P Tomography and V_S MAS$_L$W) Model

Using V_P from our tomography model (fig. 7) and the V_S from our MAS$_L$W model (fig. 12), we developed a second hybrid V_P/V_S–ratio model (fig. 14) along Profile HW1. Our tomographic/MAS$_L$W hybrid V_P/V_S–ratio model suggests that V_P/V_S ratios range from about 1.5 at the surface to 6.0 at 40- to 50-m depth, with pronounced high values being observed beneath the central part of the profile. In the

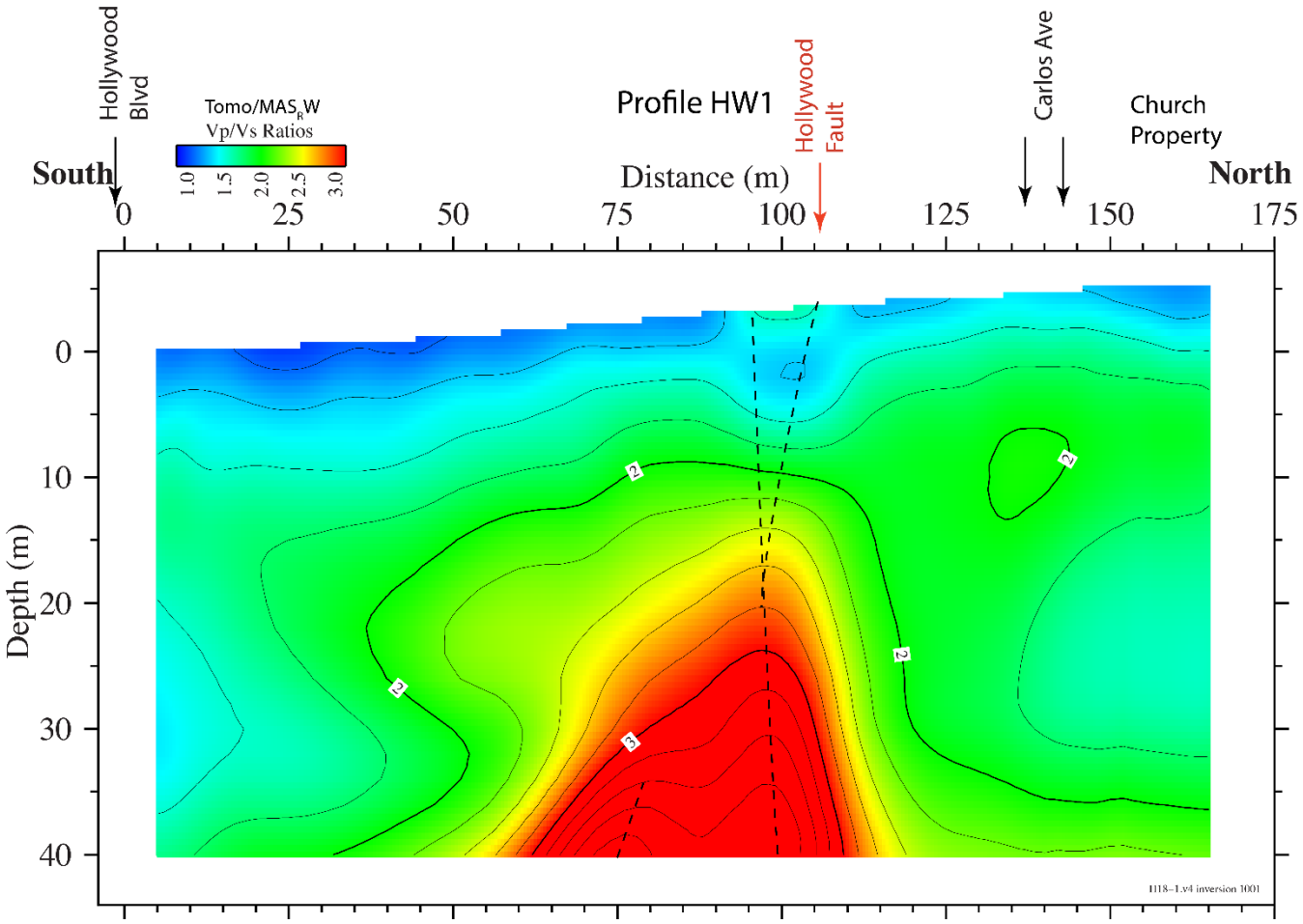

Figure 13. V_P/V_S ratio model along Profile HW1 derived from a combination of our V_P tomography model and our MASRW V_S model. A zone of locally high V_P/V_S ratios occurs near the near-surface trace of Hollywood Fault (dashed lines), as inferred by multiple models in this study. Near-vertical zone of high V_P/V_S ratios is concentrated beneath the near-surface fault trace, as has been seen for other fault zones. Locations of nearby streets are shown. Other abbreviation: m, meter(s).

upper 30 m, all three V_P/V_S–ratio models infer similar structures, but the hybrid V_P/V_S–ratio models suggest a wider fault zone at depth and infer possible northward and southward dips.

Profile HW1 P-Wave Reflection Stack

Using P-wave shot gathers from Profile HW1, we developed a low-resolution P-wave seismic reflection image (stack) of the shallow subsurface (fig. 15). The P-wave reflection stack indicates the presence of predominantly subhorizontal layering in the upper 20 m, with apparent slight folding centered near meter 100 of the profile. This unmigrated image suggests the presence of strong diffractions below about 20-m depth, centered near meter 100. Diffractions are caused by sharp boundaries in the subsurface, and faulting, which vertically offsets layers, is a typical cause of such diffractions, particularly when the diffractions are subvertically aligned, as seen in figure 15. Thus, the P-wave reflection image is consistent with a near-vertical fault located near meter 100. By aligning the diffractions over depths that range from about 20 to about 120 m, the alignment of diffractions suggests that the fault dips about 87° northward below 20-m depth (fig. 15). In addition, significant noise or surface waves is seen in the southern part of the reflection image, making it difficult to resolve the

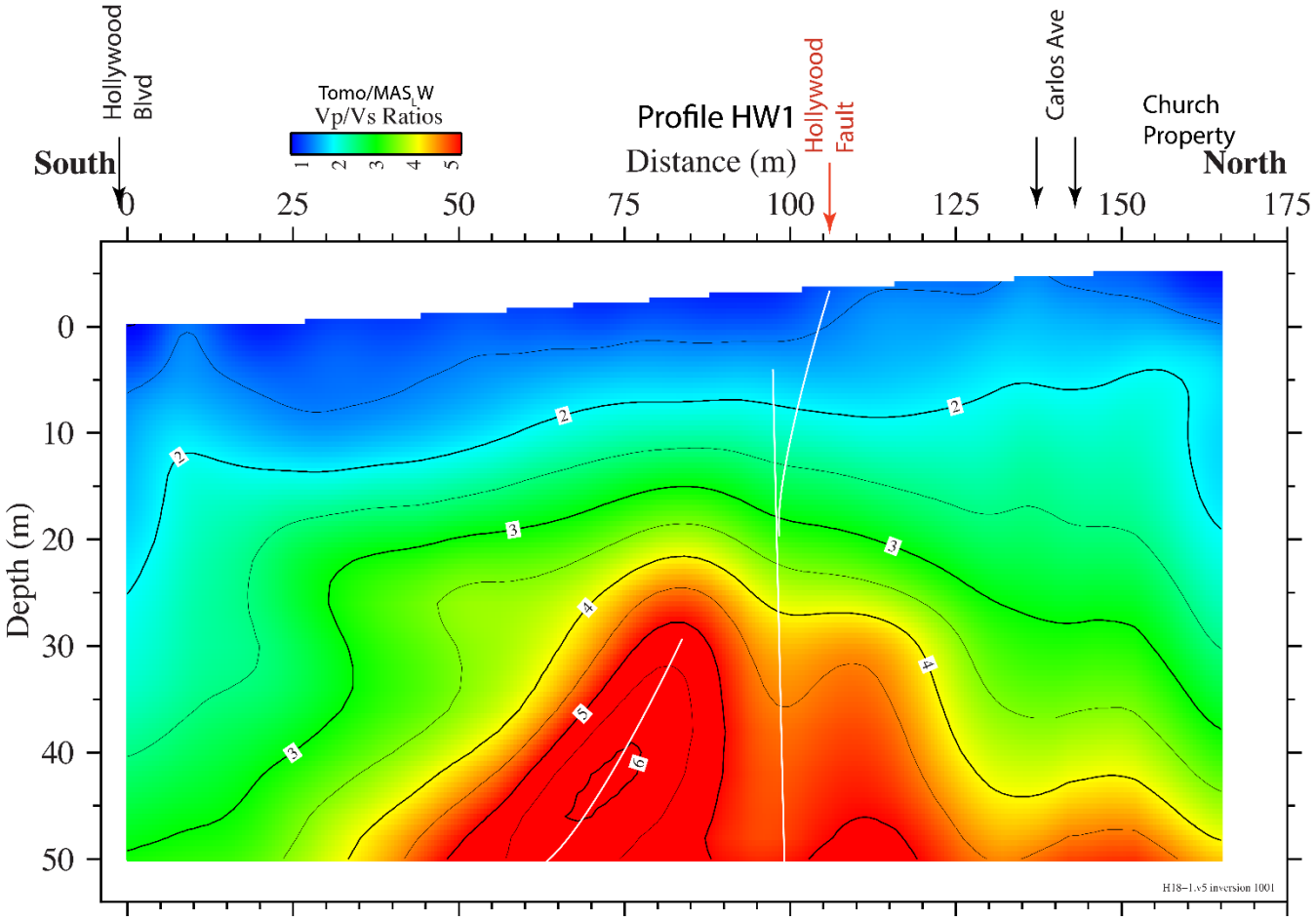

Figure 14. Poisson's ratio model along Profile HW1 derived from combination of our V_P tomography model and our MAS$_L$W V_S model. A zone of locally high Poisson's ratios occurs near the near-surface trace of Hollywood Fault (white lines), as inferred by multiple models in this study. Near-vertical zone of high Poisson's ratios is concentrated near the near-surface trace of Hollywood Fault, as has been seen for other fault zones. Locations of nearby streets are shown. Other abbreviation: m, meter(s).

structure along the south half of Profile HW1. The strong energy likely arises from either the Los Angeles Metro Rail (subway) Redline trains or car traffic along Hollywood Boulevard.

Profile HW1 S-Wave Reflection Stack

Using S-wave shot gathers from Profile HW1, we developed a low-resolution S-wave seismic reflection image (stack) of the shallow subsurface (fig. 16). The S-wave reflection stack also indicates the presence of predominantly subhorizontal layering and an apparent fold centered near meter 100. Aligning the apex of the apparent fold—from about 20 to about 125 m—suggests that the deeper fault dips about 87 degrees northward, with the possibility of a splay fault dipping about 79° southward near the surface. High noise levels on the south end of the profile interferes with the seismic signal, making it difficult to delineate any possible fault structures.

Summary of Seismic Indicators of Faulting along Profile HW1

We evaluated 13 different seismic images along Profile HW1, including (1) PGV of guided waves, (2) tomographic V_P, (3) tomographic V_S, (4) tomographic V_P/V_S ratios, (5) tomographic Poisson's ratios, (6) MAS$_R$W V_S, (7) MAS$_L$W V_S, (8) hybrid tomography/MAS$_R$W V_P/V_S ratios, (9) hybrid

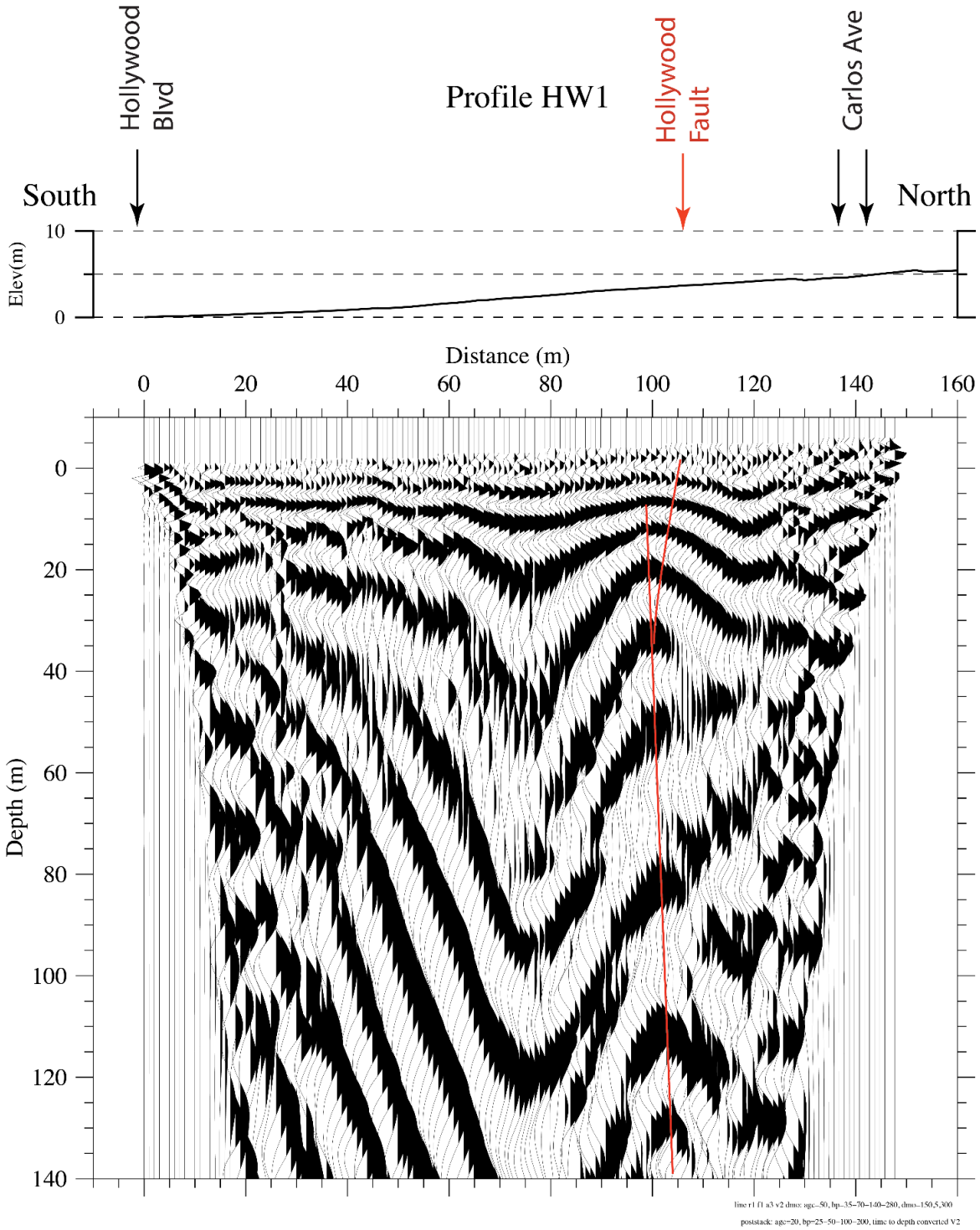

Figure 15. Low-resolution P-wave reflection stack for Profile HW1. Strong diffractions are apparent beneath the inferred location of Hollywood Fault (red lines), beginning at about 10 m depth and extending to base of reflection image. Such diffractions are typically seen on unmigrated reflection images of faulted strata. Locations of nearby streets are shown. Abbreviation: m, meter(s).

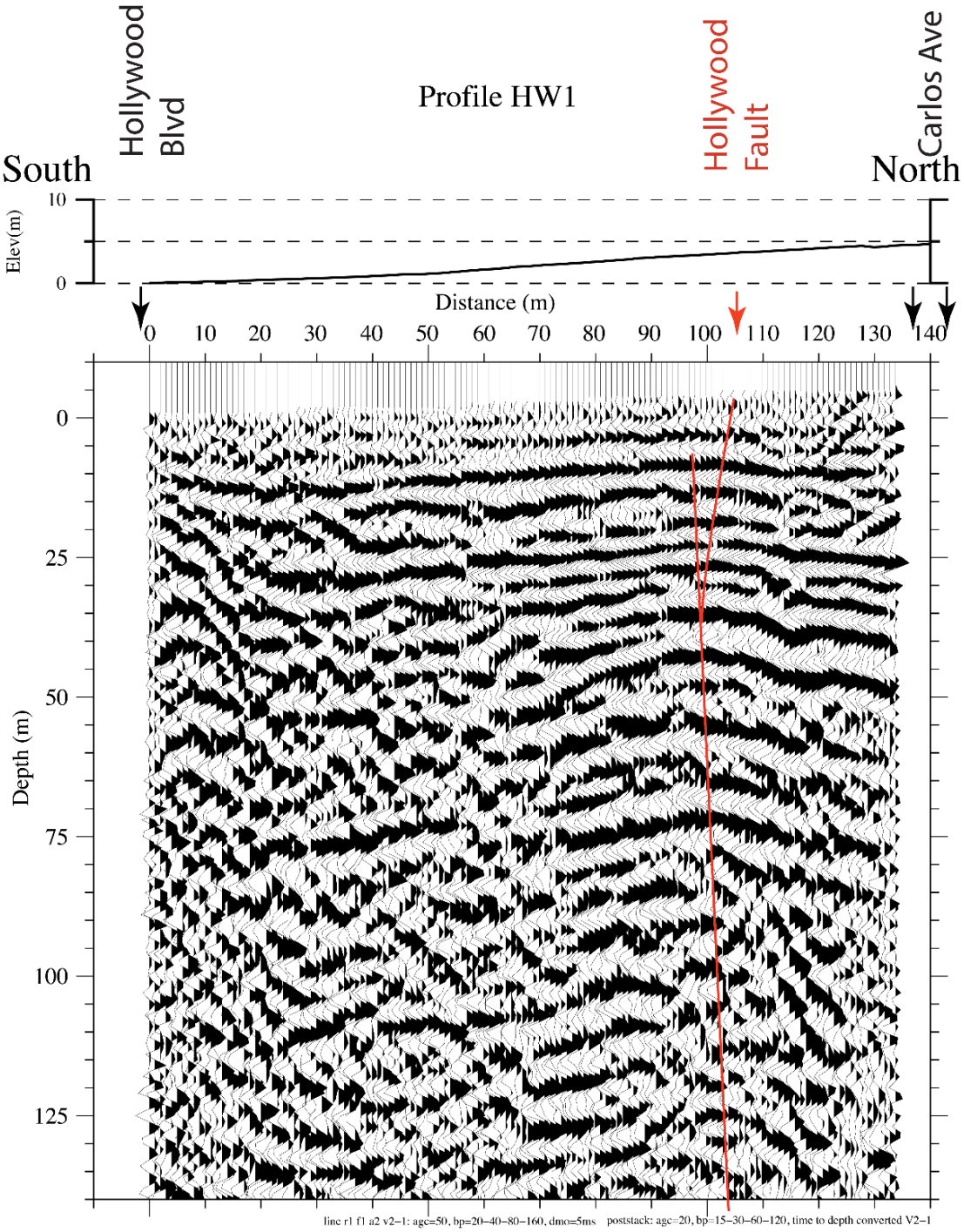

Figure 16. Low-resolution S-wave reflection stack for Profile HW1. Folds and diffractions are apparent beneath the inferred location of Hollywood Fault (red lines), beginning at about 10 m depth and extending to base of reflection image. Such disrupted layering is typically seen on reflection images of faulted strata. Locations of nearby streets are shown. Abbreviation: m, meter(s).

tomography/MAS$_R$W Poisson's ratios, (10) hybrid tomography/MAS$_L$W V_P/V_S ratios, (11) hybrid tomography/MAS$_L$W Poisson's ratios, (12) P-wave reflection, and (13) S-wave reflection. All 13 images presented here are consistent with a near-vertical fault located near meters 100 to 106 of Profile HW1. We suggest that the guided-wave results are likely most diagnostic of the location of faulting nearest the surface.

Guided-Wave Results for Profile HW2

We evaluated two guided-wave seismic datasets recorded along Profile HW2, and both were recorded on the night of May 24, 2018, using the same recording system as was used along Profile HW1. However, the recording array for Profile HW2 was located along North Argyle Avenue, where significant traffic noise occurs. A total of 123 recording stations were surveyed along Profile HW2, but seismographs were not deployed at 11 stations owing to the presence of obstacles such as driveways and buried pipes. Of the stations deployed, six seismographs did not record data.

The first guided-wave survey (HGW2) along Profile HW2 used the same source location (SP1) as was used for the HGW1 guided-wave survey along Profile HW1 (fig. 2). A total of 157 AWD shots were stacked to generate the guided waves for the HGW2 guided-wave survey. The perpendicular distance from SP1 to Profile HW2 was approximately 560 m, with longer distances to the north and to the south of the profile. The seismic sources (shots) for the HGW2 survey began on May 24, 2018, at 20:24:43 (local time) and continued until 20:43:33.

The second guided-wave survey (HGW3) recorded along Profile HW2 used the same recording array as was used in the HGW2 survey; however, the seismic source (SP2) was located near the center of the Profile HW1 recording array (fig. 3), such that SP2 was located at the fault location inferred from an earlier borehole survey. The perpendicular distance from SP2 to Profile HW2 (Argyle Avenue) was approximately 350 m. We used a total of 151 AWD shots (stacked) to generate guided waves for the HGW3 seismic survey. The HGW3 survey shots began on May 24, 2018, at 21:29:37 (local time) and continued until 21:47:09. Ten of the seismographs used during the HGW3 survey did not record data.

Data Analysis for Guided-Wave Survey HGW2

Guided waves from the HGW2 survey were not easily identified because of high cultural-noise levels along Profile HW2 (North Argyle Avenue). In addition, heavy traffic along the overpass (Highway 101) over North Argyle Avenue, as well as heavy traffic on Hollywood Boulevard and subway trains, appear to be the major sources of noise that significantly reduced the signal-to-noise ratio of the HGW2 data. However, with approximately 157 stacked shots, the S-wave and later arrivals can be identified from data derived from the southern part of the HGW2 survey (fig. 17). From those data, we measured the PGV of the data from about 0.8 to about 2.0 s. The highest PGV values appear to be concentrated near Carlos Avenue and south of Yucca Street (figs. 18*A*, *B*) for the HGW2 survey. Although we urge extreme caution in evaluating the PGV of guided waves from such noisy data, the data suggest that guided waves may have been recorded south of Carlos Avenue and south of Yucca Street. The relatively high PGV values near Carlos Avenue and Yucca Street occur at times consistent with those expected for guided waves, traveling at about 50 percent of the apparent V_S.

We also evaluated data north of Yucca Street, but the noise levels from the Highway 101 overpass were so high that we did not include those data in this report. We also observed relatively high PGV values between Yucca Street and Highway 101, but owing to the high cultural-noise levels, we have little confidence that the high PGV values are derived from guided waves. Thus, we suggest that the guided waves recorded on the HGW2 survey are indeterminate with respect to faulting and that performing a survey later at night, when cultural and highway noises are less prevalent, might have been more determinate.

Data Analysis for Guided-Wave Survey HGW3

We acquired the HGW3 survey with the source at SP2 (First Presbyterian Church of Hollywood parking lot) and the recording array located along Profile HW2 (North Argyle Avenue). Data from the HGW3 survey also are very noisy (fig. 18) owing to the same noise sources described above for the HGW2 survey. It appears that those noise sources were even greater than was observed during the

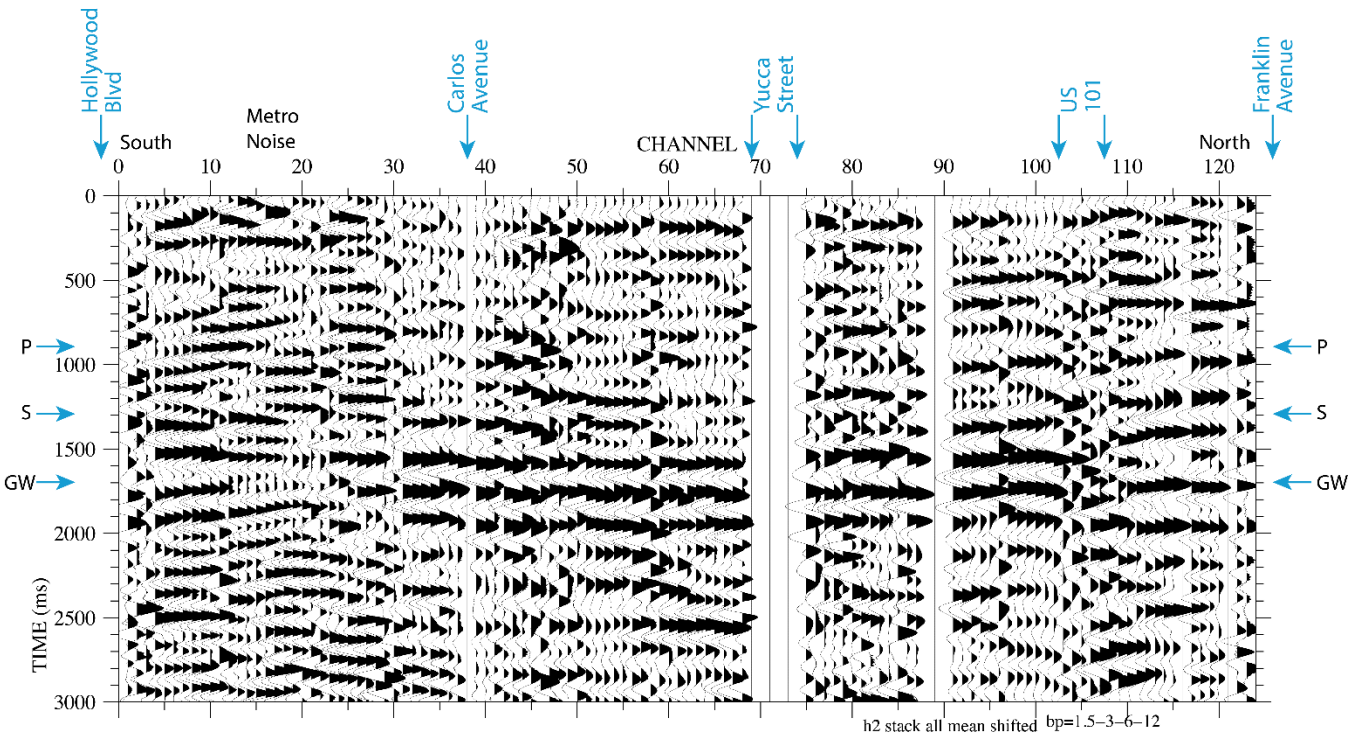

Figure 17. Stacked guided-wave shot gather for Profile HW2 (guided-wave survey HGW2). Source is located at SP1; recording array is located along Profile HW2. Source and recording array are separated by about 560 m. High levels of cultural noise, which are prevalent before the P-wave arrival, are shown on shot gather, especially between channels 1 and 30 and near channel 105. Such high levels of cultural noise make it difficult to evaluate guided waves. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1.5 and 12 Hz. Locations of nearby streets are shown. Other abbreviation: ms, millisecond(s).

HGW1 survey, possibly because there was less traffic during the 21:00 hour time frame, which may have allowed for faster moving vehicles and greater overall noise.

With 151 shots stacked, the main S-wave and apparent guided waves were difficult to identify on the shot gather (fig. 19). However, from the stacked data, we measured PGV values for the part of the survey that was south of Yucca Street (figs. 20*A*, *B*, *C*, *D*). We observe high PGV values in nearly the same location as seen from the HGW2 seismic survey, particularly south of Carlos Avenue and south of Yucca Street. However, we also observe high PGV values slightly north of Hollywood Boulevard, which are likely attributable to noises from the subway and from traffic on Hollywood Boulevard because the travel times are inconsistent with those expected for guided waves. In contrast, the high PGV values south of Carlos Avenue and south of Yucca Street occur at the approximate time expected for guided waves when the source is located at SP2.

Tomography, MASW, and Reflection Results for Profile HW2

We acquired an in-line, active-source P-wave seismic survey (HRR3) along Profile HW,2 using P-wave shots and vertical-component sensors that were attached (via refraction cables) to two Geometrics RX-60, multichannel seismographs. Unlike the guided-wave surveys (HGW2 and HGW3), we did not deploy sensors north of Yucca Street owing to the difficulty in deploying cables across Yucca Street; thus, the HRR3 survey was only about 200 m long. We used 66 vertical-component sensors and 63 AWD shot points for the HRR3 seismic survey. The AWD shots and sensors were colocated (1.5 m lateral offset) and spaced at 3-m intervals. The data were recorded for 2 s at a sampling

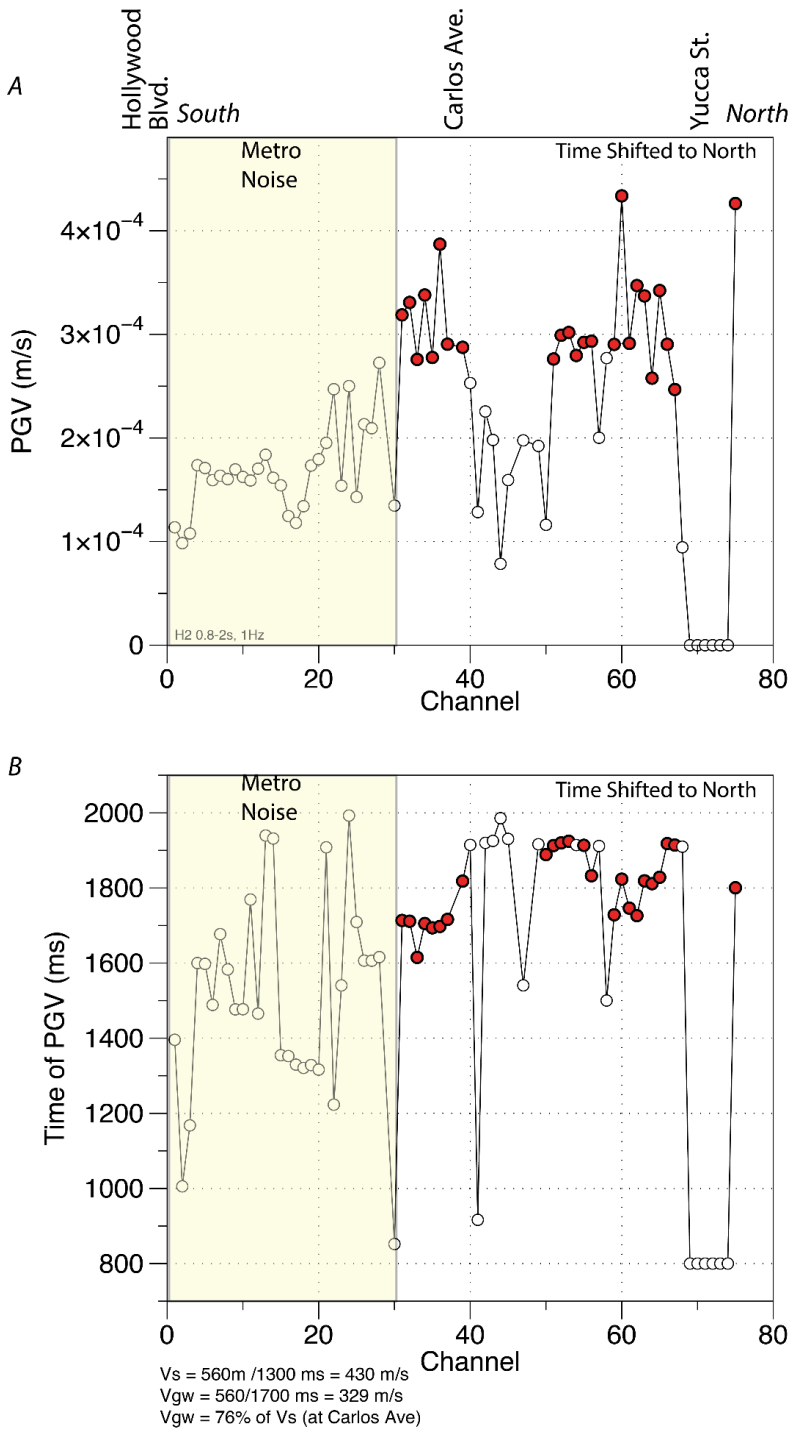

Figure 18. *A*, Plot of peak ground velocities (PGV) of guided waves for each recording channel along part of Profile HW2 (guided-wave survey HGW2), showing locations of nearby cross streets. Owing to high levels of cultural noise from Highway 101 north of Yucca Street, PGV values for channels north of Yucca Street were deleted from plot. Yellow shading highlights channels that have high levels of cultural noise south of Carlos Avenue (see fig. 17). *B*, Plot of travel times from SP1 to Profile HW2. Travel times on north end of Profile HW2 were shifted to allow analysis within a limited time window, as higher propagation velocities on north end of profile resulted in shorter travel times. High PGV values on PGV plot correlate with delayed travel times on travel-time plot. Although contaminated with noise, high PGV values (red dots) may infer possible fault locations along profile HW2. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

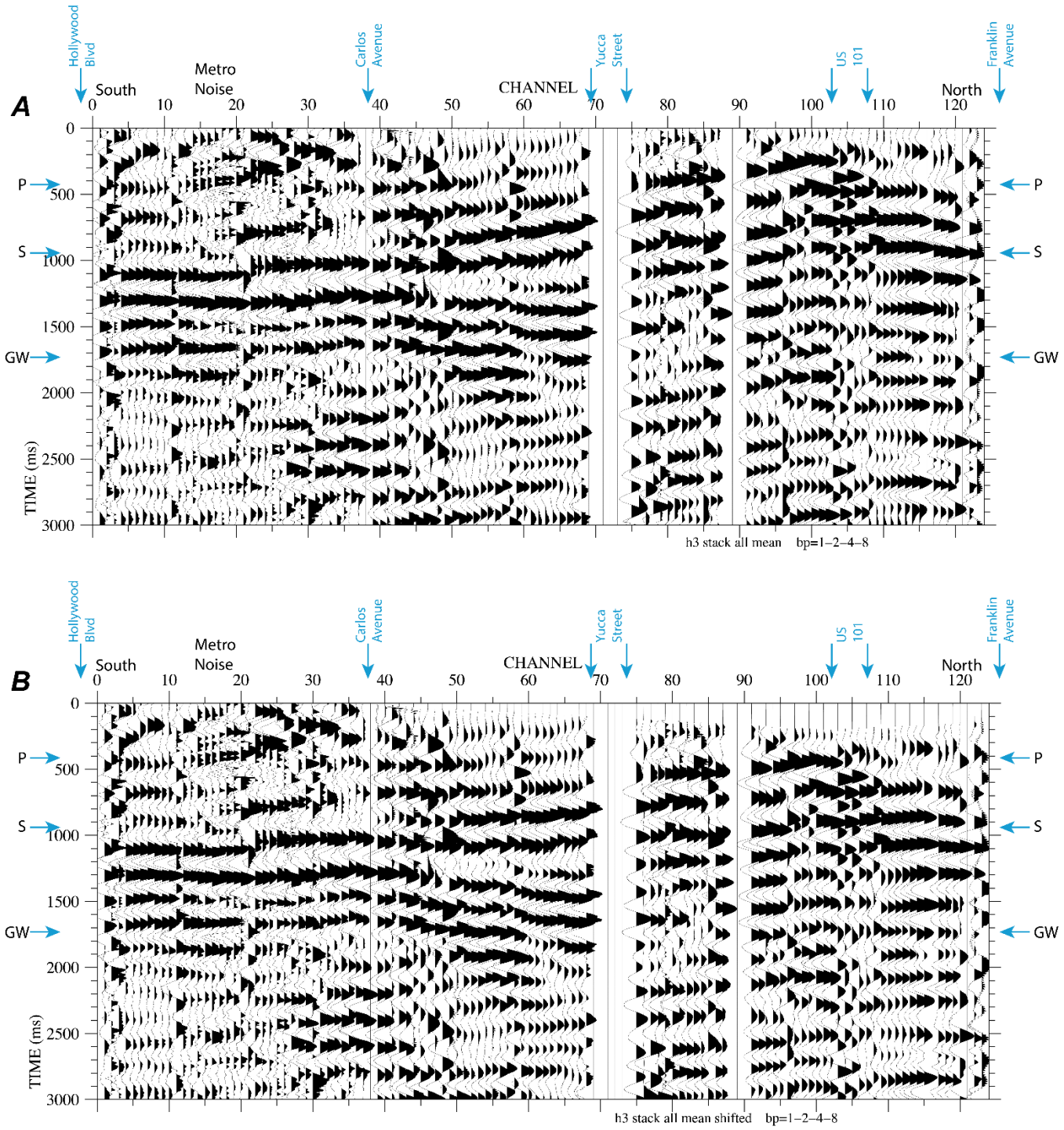

Figure 19. Stacked guided-wave shot gathers for Profile HW2 (guided-wave survey HGW3), showing (*A*) without time shifts to account for differences in propagation velocities and (*B*) with time shifts to account for differences in propagation velocities. Source was located at SP2: recording array was located along Profile HW2. There is about 350 m between the source and the recording array. High levels of cultural noise, which are prevalent before P-wave arrival, are shown on shot gather, especially between channels 1 and 30 and near channel 105. Such high levels of cultural noise make it difficult to evaluate guided waves. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1.5 and 12 Hz. Locations of cross streets are shown. Other abbreviation: ms, millisecond(s).

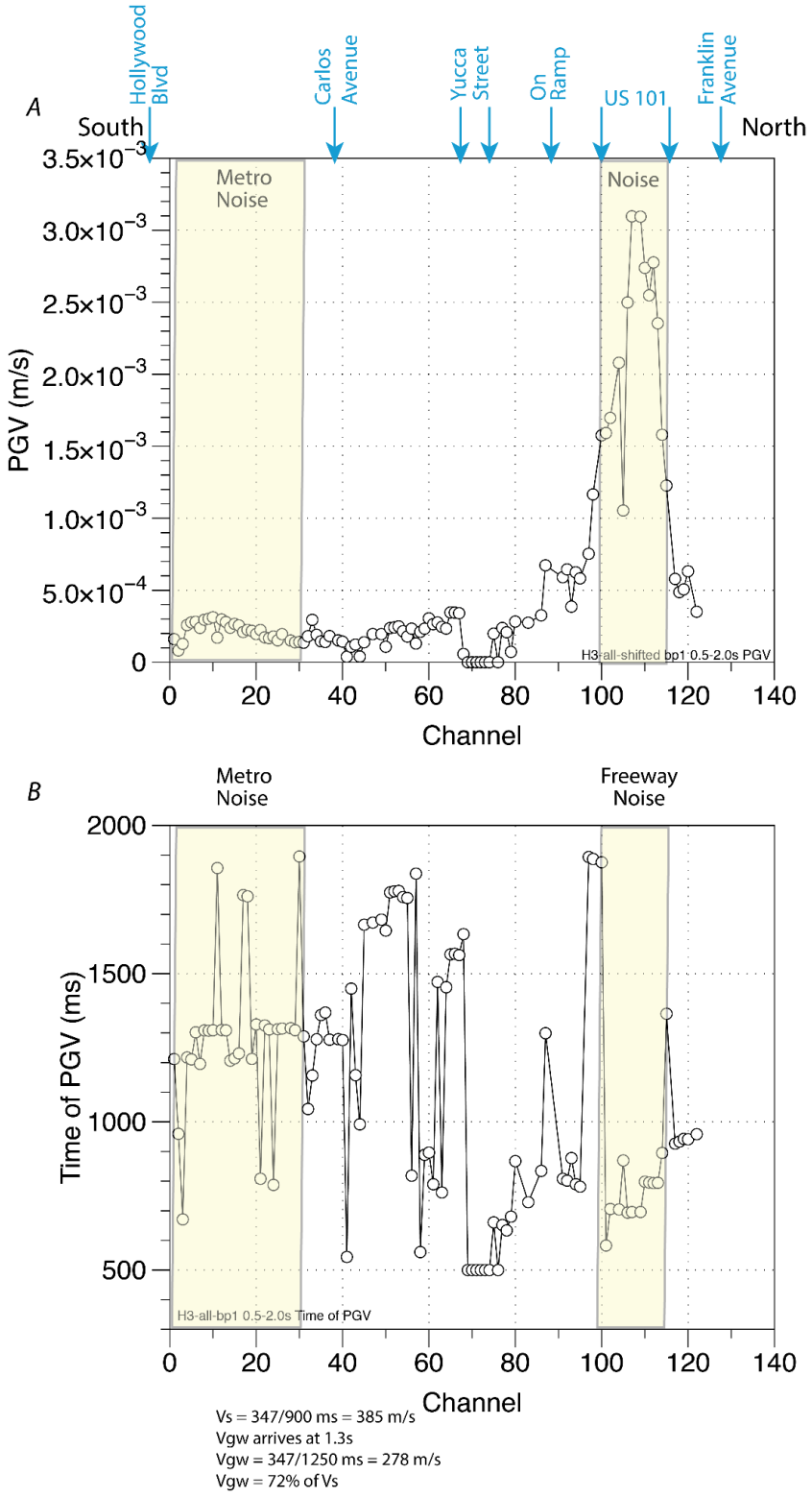

Figure 20. *A*, Plot of all peak ground velocities (PGV) of guided waves for each recording channel along part of Profile HW2 (guided-wave survey HGW3), showing locations of nearby cross streets. *B*, Travel times of PGV values shown in *A*. Extremely high PGV values centered near Highway 101 have travel times and velocities that are inconsistent with those expected for guided waves; thus, we suggest that very high PGV values observed for stations near Highway 101 result from freeway noise and not from guided waves; most other PGV values along Profile HW2 are much lower. Slightly higher values are seen on channels 1 to 30, and those higher values may

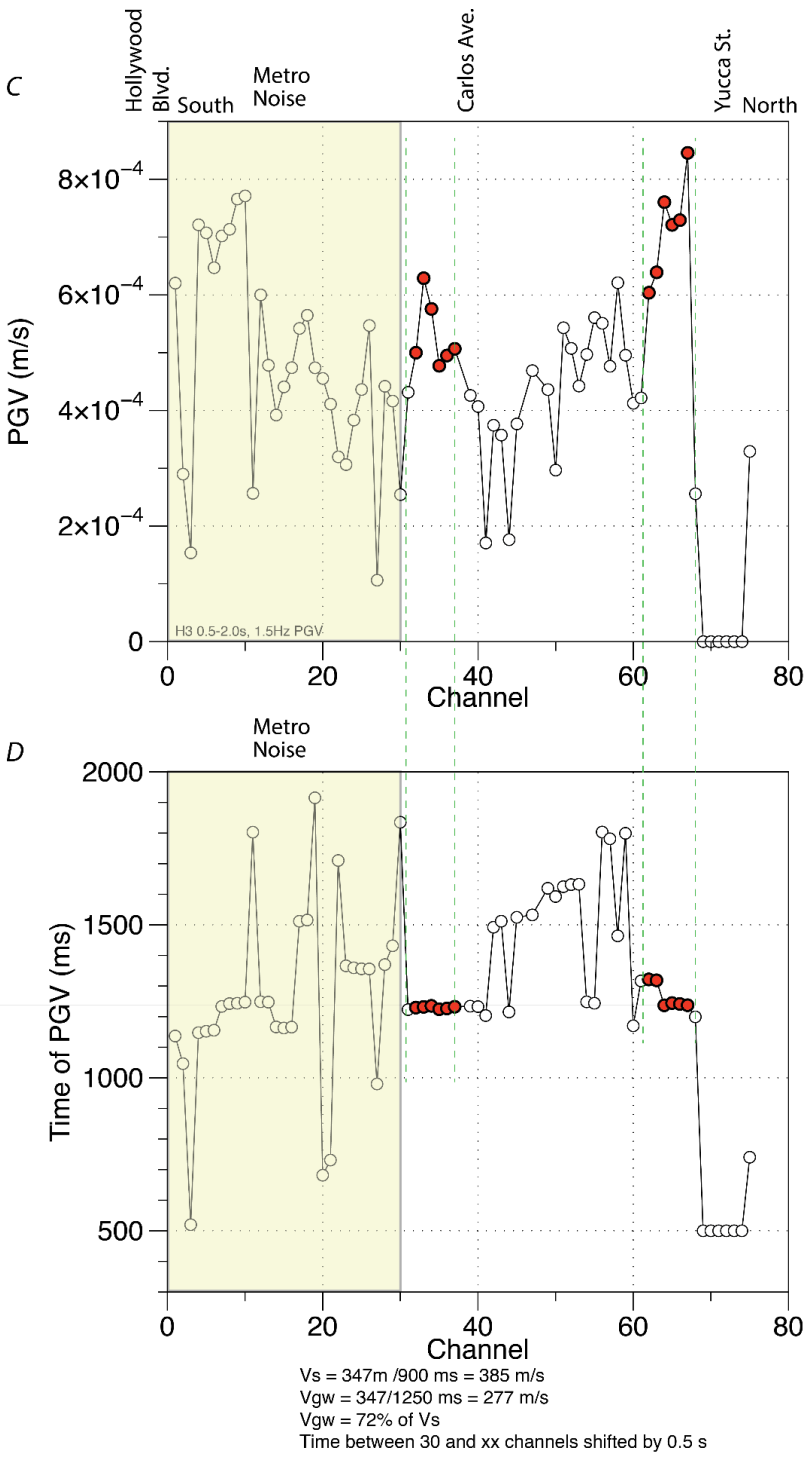

Figure 20 (cont.) result from cultural noises (cars or subway); however, travel times for slightly higher PGV values are generally in time frame expected for guided waves. C, Plot of PGV of guided waves along part of Profile HW2 (guided-wave survey HGW3) south of Yucca Street. High cultural noise is prevalent for channels 1 to 30, making it difficult to determine whether higher PGV values in that range result from guided waves. D, Travel times of PGV values shown in C. Relatively high PGV values (red dots) slightly south of Carlos Avenue and south of Yucca Street have travel times and propagation velocities that are consistent with expectations of guided waves; thus, we suggest possible faulting at those locations (see dashed green lines). Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

rate of 0.5 ms. Cultural-noise levels were high along North Argyle Avenue at the time of data acquisition, and the resulting shot gathers were noisy (fig. 21). As a result, we evaluated V_S data that were derived from the surface-wave (Rayleigh wave) data using the MASW technique (fig. 22). Combining the tomographic V_P and the MASW V_S data, we evaluated V_P/V_S ratios and Poisson's ratios along Profile HW2 (figs. 23, 24, respectively).

Profile HW2 V_P Model

We used the data from the HRR3 survey to develop a V_P model (fig. 22) for Profile HW2. The V_P values range from 400 m/s near the surface in the south to about 3,300 m/s at about 70 m depth near the center of the profile. An abrupt change in shallow velocities (~400 m/s) is observed at Carlos Avenue, with higher velocities to the north at shallow depths and progressively thicker lower velocity materials southward toward Hollywood Boulevard. The abrupt change in shallow V_P at Carlos Avenue is similar to the change in V_P seen along Profile HW1 at the apparent Hollywood Fault (fig. 7). The abrupt change in V_P along both Profiles HW1 and HW2 occurs coincident with the zone of apparent high PGV values seen from guided waves. A similar change in V_P also is observed just south of Yucca Street, where PGV of guided waves is locally high. Thus, both guided waves and V_P are suggestive of near-surface faulting slightly south (10–25 m) of the center of Carlos Avenue and about 20 to 35 m south of the center of Yucca Street.

Profile HW2 V_S Model (from MAS$_R$W)

From Rayleigh waves generated during the HRR3 seismic survey, we a developed MASW-based V_S model (fig. 23) for Profile HW2. Our V_S model shows that V_S ranges from 200 m/s near the surface

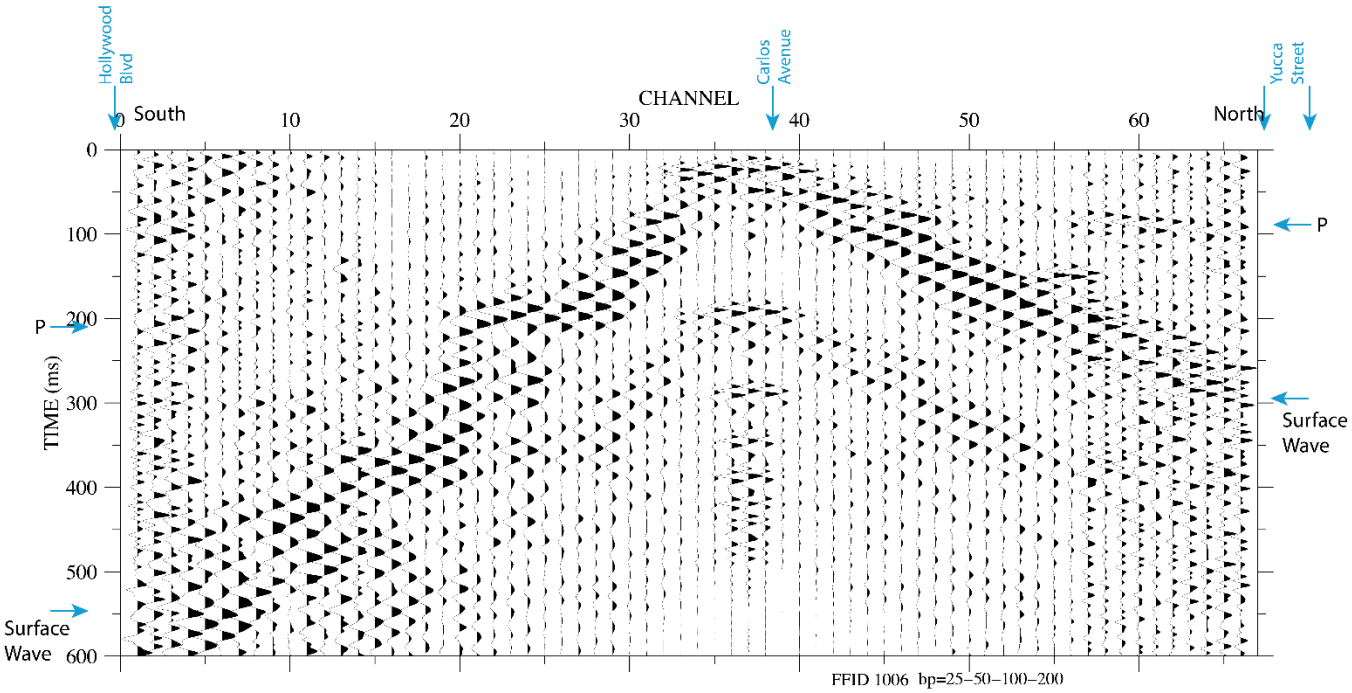

Figure 21. In-line P-wave shot gather along Profile HW2, south of Yucca Street. High cultural noise levels are particularly noticeable for channels 1 to 15. Multiples, owing to bouncing of seismic source (AWD), are prominent at travel times greater than 200 ms. Zone of asymmetric surface waves and refracted arrivals is present north and south of shot point, demonstrating large differences in structure to south versus to north. Locations of nearby streets are shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

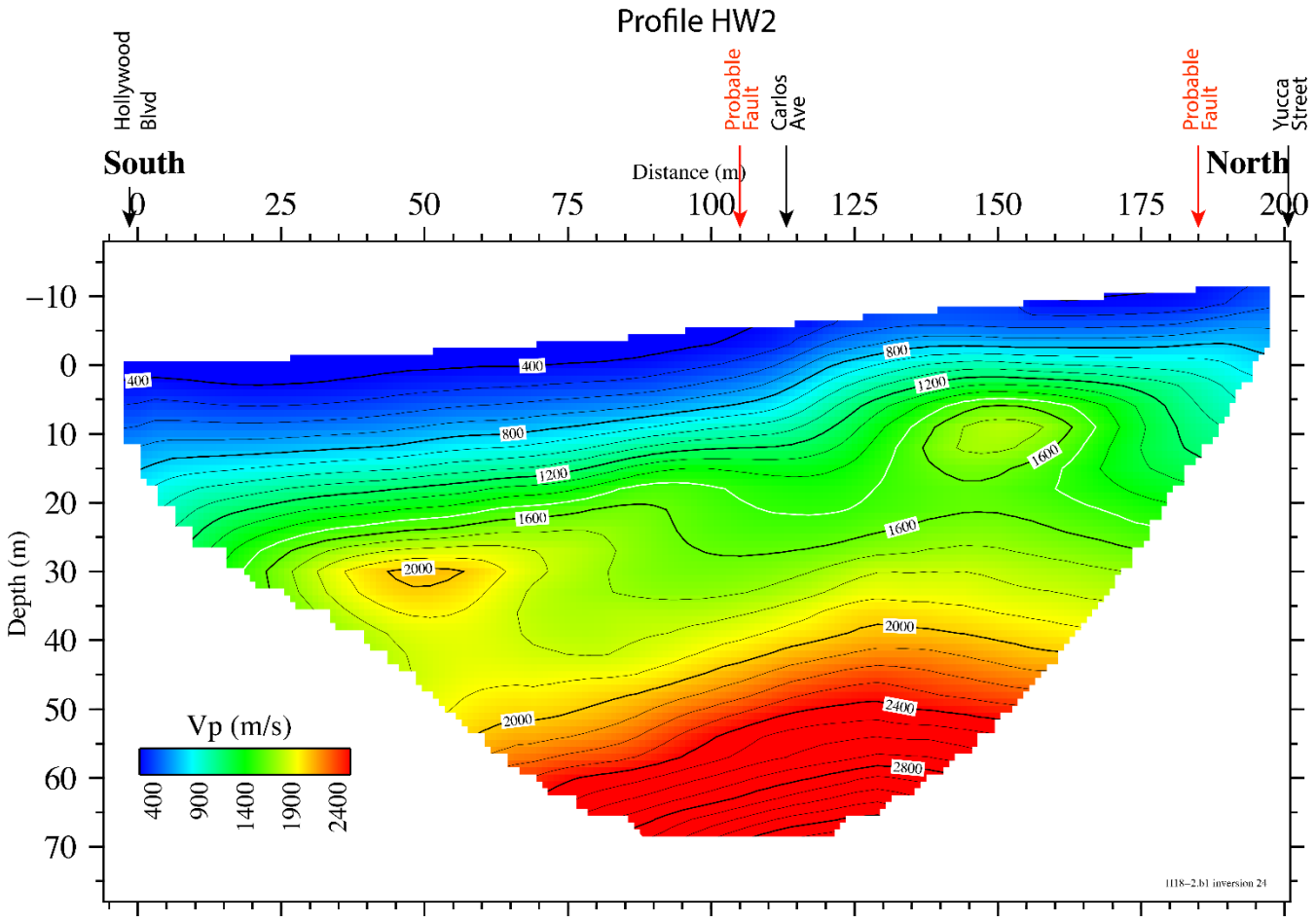

Figure 22. Tomographic P-wave velocity (V_P) model along Profile HW2, showing locations of cross streets. Prominent V_P anomalies are present along seismic profile, such as abrupt shallowing of 400-m/s velocity contour near Carlos Avenue. Similar change in velocity is observed at near-surface trace of Hollywood Fault along Profile HW1. This is also same location that relatively high PGV values are observed on guided-wave PGV plots (see fig. 20). We interpret second change in shallow-depth V_P south of Yucca Street, also consistent with guided-wave PGV values, to infer faulting. Other abbreviations: m, meter(s); s, second(s).

on the southern profile to about 675 m/s at about 30-m depth south of Carlos Avenue. From the south end of Profile HW2 (at Hollywood Boulevard) to approximately Carlos Avenue, a 7- to 10-m-thick zone of low-V_S (<300 m/s) materials is present in the near surface; this layer pinches out at Carlos Avenue in a manner similar to that seen in the tomographic V_P model (fig. 7). Between that 7- to 10-m-thick layer and the base of the model, V_S is high relative to the north end of Profile HW2. A major lateral transition in V_S is observed at all depths of the model, suggesting that a major change in structure is present, likely caused by faulting. Our V_S model also shows that a pronounced, southward-dipping, low-velocity zone is present south of Yucca Street, as was also inferred on the V_P model. This southward-dipping velocity structure may infer a southward-dipping fault south of Yucca Street. Both the V_P and V_S models suggest that an isolated zone of relatively high velocities is present near the surface between meters 130 and 160.

Profile HW2 V_P/V_S Model (V_P Tomography and V_S MASRW)

Using V_P from the tomography model (fig. 22) and V_S from the MASW-based model (fig. 23), we developed a V_P/V_S–ratio model (fig. 24) for Profile HW2. Our model suggests that V_P/V_S ratios range from about 1.5 near the surface south of Carlos Avenue to about 4.8 below 10 m depth between Carlos

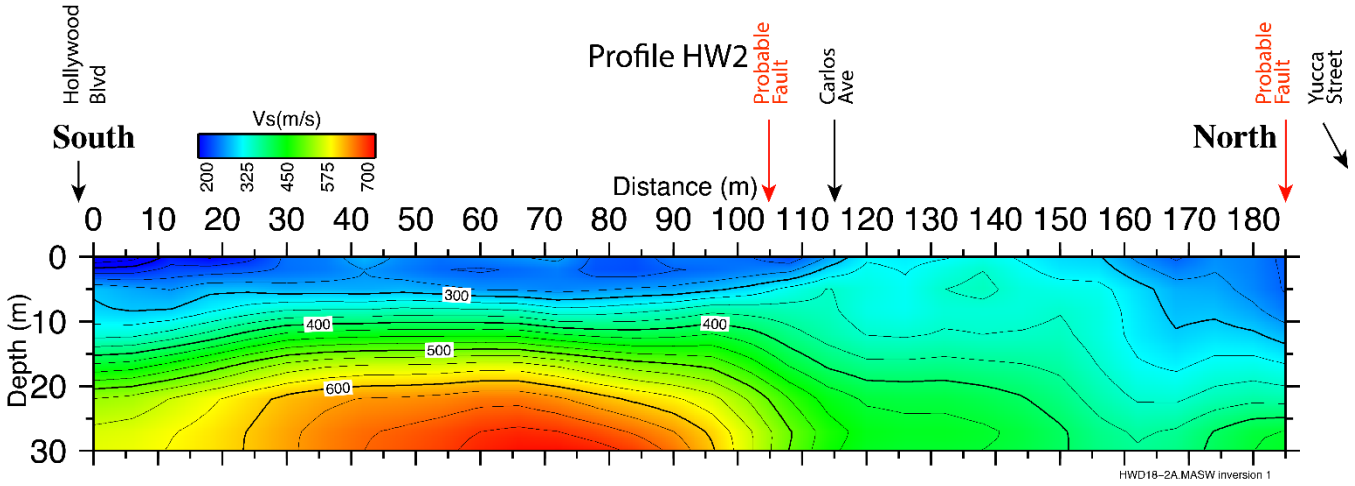

Figure 23. S-wave velocity (V_S) model along Profile HW2, inferred from Rayleigh waves using the multichannel analysis of surface waves (MASW) method. V_S model shows abrupt increase in V_S north of Carlos Avenue, with shallow structure similar to that modeled for V_P model. Higher velocities (>400 m/s) are abruptly terminated near Carlos Avenue, suggesting slightly northwestward dip of probable fault. Change in V_S also is observed south of Yucca Street, with prominent near-vertical low-velocity zone, inferring possible southwestward dip of fault there. Locations of nearby streets are shown. Other abbreviations: m, meter(s); s, second(s).

Avenue and Yucca Street. The zone of highest V_P/V_S ratios is relatively wide near the top and decreases in width with depth, which suggests that two opposing faults join at depth. Thus, on the basis of our V_P, V_S, and V_P/V_S models, we suggest a northward-dipping fault near Carlos Avenue and a southward-dipping fault south of Yucca Street.

Profile HW2 Poisson's Ratio Model (V_P Tomography and V_S MAS$_R$W)

Using the same V_P and V_S models as used to develop our V_P/V_S–ratio model, we developed a Poisson's ratio model for Profile HW2 (fig. 25). The Poisson's ratio model infers a similar structure as that of the V_P/V_S–ratio model. Generally, subsurface materials in the upper about 20 m along Profile HW2 differ markedly from south to north, with the major change occurring at Carlos Avenue. This lateral variation in Poisson's ratio values suggests a significant change in shallow-crustal properties that are likely related to groundwater saturation. Because faults usually act as groundwater barriers, this pronounced lateral change in Poisson's ratio is consistent with the presence of a fault near Carlos Avenue. The highest Poisson's ratio values along our model are confined to a zone between Carlos Avenue and Yucca Street, which would be consistent with bounding faults near Carlos Avenue and slightly south of Yucca Street.

Summary of Seismic Indicators of Faulting along Profile HW2

We evaluated five seismic models along Profile HW2, including (1) PGV of guided waves from two source locations, (2) tomographic V_P, (3) MASW V_S, (4) hybrid tomography/MAS$_R$W V_P/V_S ratios, and (5) hybrid tomography/MAS$_R$W Poisson's ratios. All of these models show prominent changes in shallow-depth structure near Carlos Avenue and slightly south of Yucca Street that are consistent with shallow faulting in those locations. We interpret these images as indicating a shallow-depth, northward-dipping fault near Carlos Avenue and a shallow-depth, southward-dipping fault south of Yucca Street, with both faults merging in the shallow subsurface.

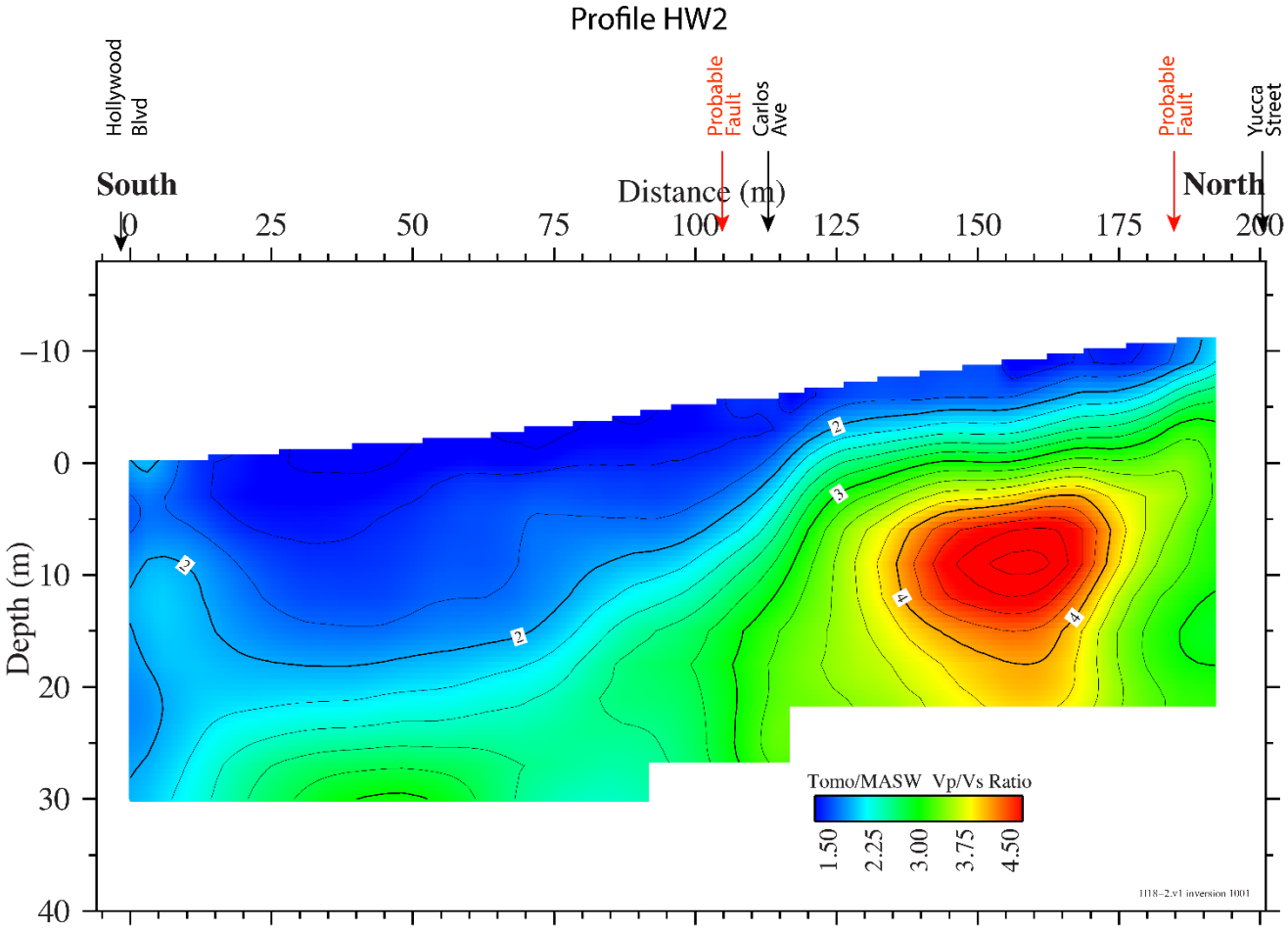

Figure 24. V_P/V_S ratio model along Profile HW2, derived from combination of our V_P tomography model and our MASRW V_S model. Shallow-depth, abrupt changes in V_P/V_S ratios are present in vicinity of Carlos Avenue and south of Yucca Street. Prominent V_P/V_S-ratio high is present at slightly greater depths between two abrupt changes in V_P/V_S ratios. This structure can be interpreted as showing two opposing fault traces. Locations of nearby streets are shown. Abbreviation: m, meter(s).

Summary of Observations, Hollywood Fault

We evaluated 13 seismic models and data combinations along Profile HW1 at the First Presbyterian Church of Hollywood parking lot (fig. 3). All of those data are consistent with near-surface faulting near meter 106 of Profile HW1, slightly south of Carlos Avenue. On the basis of the combined seismic data, we interpret the fault to slightly splay near the surface, having both northward and southward dips at shallow depths but a northward dip at depth. On the basis of the location of the fault identified in core borings and CPT transects at the Hollywood Courthouse building and our observed location along Profile HW1, we suggest that the fault strikes about N. 87° E. and has variable dips in the shallow subsurface. However, on the basis of the unmigrated reflection images, we suggest that the fault dips slightly northward at depth.

We evaluated five seismic models and data combinations along Profile HW2 along North Argyle Avenue in Hollywood. All of those data are consistent with, but not definitive of, near-surface faulting slightly south of Carlos Avenue and south of Yucca Street. Furthermore, additional fault traces may be

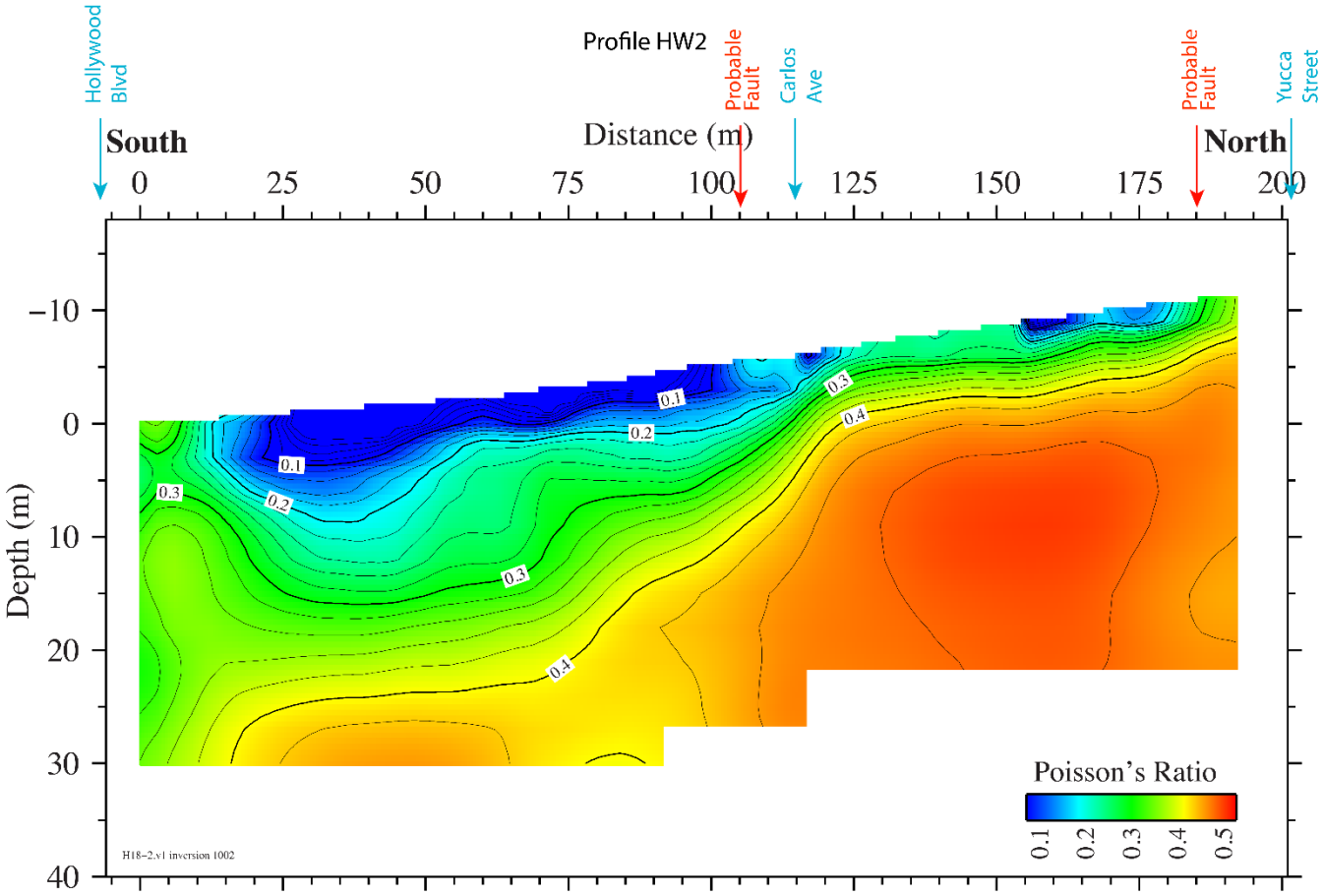

Figure 25. Poisson's ratio model along Profile HW1, derived from combination of our V_P tomography model and our MASRW V_S model. Shallow-depth, abrupt changes in Poisson's ratios are observed in vicinity of Carlos Avenue and south of Yucca Street. Prominent Poisson's-ratio high is present at slightly greater depths between two abrupt changes in near-surface Poisson's ratios, which we interpret as a highly saturated zone between two faults. Locations of nearby streets are shown. Abbreviation: m, meter(s).

present along Profile HW2, but the high levels of cultural noise in our data make it difficult to infer faulting elsewhere along North Argyle Avenue. On the basis of the fault locations along Profiles HW1 and HW2 inferred from our data, we suggest that this strand of the Hollywood Fault strikes almost due east-west between the core boring/CPT transect at the Hollywood Courthouse and our seismic profile along North Argyle Avenue. Although traces of the fault may have variable dips in the shallow subsurface, we suggest that the overall dip is near vertical, with a slightly northward dip at depth.

Santa Monica Fault Data Acquisition (Beverly Hills)

On May 26, 2018, and on June 6, 2018, we conducted guided-wave seismic surveys across the suspected near-surface trace of the Santa Monica Fault in Beverly Hills, Calif. The recording array for both seismic surveys was located on the east side of Lasky Drive, between Moreno Drive and Santa Monica Boulevard (fig. 26). We refer to this profile as Profile BH1, and we refer to the two individual surveys as BHGW1 and BHGW2.

Survey BHGW1 was about 300 m long and consisted of approximately 149 recording sites, but six of the sites were not used because they would have blocked driveways. The data from survey BHGW1 were recorded on 4.5-Hz horizontal-component sensors, spaced at 2-m intervals, but data were not recorded at 20 sites owing to instrumental failures. The sampling rate was 2 ms. The seismic source

Figure 26. Google Earth image of Santa Monica Fault in our study area in Beverly Hills, showing locations of seismic surveys (BHGW1, BHGW2) recorded along Profile BH1 (cyan line). Scale (in meters [m]) is included along Profile BH1. Seismic sources were generated at SP1 and SP2 (red stars) at the near-surface trace of Santa Monica Fault, as inferred from geologic mapping. Recording arrays for BHGW1 and BHGW2 surveys were located in same place, except that BHGW2 survey extended farther north by about 50 m. Red arrows show zones where high PGV values (that have travel times consistent with guided waves) were recorded.

(227-kg AWD) used to generate guided waves was located approximately 30 m southwest of Century Park East and about 100 m southeast of Santa Monica Blvd, within an alley northwest of a parking garage. The first AWD shot started on May 26, 2018, at 21:42:05 (local time; 04:42:05 UTC), and the last shot was completed at 22:24:46 (local time; 05:24:46 UTC) on the same day. We stacked a total of 198 individual shots to form a guided-wave shot gather.

We decided to acquire a second seismic guided-wave survey (BHGW2) along Laskey Drive on June 6, 2018, when we discovered that the expected fault crossing was at the approximate north end of the BHGW1 survey, near the intersection of Lasky Drive and Charleville Boulevard. The recording stations for the BHGW2 survey were in the same locations as that of the BHGW1 survey, but the length (350 m) of the recording array for BHGW2 was slightly longer (fig. 26). Profile BH2 consisted of 174 recording stations, but recorders were not deployed at 13 stations because they would have blocked driveways. We used the same sensors (4.5-Hz), station spacing (2 m), and sampling rate (2 ms) for the

BHGW2 survey as was used for the BHGW1 survey. However, the seismic source (SP2) for the BHGW2 survey was located at SP2, about 80 m southwest of Heath Avenue and about 130 m southeast of Santa Monica Boulevard (fig. 26). The first shot started on June 6, 2018, at 22:05:42:36 (local time; 05:42:36 UTC), and the last shot was completed at 23:01:37 (local time; 06:01:37 UTC). A total of about 198 AWD shots were generated. Owing to instrumental failures, we did not obtain data from 19 of the 174 seismic recorders.

Santa Monica Fault Data Analysis

The seismic sources for the BHGW1 seismic survey were located about 500 and 647 m southwest of the southernmost and northernmost ends of Profile BH1, respectively (fig. 27). We chose this site (SP1) to generate seismic sources because it was the location of a previous coring and CPT transect, in which an active trace of the Santa Monica Fault was identified. Because the source was not centered with respect to the recording array, a difference in travel time from the south end to the north end of the array was observed. To evaluate the PGV of the guided waves within the same time window, the "moveout" of the travel time was removed by shifting the time of the more distant arrivals on the north end of the profile. Thus, the actual travel time of the guided waves on the north end of the recording array was greater by about 500 ms than what is shown in figure 27.

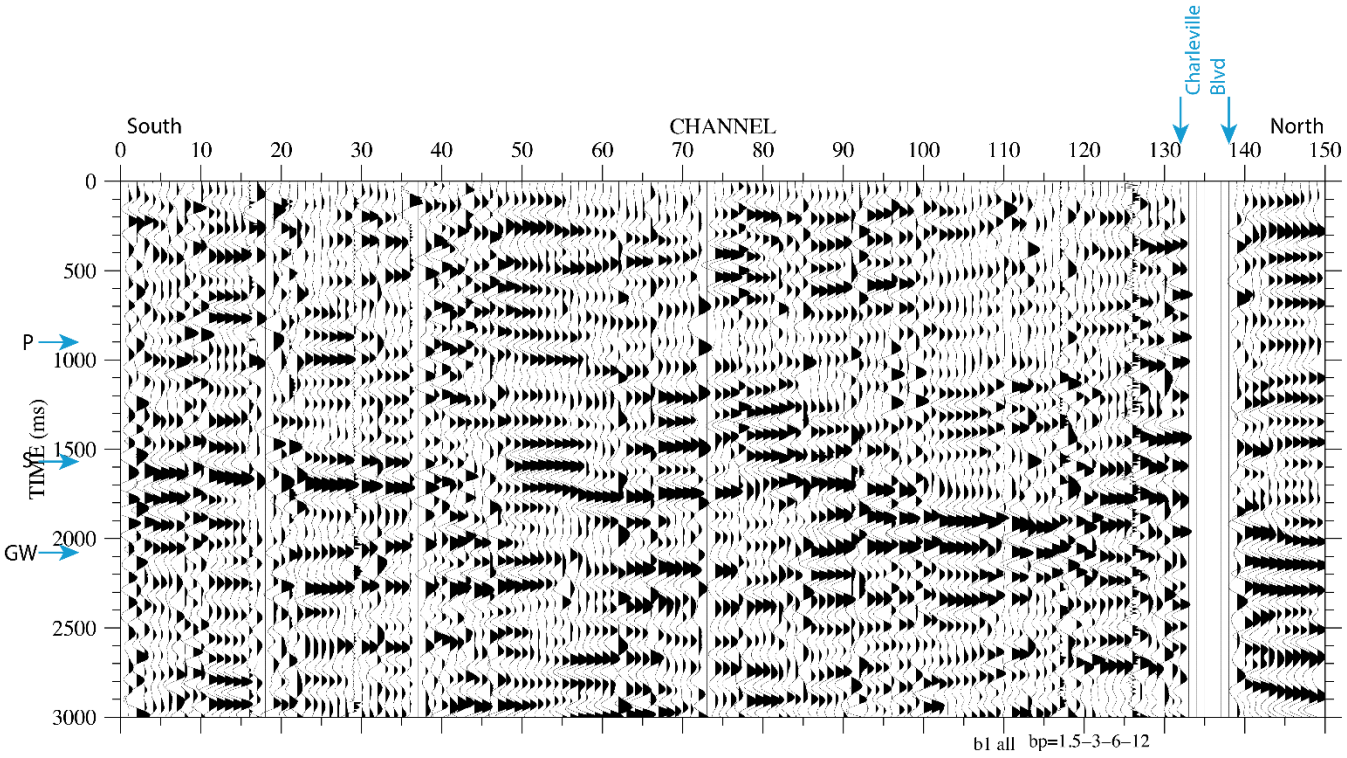

Figure 27. Stacked guided-wave shot gather for BHGW1 seismic survey. Source is located at SP1; recording array is located along Profile BH1 (distance between source and recording array ranges from about 500 to about 650 m). Long propagation distance and high level of cultural noise resulted in poor signal-to-noise ratios. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1.5 and 12 Hz. Location of Charleville Boulevard is shown. Other abbreviation: ms, millisecond(s).

Guided-Wave Data Analysis for Profile BH1

The signal-to-noise ratio of the data acquired during the BHGW1 seismic survey was low (fig. 27) owing to excessively high cultural-noise levels during the ~21:00- to ~22:00-hour local time frame on May 26, 2018, which was a Saturday evening. However, even with the low signal-to-noise ratios, we were able to evaluate PGV of guided waves (fig. 28) within the time frame (>1.5 to 3 s) expected for shear-wave and guided-wave arrivals. On the basis of travel time and amplitude, we infer the presence of low-velocity guided waves south and north of Charleville Boulevard and possibly near the south end of Profile BH1. The observed high values of guided-wave PGV (fig. 28*A*) correlate with the expected guided-wave travel times (fig. 28*B*). Our data show that the highest PGV values arrived at the recording array at about 2,500 ms (2.5 s; ~0.5 s added to arrivals on the north end of the profile shown in fig. 28*B*), and because the source was approximately 650 m from apparent fault zone, this suggests that the guided waves traveled at about 250 m/s. The earliest shear waves arrived at the recording array at about 1,500 ms (1.5 s), suggesting an average V_S of about 330 m/s. These velocities suggest that the guided waves travel at about 75 percent of the velocity of the shear wave. Along Profile BH1, the most prominent high values of PGV are observed between channels 60 and 150 (between meters 118 and 298) of the recording array, which extends from slightly south to slightly north of Charleville Boulevard (fig. 28).

Beverly Hills Profile BH2 Guided-Waves

The signal-to-noise ratios of the data from the BHGW2 seismic survey (fig. 29) were higher than those of the data recorded for the BHGW1 survey. As a result, the shear-wave and guided-wave arrivals are more apparent on the BHGW2 data. The higher signal-to-noise ratios may have resulted from stronger signals because the seismic source (SP2) was closer to the recording array, but the higher ratios may also have resulted from lower cultural-noise levels present later in the evening (~22:00 to ~23:00 local time). Lower noise levels also were likely on a Wednesday evening (June 6, 2018) than on a Saturday evening.

From the data obtained during the BHGW2 seismic survey, we evaluated PGV values of guided waves from the time of the shear-wave arrival (~1 s) to about 3.2 s (includes a 0.5-s time shift on the north end of the profile; see fig. 30). Our PGV values are averaged over three consecutive arrivals to limit large variations from a single arrival. On the basis of travel time and amplitude, the low-velocity guided waves appear easy to identify. High-PGV values (fig. 30*A*) correlate with the expected guided-wave travel times (and velocities) along Profile BH2 (fig. 30*B*). Our data show that the highest PGV values arrived at the recording array at 2,000 to 2,500 ms (2.0–2.5 s; includes the time shift), and, using distance from the source (368–510 m) to the fault traces, we found that the guided waves traveled at about 185 to 200 m/s. These guided-wave velocities are lower than those estimated for the BHGW1 survey because of the greater distance and deeper propagation depth of guided waves between SP1 and the BHGW1 recording array. The earliest shear wave for the BHGW2 survey arrived at the recording array at about 1,500 to 2,000 ms (1.5–2.0 s), suggesting an average V_S of about 245 to 255 m/s. This suggests that the guided wave travels at about 75 to 78 percent of the velocity of the shear wave.

Along Profile BH2, the most prominent late-arriving, high-PGV values are seen at stations (channels) 120 to 135 (meters 238–268) and 145 to 152 (meters 288–302) of the recording array; these stations were located in the vicinity of Charleville Boulevard, suggesting that prominent fault traces are present in that area. However, late-arriving, locally high PGV values also were observed near stations 11 to 28, 78 to 82, and 95 to 102. The high-PGV values observed at these stations also coincide with late arrivals that are consistent with guided waves. Similarly PGV-value zones also were seen on the BHGW1 survey, which were contaminated with cultural noise. Because of the consistent travel-time delays and high amplitudes, we suggest that each of the high-PGV values listed above likely are fault related. Because of the prominent PGV peaks and observed travel times (velocities) near Charleville Boulevard, we suggest that those probable faults are the ones most directly connected to the fault trace at

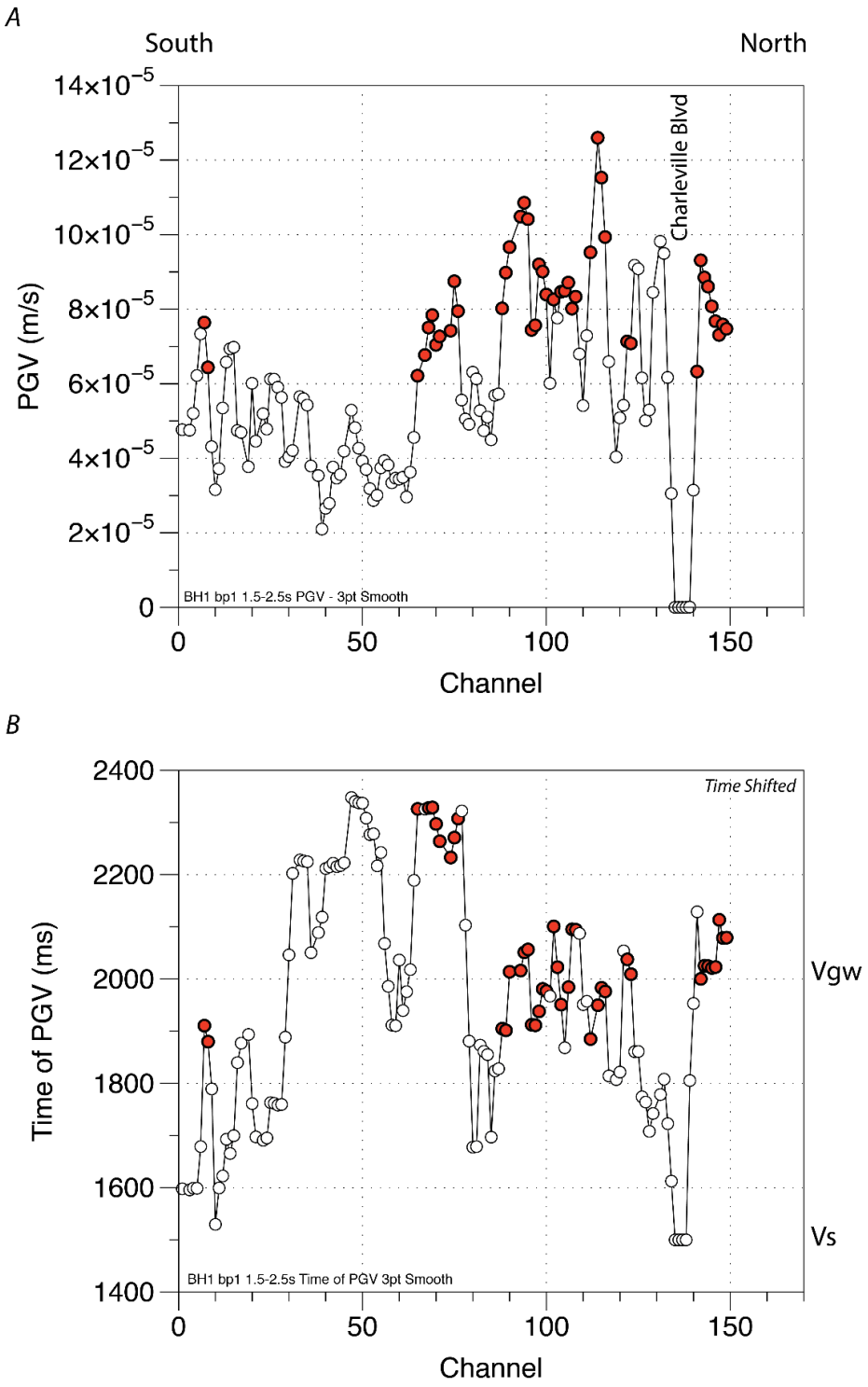

Figure 28. *A*, Plot of peak ground velocity (PGV) of guided waves for each recording channel along BHGW1 survey. Highest PGV values (red dots) were concentrated on north end of recording array, both north and south of Charleville Boulevard; indications of relatively high values also are present at several locations along Lasky Drive. *B*, Plot of time of arrival of corresponding PGV values shown in *A*. Note that highest PGV values coincide with delayed phases that arrive at about 1.9 to 2.1 seconds (s) or more (after 0.5-s time shift applied). Arrival times have been shifted downward on north end of profile by about 0.5 s relative to south end of profile. Owing to low signal-to-noise ratios for BHGW1 survey, uncertainty is high in possible fault traces. Location of Charleville Boulevard is shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

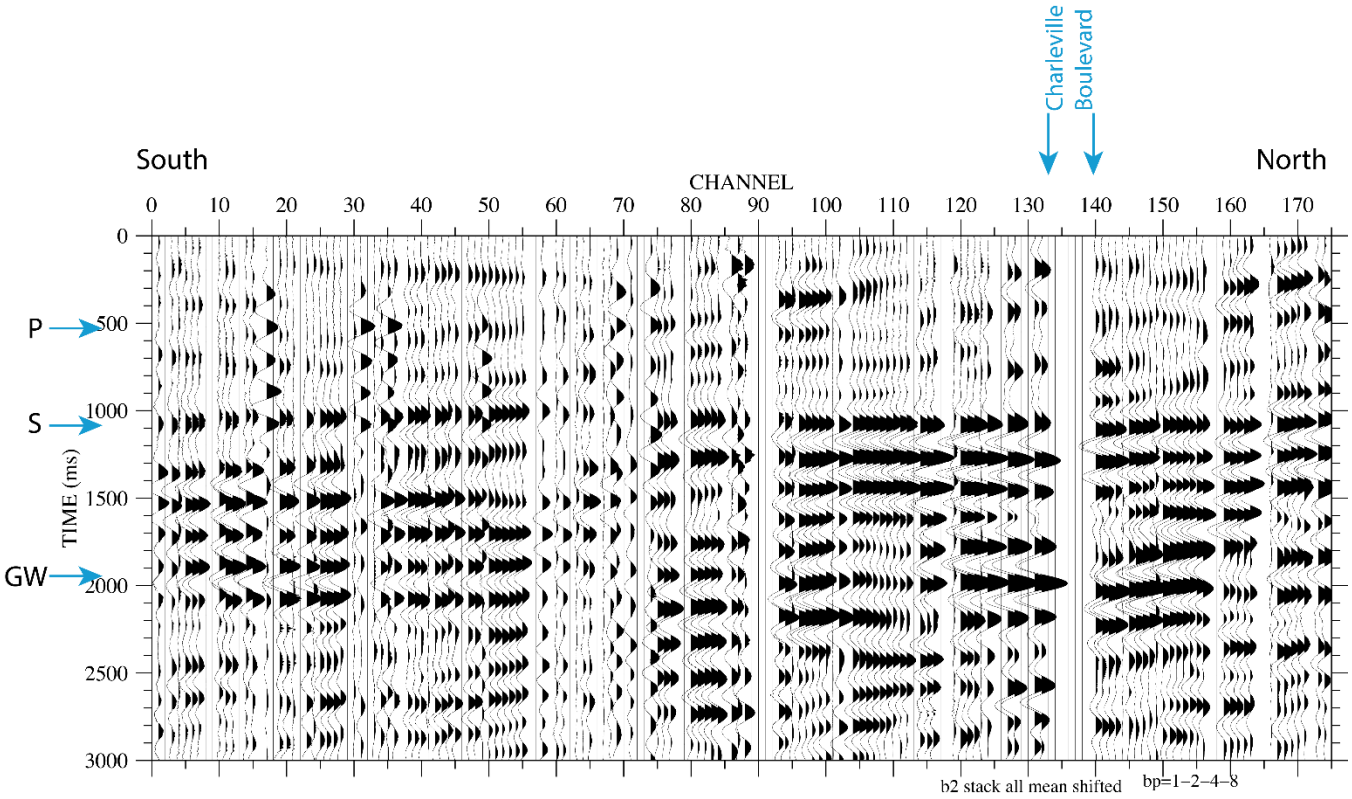

Figure 29. Stacked guided-wave shot gather for Profile BH2. Source is located at SP2; recording array is located along Profile BH1 (distance between source and recording array ranges from about 370 to about 510 m). Shorter propagation distance and lower cultural-noise levels resulted in higher signal-to-noise ratios than recorded for BHGW1 survey. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1 and 8 Hz. Location of Charleville Boulevard is shown. Other abbreviation: ms, millisecond(s).

the seismic source (SP2). The probable fault traces near Charleville Boulevard also are likely to be near-surface traces. Because multiple high-PGV zones are present along the BHGW2 survey, we suggest that the near-surface Santa Monica Fault is distributed along several traces along Lasky Drive.

Summary of Observations, Santa Monica Fault, Beverly Hills

We acquired only guided-wave data along Lasky Drive in Beverly Hills because we did not have the requisite permission to conduct in-line, active-source surveys. Additionally, we had little direct knowledge of the location of traces of the Santa Monica Fault where we could place our seismic sources. As a result, we conducted two guided-wave seismic surveys along Lasky Drive. Before conducting the first survey (BHGW1), we did not realize that one of the main traces of the Santa Monica Fault may have been located near the intersection of Charleville Boulevard and Lasky Drive, which was the north end of the BHGW1 survey. Upon learning of this possible location of the fault trace, we chose to conduct a second survey (BHGW2) that extended northward of the possible fault trace.

The signal-to-noise ratios of data from the BHGW1 survey were low, but the data from that survey appear to be consistent with probable faulting north and south of Charleville Boulevard. In addition, the data indicate that additional distributed faulting may be present along Profile BH1, particularly south of Charleville Boulevard. However, because of the low signal-to-noise ratios of the data, we have lower confidence in the data from the BHGW1 survey.

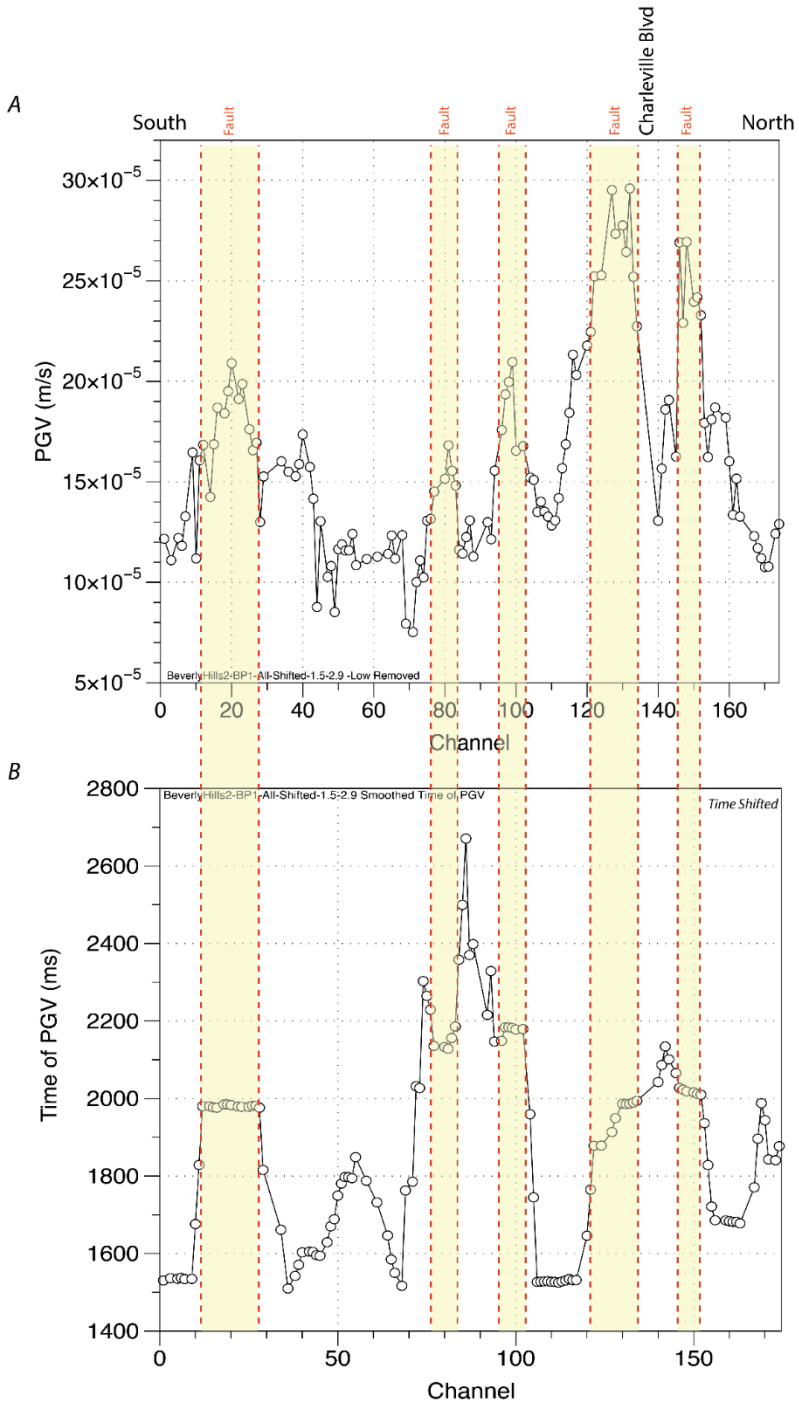

Figure 30. *A*, Plot of peak ground velocity (PGV) of guided waves for recording channels along BHGW2 survey. Because data were not recorded for some stations and because some sensors were not leveled when deployed, we opted to average each PGV value relative to the two closest PGV values to obtain a more stable result. High-PGV values (yellow shading) were concentrated along several locations along Lasky Drive; highest PGV values are near Charleville Boulevard. *B*, Plot of time of arrival of corresponding PGV values shown in *A*. Arrival times have been shifted downward on north end of profile by about 0.5 second (s) relative to south end of profile. Highest PGV values coincide with delayed phases that arrive at about 2 s or more (shifted time), consistent with guided waves, suggesting prominent faulting near Charleville Boulevard, but additional faulting appears to be present at areas along the profile (yellow shading). Location of Charleville Boulevard is shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

Data from the BHGW2 survey contained much higher signal-to-noise ratios, and the BHGW2 data also are indicative of faulting near the intersection of Charleville Boulevard and Lasky Drive. In addition, the BHGW2 data also are consistent with the presence of as many as three other fault traces along Lasky Drive. Importantly, all five of these high-PGV zones can be inferred on both the BHGW1 and BHGW2 data (figs. 28, 30). Thus, we suggest that distributed shallow-depth faulting likely is present at several locations along Lasky Drive.

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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 7

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September 27, 2018

VIA EMAIL elva.nuno-odonnell@lacity.org
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Elva Nuno-O'Donnell
City of Los Angeles, Department of City Planning
6262 Van Nuys Blvd., Room 351
Van Nuys, CA 91401

Re: **Comments on the Notice of Preparation of an EIR for the Hollywood Center Project ENV-2018-2116-EIR (Millennium Project II)**

Related Cases: CPC-2018-2114-ZCJ-HD-CU-MCUP-SPR; CPC-2018-2115-DA; VTT-82152

Dear Ms. Nuno-O'Donnell:

I. INTRODUCTION AND PRELIMINARY OBSERVATIONS.

This firm and the undersigned represent StopTheMillenniumHollywood.com (hereinafter "STMH") and other interested stakeholders in the community. Please keep this office on the list of interested persons to receive timely notice of all hearings, votes and determinations related to the proposed approval of the Hollywood Center Project at the east and west sites of the former Millennium Hollywood Project ("Project").

Pursuant to Public Resources Code Section 21167(f), please provide a copy of each and every Notice of Determination issued by the City in connection with this Project. STMH adopts and incorporates by reference all Project comments and objections raised by all others during the environmental review and land use entitlement processes for the Project. STMH also incorporates by reference the entire administrative record for the original Millennium Hollywood Project, LASC Case No. BS144606.

The City has recently issued two Notices of Preparation ("NOP") for the Project, one dated August 28, 2018, and a later one dated September 4, 2018. As far as we could determine, the two NOPs are identical except for their date of issuance, and the due date for comments. The City provided in its second NOP notice no explanation for why it was issuing the NOP twice, and therefore, comments submitted in response to both notices must be accepted and incorporated into the process of preparing a Draft EIR.

We will provide comments today, the comment deadline for the City's first NOP notice, but reserve the right to provide additional comments by October 4, 2018, in response to the second notice. We note that at the City's Scoping Meeting, the City had posters informing the public that it had until October 4, 2018 to submit NOP comments.

The Hollywood Center Project is the second project proposed by the principals of Millennium Partners, the New York-based development company, for these sites on either side of Vine Street in Hollywood. Although the application and EIR indicate that six limited liability companies constitute the Applicant, we are informed and believe that all of them are controlled by Millennium Partners and its principals.

The first Project, the "Millennium Hollywood Project," had the name "Millennium" in it to indicate a "brand" of luxurious housing projects its owners have developed in cities such as New York and San Francisco. However, since the international scandal surrounding Millennium's faulty construction design of the sinking and tilting Millennium Tower in San Francisco, Millennium Partners has distanced its name from new projects going forward, including the new version of the Millennium Hollywood Project rechristened with the generic-sounding "Hollywood Center Project." The new Project name thus attempts to disassociate the architects of the tilting disaster in San Francisco from this recycled Hollywood proposal to place high rise housing, office and/or hotel facilities directly over officially mapped fault traces of the 7.0-magnituded Hollywood Earthquake Fault.

II. NOP SPECIFIC COMMENTS.

As our Supreme Court has held, the Environmental Impact Report under CEQA

> "is an 'environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before they have reached ecological points of no return.' [Citation.] The EIR is also intended 'to demonstrate to an apprehensive citizenry that the agency has,

> in fact, analyzed and considered the ecological implications of its action.' [Citations.] Because the EIR must be certified or rejected by public officials, it is a document of accountability. If CEQA is scrupulously followed, the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees. [Citations.] The EIR process protects not only the environment but also informed self-government." Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 392.

Critical to the environmental review process is the opportunity of the public and other public agencies to identify information they require to be included in the Draft EIR to enable informed public review and comment. This also means that it is the lead agency's job to assure that negative and inconvenient information is not withheld from the public in the Draft EIR, so as to impair the public and expert agencies in their vital role to help shape a project and to hold the lead agency accountable in the process. All required information must be included at the Draft EIR stage, and not later in the process, as occurred during the Millennium Hollywood review process.

We would ask that the Draft EIR address all issues raised by commenting agencies and members of the public. Among other agencies that we request you put on the responsible agency list and/or list of interested agencies are Caltrans and the California Geologic Survey. We also demand that the following information be included in the Draft EIR:

1. Aesthetics. The Initial Study prepared by the applicant's consultant and apparently adopted by City Planning staff materially misrepresents the City's obligations to disclose and analyze aesthetic impacts. While SB 743 purported to exempt some aesthetic and parking impacts, it included an express exception related to impacts on historic and cultural resources. The City acknowledges that there are significant historic resources located on-site or immediately adjacent to the proposed project. Accordingly, it is troubling that the City's environmental review unit, on this first new environmental document, failed to disclose to the public that Pub. Res. Code Section 21099(d)(2)(B) states: "For the purposes of this subdivision, aesthetic impacts do not include impacts on historical or cultural resources." Therefore, when the City asserts that the Draft EIR will include information related to aesthetic impacts for only "informational purposes,"

that statement is false. The CEQA statute expressly mandates analysis and mitigation of the aesthetic impacts of the Project upon the historic resources on and off site. To contend otherwise is misleading to the public.

2. Cultural and Historic Resources. The Initial Study asserts that the Project will have no direct impact on cultural and historic resources in the area. That contention is not accurate. Foreseeable direct impacts could occur to the Capitol Records building Echo Chambers which themselves are significant cultural resources since their original construction.

The request to rezone and significantly increase the residential density and floor area will confer up to more than $100 million in additional value to the Applicant, yet the Project fails to include any significant and legally enforceable historic preservation for all of the resources located on site. The Project as proposed will dramatically undermine the prominence of the Capitol Records building as an iconic symbol of Hollywood, and replace it with a sterile set of gigantic high rise towers. The increase in density is discretionary. The City does not have to enrich the Applicant without requiring, as a condition of the Project, a detailed, legally enforceable, and comprehensive historic restoration of all buildings and structures on site.

The original Millennium Hollywood Project proposed no significant, legally enforceable historic preservation program. The City should not hand millions in profit to the Applicant without a significant historic preservation program that respects the Capitol Records and other buildings, instead of denigrating them with the destruction of their significance to Hollywood. It is well established that "a project that may cause a substantial adverse change in the significance of an historical resource is subject to CEQA." Eureka Citizens for Responsible Government v. City of Eureka (2007) 147 Cal.App.4th 357, 374; Pub. Res. Code § 21084.1. "Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired." Guidelines § 15064.5, subd. (b)(1) (emphasis added).

3. Geology and Soils. The proposed placement of two towers across and over the top of an officially mapped Alquist-Priolo fault trace of the Hollywood Fault is unconscionable. Public and public agency comment during the original Millennium Hollywood Project expressed tremendous concern about possible catastrophic collapse of the towers if portions of the site suddenly moved, shearing the buildings' supporting columns, foundations and structures. With towers built this tall, and over the fault trace, Millennium asks this City Council to put at risk not only the lives of residents and users of the onsite Project, but property and lives of persons in immediately adjoining buildings and streets.

When the Hollywood Earthquake Fault ruptures, placing the Applicant's proposed 30+ and 40+ story towers on this site would not only kill and injure thousands of occupants, residents, workers and visitors, but it would cause enormous environmental impacts should the buildings also topple over onto surrounding structures, as well as blocking streets for weeks or months creating severe traffic impacts, which in turn would impact emergency services and response times. Air quality and health risk impacts would also be severe.

Following the City Council's hasty project approvals of the Millennium Hollywood Project on July 24, 2013, the Applicant fired its first engineering firm, Langan Engineering, and hired Group Delta to conduct further geologic study of only a portion of the East Site. After excavating a trench in the northern portion of the East Site, Group Delta failed to excavate the trench to the southernmost portion of the Project site where investigators from the State Geologist's office were most interested in examining the trench. In fact, Group Delta officials, over objections, excluded State Geologist investigators from fully examining the trench that was excavated. Ultimately, the State adopted an official Alquist-Priolo map across the site. During the State's administrative proceedings prior to that map adoption, Millennium's attorneys insisted Group Delta had evidence showing no fault on or through the East Site, and promised to submit such evidence to the State. However, as noted by the State in its report, no such contrary evidence was ever produced by Millennium. Accordingly, the Draft EIR must fully include all of the data and studies that led to the State's mapping of both the East and West Sites to include a fault rupture trace of the Hollywood Fault.

Other than some selective drilling of the West Site as part of the "limited" fault investigation conducted by Langan Engineering in July 2015, the Applicant has never conducted a full trench excavation of either the East Site or the West Site. Therefore, the Draft EIR must include the result of a full trenching of both the East and West Sites, including the parking lot of the Enterprise Car Rental, to determine if splays of the Hollywood Fault exist where the Applicant proposes new construction, or within 50 feet of proposed construction of any "habitable structures," as that term is defined in law.

Given the extreme controversy over the Applicant's claims that the Hollywood Fault trace is not located on its property, or allegedly is not active, when the adopted State map establishes otherwise, this requires the City to order full trenching of both sides of the Project site, and to require that both City and State geologists shall have full access to all of the trenches. This is not a time to allow an Applicant to evade proper environmental review of the likely presence of the Hollywood Fault on its property. A refusal of the City to order such trenching to reassure a skeptical public would strongly suggest that once again politics will overrule common sense and prudent safe development practices – practices that during the first project approvals brought the City into international condemnation for its previous reckless approval.

4. Alternatives. The Draft EIR must include a reasonable range of alternatives that do **not** place habitable structures, including buildings for occupancy and parking structures (above ground or subterranean) over or across the officially-mapped fault zones, or within 50 feet thereof. Further, alternatives that are scaled down to reduce height, density and FAR must also be included and analyzed in the Draft EIR.

5. Land Use. CEQA requires that the analysis under the Land Use topic disclose and analyze how the Project is inconsistent with plans, programs, statutes, ordinances and policies adopted to avoid or mitigate environmental impacts. The Project conflicts with numerous such programs and the Land Use section of the EIR is required by law to focus on the potential inconsistencies and conflicts. Nowhere does the CEQA statute call for an analysis of how a Project might be consistent with a cherry-picked list of other policies and program. Therefore, if the City wants to engage in an

extended "analysis" of consistency, it must be excluded from the Land Use section in the EIR, and placed in an appendix. To make consistency the focus of the Land Use section instead of inconsistency is to mislead the public of the purpose of the Land Use section of an EIR. Therefore, to focus the public and agencies on the inconsistencies with plans, programs, statutes, ordinances and policies, the Land Use section of the Draft EIR must fulfill this specific statutory purpose.

Very truly yours,

Robert Silverstein /VL

ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 8

CALIFORNIA GEOLOGICAL SURVEY
FAULT EVALUATION REPORT FER 253
SUPPLEMENT NO. 1

THE HOLLYWOOD FAULT
in the Hollywood 7.5' Quadrangle
Los Angeles County, California

by
Janis L. Hernandez
Engineering Geologist
November 5, 2014

INTRODUCTION

The Hollywood Fault zone was previously evaluated by Hernandez and Treiman (2014). Traces of the fault zone were found to be sufficiently active and well-defined for zoning under the Alquist-Priolo Earthquake Fault Zone Act (Bryant and Hart, 2007). A preliminary review map showing the recommended Alquist-Priolo Earthquake Fault Zone (APEFZ) for the Hollywood quadrangle in Los Angeles County was released for public comment on January 8, 2014, and the Fault Evaluation Report was issued February 14, 2014.

The public comment period, during which written comments were received by the California State Mining and Geology Board (SMGB), was scheduled to end April 8, 2014, but was extended until May 15, 2014. These public comments were made available to the State Geologist on May 16, 2014, and were formally transmitted to the California Geological Survey (CGS) with comments and recommendations from the SMGB on August 14, 2014.

The purpose of this supplement to the FER is to review and address these public comments forwarded by the SMGB, comment on additional reports sent to CGS after preparation of the FER, and to comment on field observations of fault trenches and other subsurface investigations by CGS after the public comment period. The location of the study area is indicated on Figure 1 and the reader is referred to FER 253 dated February 14, 2014 for other necessary background material (ftp://206.170.189.144/pub/dmg/pubs/fer/253).

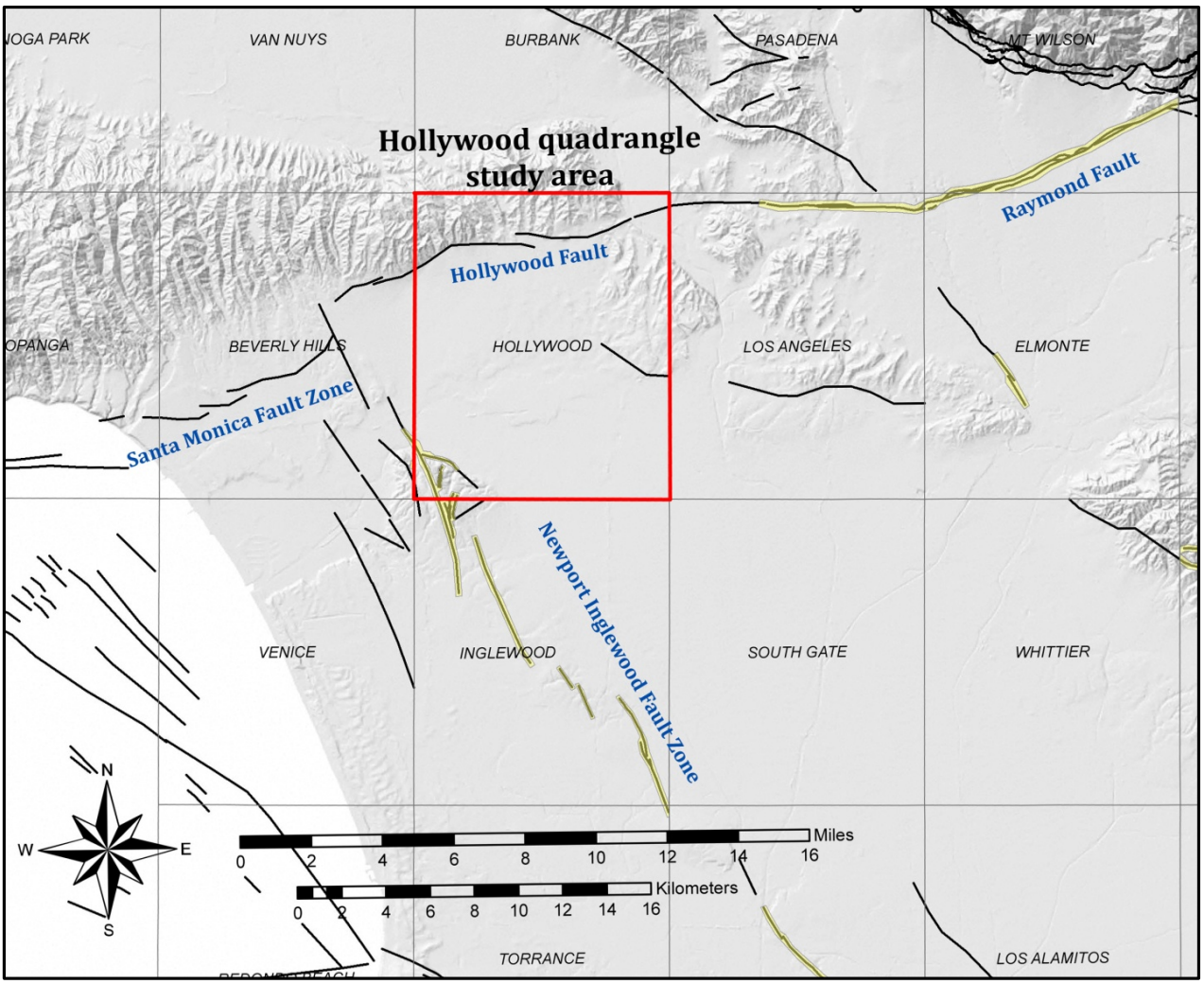

Figure 1- Study area of the Hollywood quadrangle and names of selected faults in the vicinity. Faults within existing official Alquist-Priolo Earthquake Fault Zones are within yellow-shaded boundaries; other faults are indicated in black. Fault strands of the Newport-Inglewood Fault Zone are not a part of this evaluation. Source: USGS Quaternary Fault and Fold Database of the United States (http://earthquake.usgs.gov/hazards/qfaults/).

PUBLIC COMMENTS, AND RESPONSE

All comments received by the SMGB are listed in Table 1. Those comments that present technical data and analysis (noted with "*" in Table 1) are addressed in this supplemental report. Other comments of a non-technical nature fall under authority of the SMGB, and are not addressed herein.

Two of the technical comments noted in Table 1 (a report dated March 11, 2014 from Lettis Consultants International, Inc. (LCI), and a letter with exhibits dated March 11, 2014 by Elkins Kalt Weintraub Reuben Gartside LLP) were superseded by later submittals which included additional interpretation. The April 8, 2014 letter submitted by Elkins Kalt Weintraub Reuben Gartside LLP was a transmittal for the April 8, 2014 LCI report. The latest LCI submittal is addressed here.

Table 1
Chronological Summary of Comments Received from the State Mining and Geology Board
Hollywood Quadrangle Preliminary Earthquake Fault Zones Map

Comment No.	Date	Commenter	Document
1	February 14, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled "*Request for Extension of Comment Period for Preliminary Alquist-Priolo Earthquake Fault Zone Map for the Hollywood Area of Los Angeles County*"
2	February 26, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled "*Public Hearing to Receive Comments on Preliminary Earthquake Fault Zone Map for the Hollywood Quadrangle, Los Angeles County*"
3	March 11, 2014	Lettis Consultants International, Inc.	Letter report titled "*Technical Memorandum, Boulevard 6200 – Assessment of Fault Mapped in FER 253*"
4	March 11, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter with Exhibits titled "*Public Hearing to Receive Comments on Preliminary Earthquake Fault Zone Map for the Hollywood Quadrangle, Los Angeles County*"
5	March 13, 2014	Liner	Letter title "*Public Hearing March 13, 2014, Agenda Item XI (New Business) Item No. 3 (Public Hearing)*"
6	March 13, 2014	Beachwood Canyon Neighborhood Association	Comment letter
*7	March 13, 2014	Group Delta Consultants	Letter titled "*Release of Preliminary Review Maps of Proposed New and Revised Earthquake Fault Zones, Earthquake Zones of Required Investigation, Hollywood Quadrangle*"
8	April 2, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled "*Alquist-Priolo Earthquake Fault Zone Map for the Hollywood Quadrangle*"
*9	April 8, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled " *Technical Review Comments on Preliminary Review Maps of Proposed Alquist-Priolo Earthquake Fault Zone Map for the Hollywood Quadrangle*"
*10	April 8, 2014	Cox Castle Nicholson	Letter titled "*Comments on the Preliminary Earthquake Fault Zone Map for the Hollywood Quadrangle*"
11	April 8, 2014	Armbruster Goldsmith & Delvac LLP	Letter title "*Alquist-Priolo Earthquake Fault Zone Map – Hollywood Quadrangle – Public Comment*"
*12	April 8, 2014	Lettis Consultants International, Inc.	Letter titled "*Revised Technical Memorandum, Boulevard 6200 – Assessment of Fault Mapped in FER 253*"
*13	April 18, 2014	David Perry	Comment letter on Fault Evaluation Report FER-253
*14	May 6, 2014	Group Delta	Report titled "*Fault Activity Investigation*"
*15	August 5, 2014	Group Delta	Letter report titled "Summary of Investigations of 4 Sites – Possible Locations of the Hollywood fault within the Draft Earthquake Fault Zones - Hollywood Quadrangle

In addition to the public comments, new geologic/geotechnical information was received and observations were made in the field subsequent to the 90 day public comment period. CGS evaluated as much new data as possible. To allow CGS time to incorporate new data into the map and supplemental FER, consultants working on fault investigations were informed that new data received before September 15, 2014 would be considered.

One report received on September 16, 2014 is considered in this Supplemental FER; data submitted to CGS after that date was not. Both the public comments received, listed in Table 1, and reports sent directly to CGS up until September 16th, as listed in Table 2, are presented in this supplemental report and organized as in the initial FER, that is, comments and data are discussed in this report by fault segment as shown on Figure 2.

Table 2
Summary of Documents Received outside of those submitted to SMGB for the Hollywood Quadrangle Preliminary Earthquake Fault Zones Map

Date Received	Received from	Document
2/7/2014	City of Los Angeles, Dept. of Engineering	Schmidt, P., and Burnett, F., 2014, Geotechnical Investigation of the Northeast Interceptor Sewer Phase 2A (NEIS 2A) Hollywood Fault Crossing, North American Tunneling Association, Paper # 144, 11 pages.
3/20/2014	City of Los Angeles, Dept. of Engineering	City of Los Angeles, Department of Engineering, Fault Crossing Adjusted Borings 031814_PG, Plate 4.pdf.
4/18/2014	City of Los Angeles, Grading Division	Golder Associates, Inc., 2014a, Surface fault Rupture Hazard Assessment, Proposed Residential and Commercial Development 8150 Sunset Boulevard, City of Los Angeles, CA, Project No. 123-92034-02, dated January 27, 2014.
4/18/2014	City of Los Angeles, Grading Division	Golder Associates, Inc., 2014b, Geotechnical Exploration and Recommendations Report, Proposed Residential and Commercial Development, 8150 Sunset Blvd., Los Angeles, CA, Project No. 123-92034, dated March 24, 2014.
5/27/2014	City of Los Angeles, Dept. of Engineering	City of Los Angeles Department of General Services, Standards Division, NEIS II-A Geotechnical Investigation (Fault Study), Lab No. 140-5916, W.O. No. SZC11777, Geotechnical Services File 060097, dated June 2013
5/28/2014	Metropolitan Transportation Authority Library	Converse Consultants, Earth Sciences Associates, Geo/Resource Consultants, 1984, Geotechnical Report – Metro Rail Project, Design Unit A350, May, 1984.
08/22/2014	City of Los Angeles, Grading Division	Bay City Geology, 2014, Fault Study Investigation, Proposed New Single Family Residence, 1922 N. Oxford Avenue, Los Angeles, CA 90027, Project 1535, dated June 10, 2014.
8/22/2014	City of Los Angeles, Grading Division	Byer Geotechnical, Inc., 2014, Geologic and Soils Engineering Update, Fault Rupture Hazards Investigation, Proposed Apartment, 1769 – 1775 North Sycamore Avenue, Hollywood, CA, Project No. BG 21645, dated April 17, 2014.
8/22/2014	City of Los Angeles, Grading Division	Grover Hollingsworth and Associates, Inc., 2014, Geologic and Soils Engineering Exploration, Proposed Site Grading, Dwelling, Pool, Pool House, Guesthouse and Retaining Walls, 7476 Hillside Avenue and 1830 N. Sierra Bonita Avenue, Los Angeles, Project no. GH15737-G, dated May 20, 2014.
8/22/2014	City of Los Angeles, Grading Division	Irvine Geotechnical Inc., 2014, Geologic and Soils Engineering Exploration, Fault Rupture Hazard Evaluation, Proposed Residence, 1894 N. Stanley Avenue, Los Angeles, CA, Project No. IC 12117-I, dated March 14, 2014.
9/11/2014	Group Delta Consultants	Group Delta Consultants, Inc., 2014b, Fault Activity Investigation, 6230 Yucca Street, SW Corner of Yucca Street and Argyle Avenue, Hollywood Area, City of Los Angeles, California, GDC Project No. LA-1161 A, dated September 3, 2014.
9/12/2014	Group Delta Consultants	Group Delta Consultants, Inc., 2014d, Data from Fault Activity Investigation Report, 1750 Vine Street, Los Angeles, California, 90028, GDC Project No. LA-1191, dated September 12, 2014 (rev. 9/14).
9/16/2014	Group Delta Consultants	Group Delta Consultants, Inc., 2014c, Fault Activity Investigation, Yucca-Argyle Apartments, Champion Site, SE Corner of Yucca Street and Argyle Avenue, Hollywood District, City of Los Angeles, California, GDC Project No. LA-1183A, dated September 7, 2014.

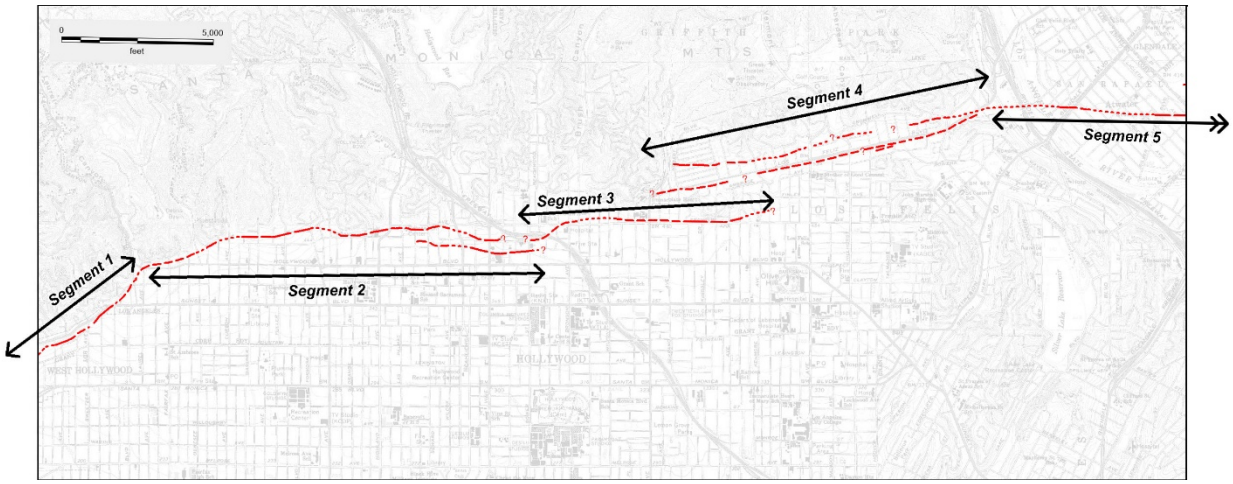

Figure 2 – Index to fault segments discussed in the supplemental report. Red lines are fault traces from the Official Alquist-Priolo Earthquake Fault Zone map, dated 11/6/2014.

ADDITIONAL RECENT STUDIES and COMMENTS

- with appended response in italics.

Site localities also presented on Plate 1 of this supplemental report.

Segment 1

Golder Associates, Inc. (2014a, b) prepared a Surface Fault Rupture Hazard Assessment and Geotechnical Exploration study for a residential and commercial development located on the southwest corner of Sunset Boulevard and Crescent Heights (locality S1-1) as shown on Figure 3. Golder's site evaluation included a CPT transect and hollow stem auger boreholes along the western and southern site boundaries. They interpreted this transect to show continuous alluvial stratigraphy across the site. They reported silts and gravelly sands deposited less than 7 thousand years ago (ka) to depths of about 40 feet. Lower deposits ranged in age from 9 ka to 13 ka at depths of about 60 to 80 feet. They concluded the site has not had major disruption from Holocene faulting.

The data presented by Golder Associates are consistent with the interpretation presented in the initial FER that the Hollywood Fault lies north of this site as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

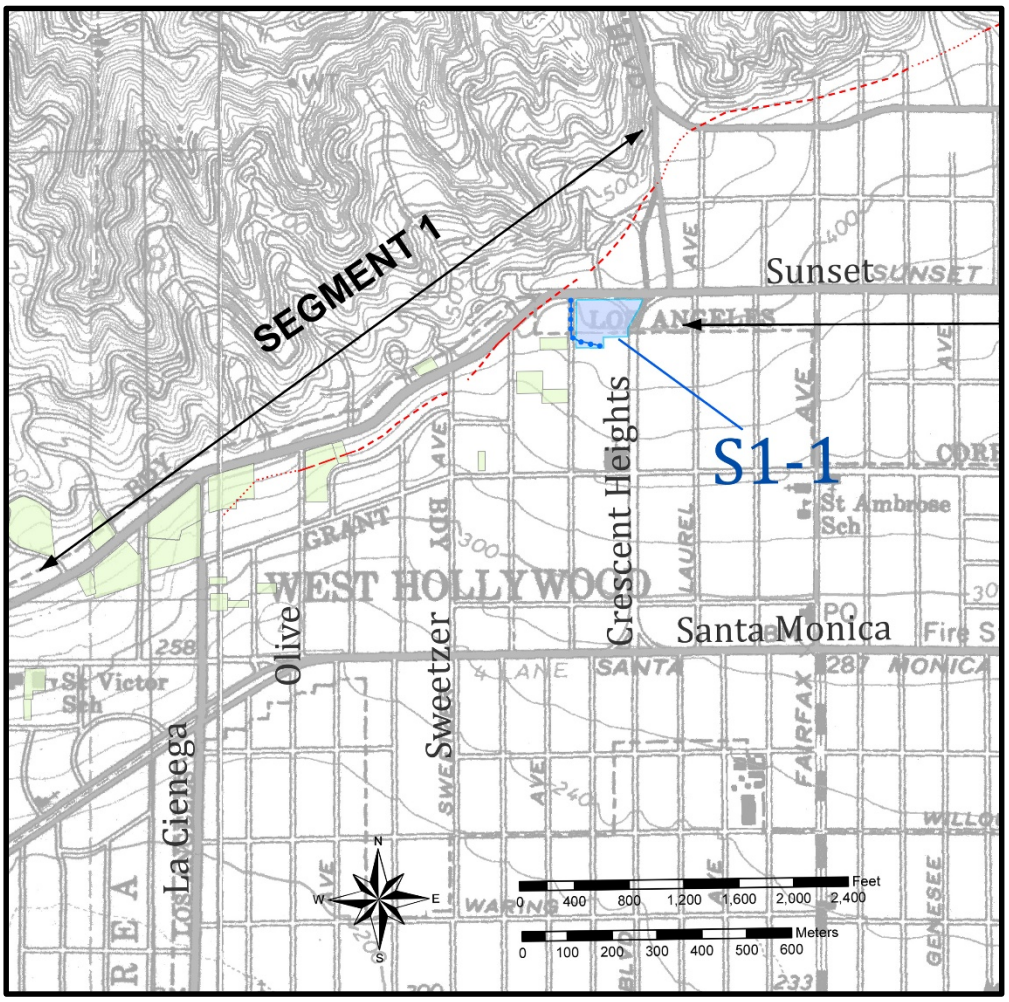

Figure 3 – Study site locality S1-1 indicated in blue shaded area. Boring transect shown as dark blue patterned line. Previous study sites included in the initial FER shown in light green.

Segment 2 (western portion)

Irvine Geotechnical, Inc. (2014) performed a fault investigation for a residential project located near the base of the Santa Monica Mountains at locality S2-1 (Figure 4). Geologic mapping and shallow trenches were performed as part their study. A geologist for the City of Los Angeles observed the excavation during the study, where un-faulted quartz diorite bedrock was exposed.

Grover Hollingsworth and Associates, Inc. (2014) conducted a fault investigation for a project located along the southern edge of the Santa Monica Mountains, near Runyon Canyon at locality S2-2 (Figure 4). They excavated three fault trenches across the site and observed a thin layer of soil overlying quartz diorite bedrock. Caliche-lined faults were observed in Trenches 1 and 3, but clay gouge and slickensides were not observed in the fault zone. With field review and discussion with the City of Los Angeles geologist, Grover Hollingsworth considered these faults to be pre-Holocene.

The data presented by Irvine Geotechnical and Grover Hollingsworth and Associates for localities S2-1 and S2-2, respectively, is consistent with the interpretation that no Holocene faults cross these sites north of the fault shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

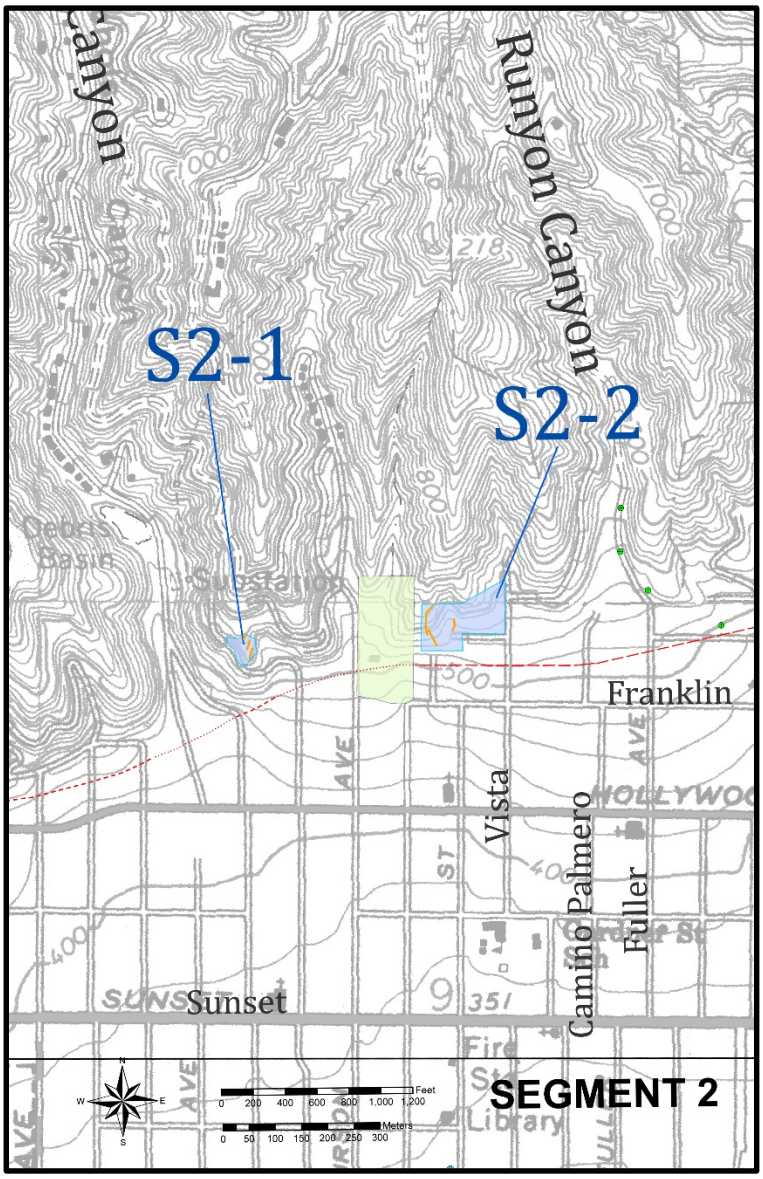

Figure 4 – Index map showing new localities S2-1 and S2-2. Trench locations indicated as orange line segments. Previous studies included in original FER shaded green.

Byer Geotechnical, Inc. (2014) prepared a fault rupture hazard investigation for a site south of Franklin Avenue near La Brea Avenue at locality S2-3 (Figure 5). They utilized continuous core borings and seismic refraction for their study. An age date from bulk AMS C14 samples collected near the base of the young alluvium was reported as 7.1 ka. Bulk samples just below the upper contact of the old alluvium yielded ages of 20.1 ka, and 22.0 ka. Their analysis indicated unbroken stratigraphy underlying the site and they concluded there is no direct evidence for the presence of active faulting at the site.

The data presented by Byer Geotechnical is consistent with the interpretation presented in the initial FER that the Hollywood Fault lies north of this site as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

At locality S2-4 (Figure 5), (locality 12 in Hernandez and Treiman, 2014), CGS re-evaluated the fault strands at this site and compared them to the well-defined and well-constrained fault data immediately east of this location (Hernandez and Treiman, 2014), locality 13), as well as new data to the east at locality S2-5 (described below). There were several fault strands indicated in investigations at this site, and the re-assessment of the data led us to select a different strand as the dominant trace.

Based on our re-evaluation of these data, we suggest a modification of the fault trace slightly to the south to project through this preferred trace, connecting the well-located fault to the east with better defined scarps to the west.

CGS made observations of two fault trenches at locality S2-5, south of Franklin Avenue and N. Cherokee Avenue (Figure 5). Two separate visits were made to this site by J. Treiman (CGS). The southern trench, first visited on December 31, 2013, exposed southeast dipping Topanga Formation siltstone and sandstone, with interbedded or injected volcanics. No faults were observed in this trench at this time. A northern trench, visited on January 15, 2014, revealed a broad fault zone (about 20 to 30-feet wide) within the Topanga Formation. Bedrock to the north and south of the fault zone dipped moderately to the northeast. Within the fault zone, bedding and shears had an east-west strike with steeply north to vertical dips. Shearing increased toward the northern margin of the zone which had a sharp vertical shear and a soil-filled fissure. The north margin of this soil-filled fissure appeared planar, indicating the soil was faulted, rather than just falling into a shaking-related fracture. A visit to a freshly cleaned exposure at the initial southern trench, also on January 15, showed a shallowly north-dipping shear within the bedrock to the graded surface. Soils overlying the bedrock in the northern trench appeared to be very young. To date no report has been submitted by the owner to the City of Los Angeles or CGS.

Our observations confirm the location of the northern strand of the Hollywood fault as presented in the initial FER.

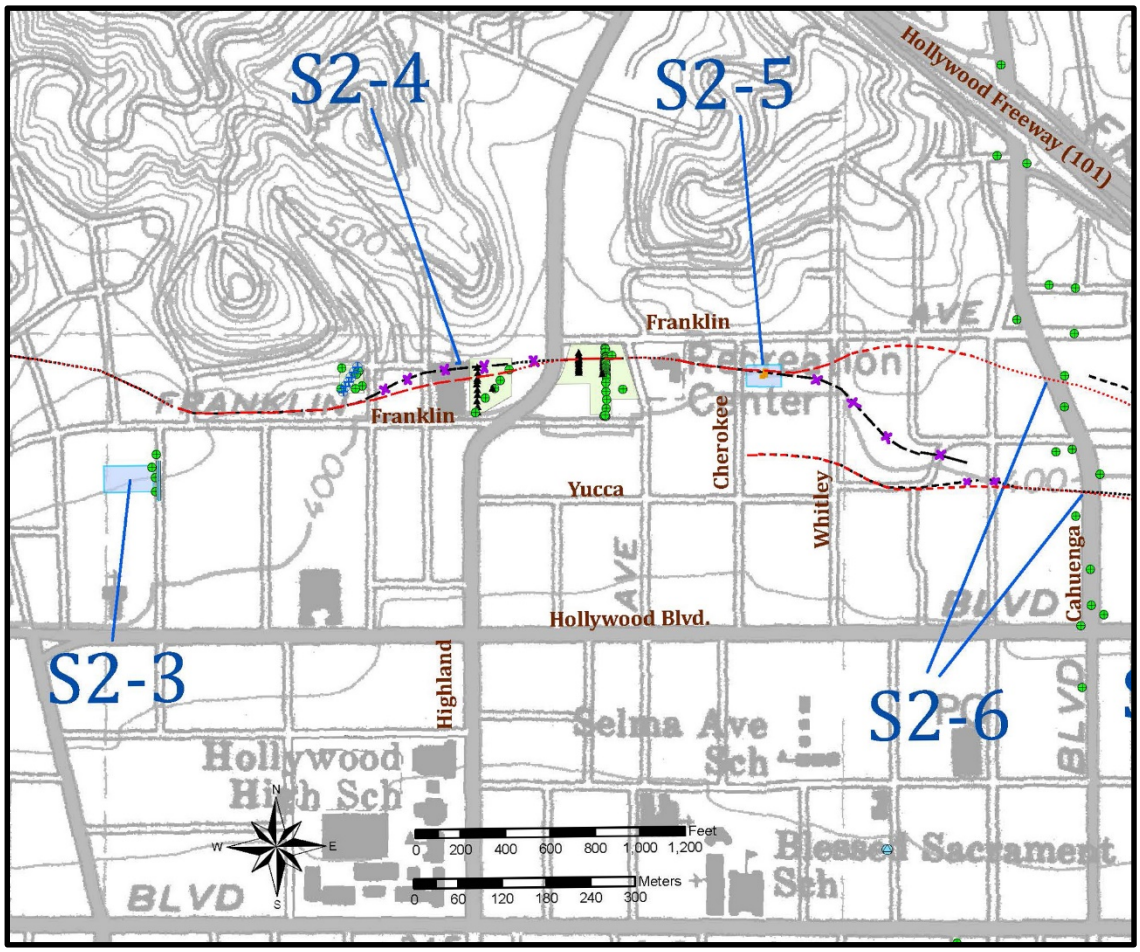

Figure 5 – Localities within Segment 2; S2-3 through S2-6. Red lines indicate mapped fault trace locations for the Official Zone Map. Black fault traces with purple hachures indicate where the fault trace was modified from the preliminary zoned trace. Green and black symbols are boring/CPT locations or transects. Orange lines are trench locations. Light blue shaded areas indicate reports received subsequent to the issuance of the FER.

Converse Consultants, Earth Sciences Associates, Geo/Resource Consultants (1984) – locality S2-6 (Figures 5 & 7); CGS acquired a geotechnical report prepared by Converse Consultants et al (1984) for the Metro Rail Red Line Project that was not available for the initial FER (Hernandez and Treiman, 2014). The initial FER relied on data from Converse Consultants et al, (1981, 1983) and Crook and Proctor (1992), and, although the borehole data from the 1984 report were described by Crook and Proctor (1992), the original borehole logs were not in the 1981 and 1983 reports that they reference.

The data presented by Converse Consultants et al (1984), specifically a cross section (Figure 6 herein) and boring logs, combined with observations of the fault at locality S2-5, support an eastward continuation of the northern fault trace , rather than the southeast trending orientation shown in the initial FER (that was based on Dolan et al., 1997)(Figure 7). We find the stratigraphy within the MTA boreholes reveals lateral discontinuities within the upper alluvial soils above the principal fault strands, in addition to offset bedrock as illustrated in the cross-section (Figure 6). The Converse Consultants data also supports the location of the southern trace of the fault where it crosses Cahuenga Boulevard as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map. Additionally, the cross section shows a third fault that projects toward

the ground surface at Yucca Street, roughly between the northern and southern strands (Figure 6). Due to uncertainty as to how the various strands of this complex fault zone connect to the east and west we are only depicting the northern and southern fault traces on the Official Zone map.

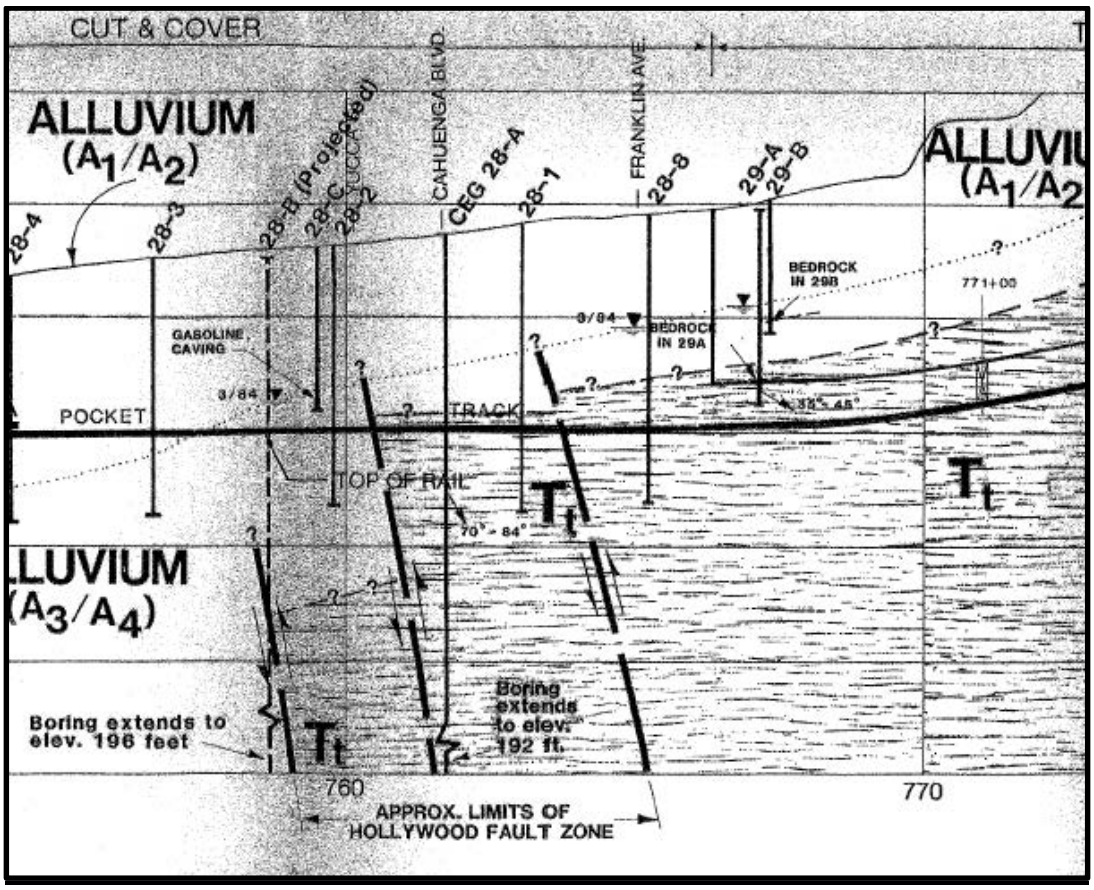

Figure 6 – Cross section from the Metro Red Line subway project. Portion of figure from Converse et al, 1984.

SEGMENT 2 (eastern portion)

A comment was submitted by Mr. David Waite of Cox Castle Nicholson, LLP on April 8, 2014 to the SMGB (Comment # 10, Table 1), with reference to localities S2-7 and S2-9 (Figure 7) and included a request to extend the public comment period. He referenced ongoing studies in the vicinity of Yucca Street and Argyle Avenue, and requested that this information be considered prior to issuance of the final map. Mr. Waite specifically mentions the Hollywood Millennium project, and a fault study for this project that was performed by Langan Engineering (2012). He also states that conclusions from this site-specific data were not relied upon by CGS in preparation of the fault map. Further, he concludes that the lack of evidence of a fault traversing the Millennium project does not represent a "sufficiently active, and well-defined fault." They suggest that the map should "simply delineate supportable fault zones in which individual properties would undertake subsurface investigations, as it is fault zones which signal to localities and other constituencies that additional investigation is required." Mr. Waite also states that additional subsurface data will be submitted to the City of Los Angeles and the State Geologist in the coming weeks and months so it could be considered in preparation of the final map.

CGS was invited to most of the sites referred to by Mr. Waite, where we performed limited review of trenches in the Yucca and Argyle area. Regarding our initial review of data and preparation of the initial FER, data from the Langan Engineering report for the Hollywood Millennium project was considered. However, our analysis of the subsurface correlation between borings and review of the C14 data arrived at different conclusions. Our review of the Langan (2012b) borings showed a major discontinuity between borings B-1 and B-5. This subsurface discontinuity is the boundary between gently south-dipping alluvial fan deposits to the north and fine-grained clayey deposits to the south. We interpret that this abrupt contrast in lithology indicates the presence of a fault. Regarding the statement that additional data will be submitted for this project, CGS has received no additional data for the site west of Vine Street at the time of this supplemental report, and only limited data for the site east of Vine Street.

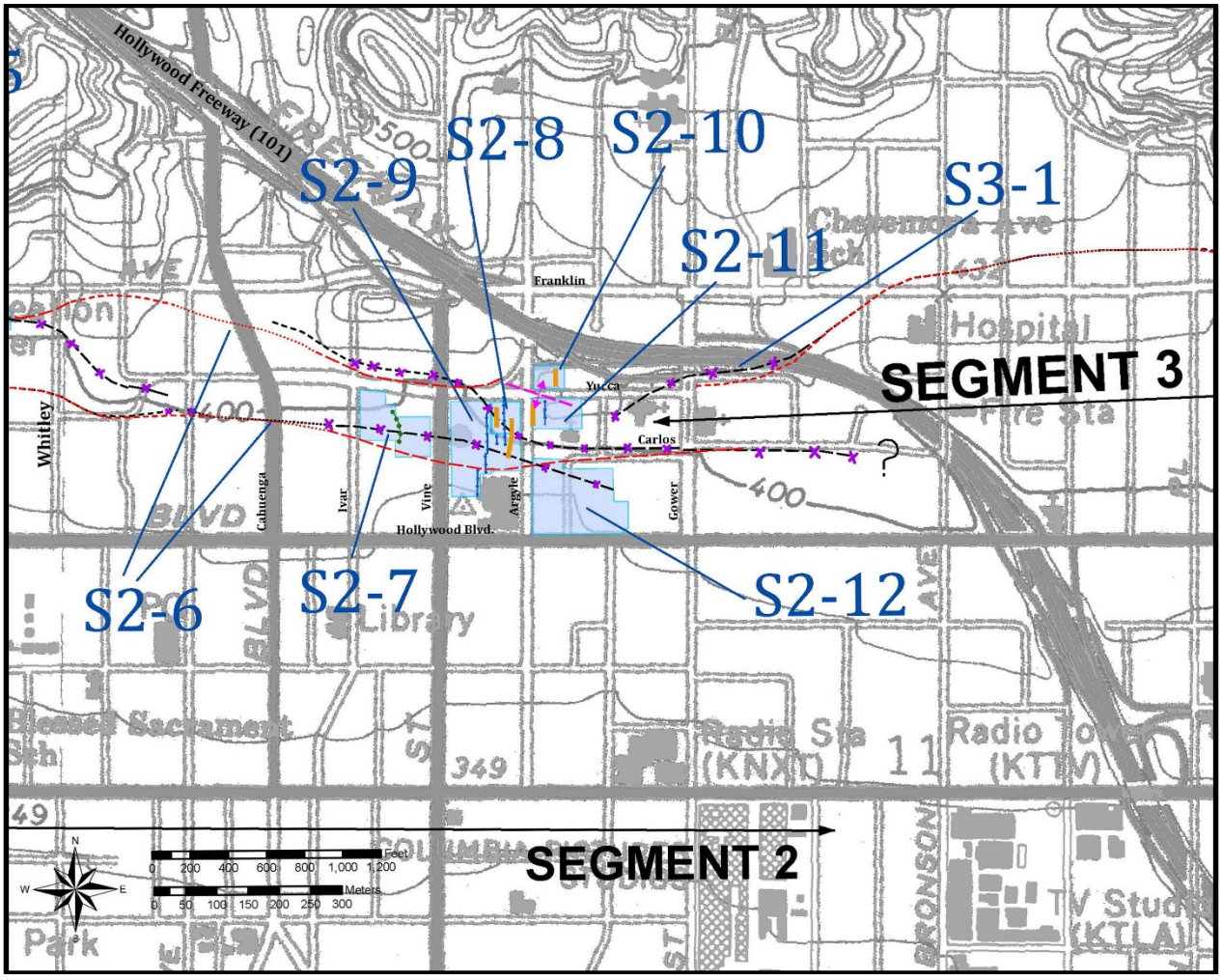

Figure 7 - Site index of the eastern portion of Segment 2, featuring localities S2-6 through S2-12. Areas shaded in blue include new reports submitted after the initial FER was prepared. Red fault traces indicate revised map traces. Black fault traces with purple X indicate modified areas from Preliminary EFZ map. Blue patterned line indicates boring/CPT transect, gold lines indicate fault trench locations. Magenta line at Site S2-10-11 is approximate anticline axis based on new reports by GDC (2014c)

Segment 2 - Localities S2-8 through S2-11

Fault studies for localities S2-8 through S2-11 were conducted by Group Delta Consultants, Inc. (GDC) over the timespan between about February and July, 2014. CGS was provided the opportunity to perform periodic trench review of some of the trenches for these sites, however some limitations were implemented, either based on site conditions, property owners restrictions, or other reasons. A table summarizing CGS site visits in this area is provided in Appendix B of this supplemental report.

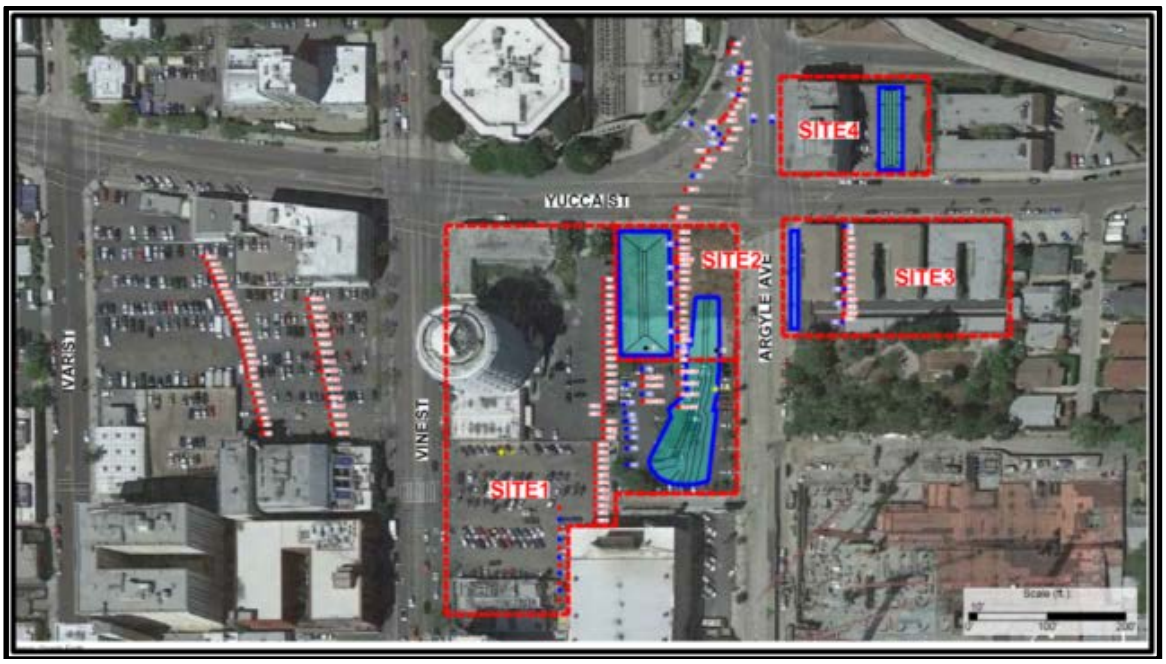

Figure 8 – Group Delta Consultants, Inc. numbered site investigations in the Yucca/Argyle area of Hollywood. Figure modified from Group Delta's submittal to the State Mining and Geology Board on August 14, 2014. Only data for Sites 2 and 3, and the CPT line for Site 1 were submitted to CGS in time for consideration in this Supplemental FER.

A comment was submitted by Mr. Michael Reader of Group Delta Consultants, Inc. (GDC) on March 13, 2014 to the SMGB for locality S2-8 (GDC Site 2, Figure 8). Mr. Reader stated that although there are mapped locations where the Hollywood Fault is somewhat well-defined, in the area between Cahuenga Boulevard and Gower Street the Hollywood Fault is concealed by alluvial fans, and that no data in this area have located the active trace. He also reported that the geologic community agrees the active trace of the Hollywood Fault lies "somewhere" in this area. However, he questioned the delineation of the zone for this area, with such sparse available data.

The initial FER (Hernandez and Treiman, 2014) provides strong evidence that the fault is well-defined to the west of the Yucca Street/Argyle Avenue area. Reasonable projection of the Hollywood Fault in this area was inferred based on supportive evidence to the west, geomorphic interpretation, and limited subsurface data. There is also good evidence the fault continues to the east, suggesting that a continuous zone of faulting extends across the map. The purpose of the map is to require investigations, like those Mr. Reader refers to in the Yucca Street/Argyle Avenue area, to ensure fault rupture is not a hazard to human lives and habitable structures.

A fault study, conducted by Group Delta Consultants, Inc. (2014a) was submitted to the SMGB on May 6, 2014 for locality S2-8 (GDC Site 2, Figure 8). This study included core boring and CPT transects and an approximate 100-foot long, 30 foot deep trench on the western portion of the site. GDC reported that they found no evidence for faulting in the Holocene units on this site. The study also reported age estimates of weathered soil horizons at two locations within the trench, prepared by Dr. Roy Shlemon, and included test results from two charcoal samples submitted for C14 dating.

GDC reported the site is underlain by fluvial channel deposits, locally named the Argyle Channel, which they estimate to be Holocene. Underlying the Argyle Channel deposits, they report a clayey sand layer. The contact between the lower clayey sand and the overlying Argyle Channel sands is reported to be an erosional unconformity. The lower clayey sand is reported to be at least 12 to 15 ka, based on relative soil pedogenic development exposed in the trench. Age estimates by GDC are based on soil development described by Dr. Roy Shlemon, in Appendix B of their report, and correlation of the unconformity with ice age sea-level low stand at during marine isotope stage 2. Radiocarbon dates reported for the Argyle Channel deposits were about ~4.3 ka, and ~41 ka at about 14 feet, and 18 feet below the ground surface (bgs), respectively. GDC prefers the soil-stratigraphic and paleo-environmental age estimates for the Argyle Channel deposits and does not use the radiocarbon dates.

A second Fault Activity Report was submitted by GDC for locality S2-8, dated September 3, 2014 (Group Delta, 2014b). This investigation consisted of additional CPT and core borings from adjacent sites in the vicinity, and an additional trench located on the eastern portion of the site that also extended south into GDC Site 1 (locality S2-9). During this second investigation, GDC reported a bedding plane fault underlies the site, where they concluded this fault is overlain by a buried paleosol "indicative of about 30 ka of weathering." This trench was excavated in response to comments by the City of Los Angeles noting that faulted Pleistocene sediments were found directly across the street to the east (GDC, Site 3; locality S2-11). Within this eastern trench at locality S2-8, Argyle Channel deposits were exposed, underlain by mudflow deposits (previously referred to by GDC as the clayey sand or "basal clay" unit). Underlying the mudflow deposits they reported well-consolidated older alluvial debris flow deposits that are dipping gently to steeply to the south. C14 dates near the base of the Argyle Channel deposits were reported at ~4.1 to 4.3 ka. (Group Delta, 2014a, 2014b). The soil ages within the trench were derived from soil profile descriptions from R. Shlemon. GDC concluded that folding and related slip observed in their trench occurred prior to deposition of the mudflows, capped by a remnant buried paleosol of about 30 ka, and are overlain by the unbroken, estimated ~12 ka Argyle Channel deposits.

The data presented in the GDC report appear to be consistent with the interpretation that the Argyle Channel deposits are of Holocene age. However, multiple C14 samples GDC reported within their trenches near the base of the Argyle Channel, are only ~4.3 ka and thus the channel deposits do not represent the complete Holocene record. We consider the Argyle Channel deposits to be approximately 6 ka, based on C14 data throughout the two trenches, and related soil development. The interpretation that the underlying clayey deposit is pre-Holocene appears to be consistent with the reported data. Detailed analysis of the soil profile development was prepared by G. Seitz, of CGS, and is included in Appendix A of this supplement. This analysis includes further comments regarding the reported age classification of the Argyle Channel deposits, and underlying clayey sand unit.

The data presented in the GDC report regarding faulting of these deposits is also open to alternate interpretations. The trench log and correlation by GDC show that Argyle Channel deposits are unfaulted across much of the site. CGS performed a field review of the west trench on two occasions, the first was not extensive enough to verify all of the consultant's conclusions due to safety concerns, however a subsequent visit afforded the opportunity to view the clayey sand deposits and relative soil development at the base of the trench. Our review of the CPT and core boring data for GDC Site 2 finds the Argyle Channel sand unit appears to be continuously correlated between borings and CPT tests, however the underlying clayey sand unit is shown to be discontinuous across portions of the site. Our review further notes the cross sections illustrated by GDC favor the CPT correlations, where core boring data in some areas does not directly support their stratigraphic interpretation.

CGS viewed several stages of the eastern trench investigation that was placed to potentially expose faulting that may project onto GDC Sites 1 and 2 from GDC Site 3 (to the east). Faulting was observed in this east trench at approximately 80 feet from the northern trench end, placing this fault at about the same location and orientation as the trace mapped by CGS in the Preliminary EFZ map. Further observations of this fault during June and July, 2014, revealed that age of faulting appeared to be constrained by an overlying, unfaulted mudflow deposit and paleosol, estimated to be about 30 ka by R. Shlemon (GDC, 2014c). The soil structure within the soil that overlies the fault does not exhibit rotation of pedogenic faces and appears undisturbed by movement along this particular fault trace. Two older faults, below and cut by this fault, were also observed in the tilted fan deposits but were not logged by GDC.

Based on this new trench data, as well as other data, we have relocated the northern fault strand to project along Yucca Street toward the north. The southern fault strand is also modified in this area based on data from locality S2-9 (GDC Site 1), described below.

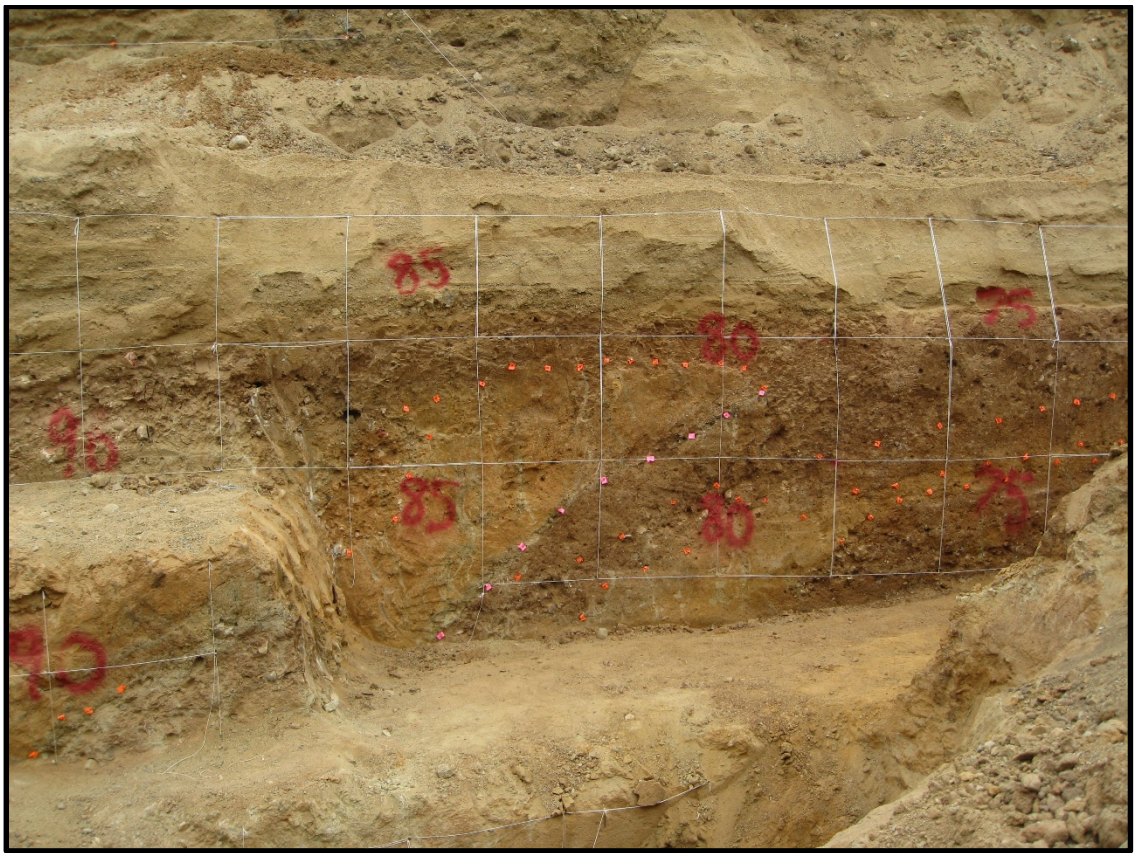

Figure 9 - View looking west at south dipping pre-Holocene bedding plane fault with a possible reverse sense of displacement in GDC's east trench. This trench was excavated across the southeastern portion of Site 2, and extends into Site 1; fault noted by pink flagging in the center of the photo. The upward termination of this fault, located right of Station 80 (about station 77), is within a fissure fill, which upon close inspection, is overlain by a mudflow deposit and soil, reported to be about 30 ka. In this photo, the Pleistocene age older alluvium (debris flow deposits) are overlain by a thin mudflow deposit, overlain by sands of the Argyle Channel.

Group Delta Consultants, Inc., (2014d) prepared a limited data report from a Fault Activity Investigation for locality S2-9 (GDC Site 1, Figure 8). Their investigation included core borings, a CPT transect and an approximate 240 foot-long, 30 foot-deep trench on the eastern portion of the site (a southward extension of the trench to the north on site 2). The GDC letter report includes a summary of technical findings that includes a summary of the interpretations for other sites surrounding Site 1. The only data provided in the report are CPT logs and two interpreted CPT profiles. Trench logs, borehole logs and age dating results were not provided. GDC reported an unbroken late-Pleistocene mudflow deposit and overlying Holocene Argyle Channel deposits within Site 1.

CGS was invited to the site for periodic trench review between June 30, 2014 and July 11, 2014, where we observed unbroken Argyle Channel deposits overlying an older unbroken unit that was tentatively correlated by GDC staff to mudflow deposits observed to the north. In the northern portion of Site 1 near the boundary with Site 2, the late-Pleistocene mudflow unit appears to be draped over the underlying folded debris flow units, and what may be the same unit appears near-horizontal as it extends to the southern end of the trench (Figure 10a).

We received no logs of this part of the trench to clarify these relationships. Figures 10a, 10b show the stratigraphy in the south end of the trench. Our review of the CPT data for this site, and some earlier core borings (from GDC Site2) indicates a discontinuous south-dipping Quaternary stratigraphic section, with a prominent stratigraphic break toward the southern end of the property indicative of a fault. The orientation of this break appears to be north-dipping, projects upward toward the ground surface near the southern property boundary (south of the trench exposure), is in alignment with the fault scarp located north of Carlos Avenue immediately to the east, and is in alignment with an inferred fault trace from the Langan data west of Vine Street (locality S2-7) to the west. On the basis of these observations, the southern trace of the Hollywood Fault has been moved to the southern boundary of locality S2-9, just south of the trench exposure.

Figure 10a – View looking southeast at the southern trench portion of the long eastern trench that extended from GDC Site 2 into Site 1. Trench reveals unbroken Argyle Channel deposits extend in depth possibly to about the upper string line at the lowest bench, just left of the ladder. A bioturbated layer and thin gravel bed of uncertain age below the bottom string line below the lowest bench also appears unbroken (see **Figure10b** below).

Figure 10b – View looking at east wall at about station 235, of east trench, GDC Site 1. Close-up of poorly sorted fine-grained deposits that underlie Argyle Channel deposits. Contact with a darker, bioturbated layer is near the base of the trench, just below the blade on the scraper tool. Where exposed, unit appears continuous and unbroken through the southern end of trench bottom. Total length of trench at base is approximately 240 feet extending across GDC Site 2 toward the southern boundary of Site 1. Bottom of southern trench end is approximately 45 feet north of the southern property line.

At locality S2-10 (GDC Site 4) a single, brief site visit was conducted by J. Hernandez on July 11, 2014, to a trench located underneath an existing parking structure. This trench revealed bedding that was relatively flat at the southern end of the trench, to gently north-dipping toward the northern end, with bedding dip increasing toward the north. This brief site visit included observations of several steep, south-dipping faults with normal south-side down sense of displacement, oriented approximately east-west. The faults projected to the ground surface underlying the parking structure and footings. Our brief observation did not find Holocene deposits within the trench. Unfortunately, the conditions of access to this trench included no photographs and no measurements of any kind, and only the above general observations can be reported here. A subsequent visit was offered by GDC for August 21, 2014 and was later cancelled. No report for this site was submitted to CGS within the September 15 deadline, and therefore newer data could not be included in this supplemental FER. Downhole observations of one bucket auger boring located in the street west of GDC Site 4 were made by J. Hernandez, which revealed depth to contact of the Argyle Channel deposits, and underlying clayey sand mudflow deposits at about 20.5 feet bgs. Due to groundwater levels rapidly rising within the southern boring, down hole observation of this second boring by CGS was prevented.

CGS also reviewed logs of test borings from Caltrans for the bridge abutments in the area of Argyle Avenue, north of Yucca Street. These boring logs described brecciated bedrock at depth, which may be related to the northern fault trace in this vicinity.

Our observations of faulted older alluvial units and north-dipping bedding within the trench is consistent with a west-trending anticlinal structure along Yucca Avenue. We have modified the preliminary zone boundary to include this zone of deformation and faulting in the Official Alquist-Priolo Earthquake Fault Zone map.

At locality S2-11, (GDC Site 3, Figure 8), Group Delta (2014c) reported the site is underlain by fill materials and older alluvial debris flows, which in turn are underlain by Modelo Formation. Their site investigation included both CPT and core borings, and an approximate 8-foot deep trench on the west side of the site. GDC reported the older alluvial unit consists of Pleistocene debris flows, and state that this unit is faulted. They associated this fault with a localized west-northwest oriented anticline, which extends north to GDC Site 4, as shown in their cross-section (Figure 11). They interpret these features to be due to regional transpression and not to seismogenic faults. They report the age of the faulting at this site is older than 35 ka based on unbroken mudflow deposits found to the west at Site 2.

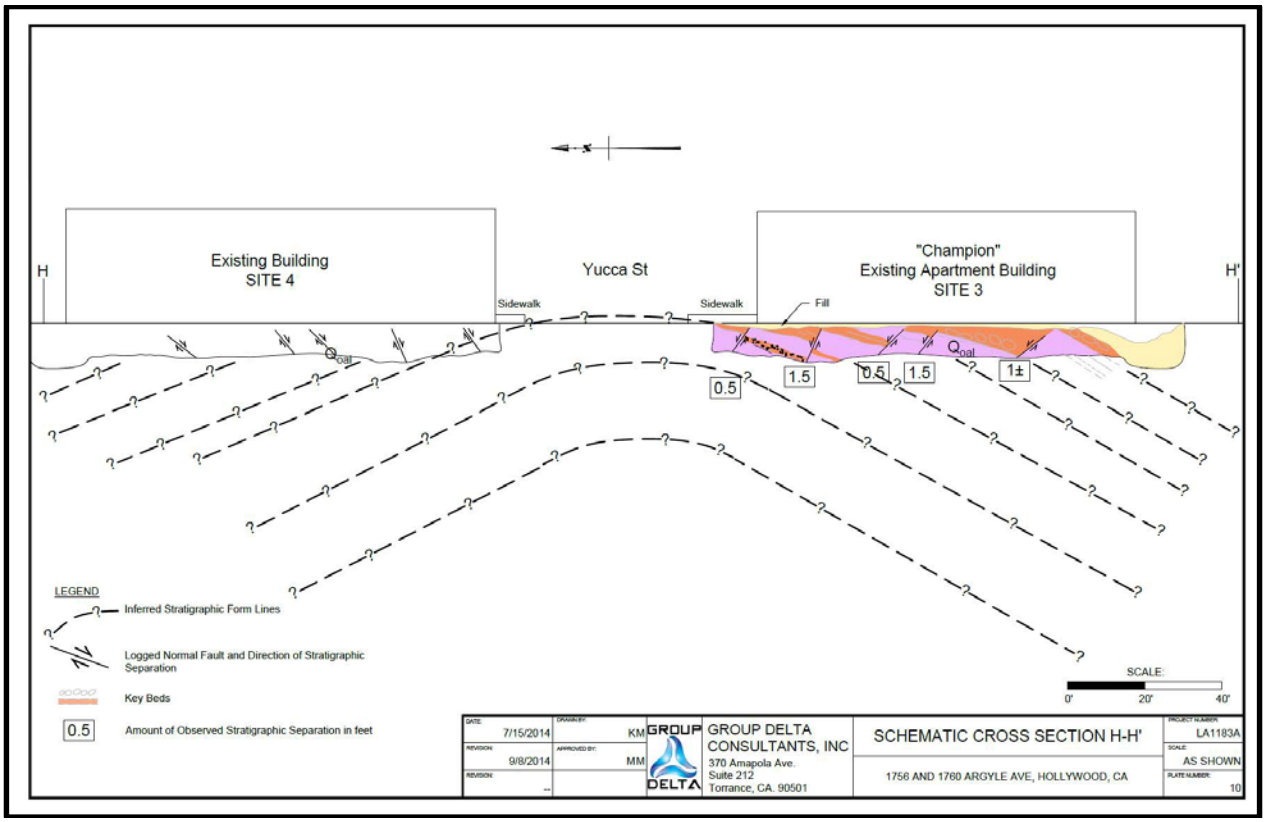

Figure 11 – Cross-section from GDC Site 3 showing anticlinal folding of Pleistocene debris flow deposits, inferred stratigraphic form lines and faults that offset this unit. Numbered annotation at each fault reflects GDC's observed stratigraphic separation at each location. Figure from GDC, 2014c.

The data presented in the GDC report is consistent with the interpretation that the deposits are of Pleistocene age although it is unclear why these "debris flow" deposits are differentiated from the similarly comprised and deformed older alluvial fan unit exposed and described at site 2.

Interpretation that the faults are local bending moment faults is not consistent with CGS field observations within the trench. CGS noted a significant lack of correlation across the southernmost fault, and that thickness of units changed across most of the faults, which indicates a component of lateral displacement (Figure 12). The southernmost fault appeared to be a prominent fault, as correlative units across the fault were not found, suggesting this fault trace may have seen the most displacement. No evidence for, or against, Holocene faulting was reported on this site because Holocene deposits, if present, were likely removed during site development.

Figure 12 – At GDC Site 3, locality S2-11, view looking easterly at faulted Pleistocene alluvial fan deposits, yellow flag indicates fault to right of shoring near the center of the photo. Gray zone at the top of the photo is concrete. Bedding gently dipping to the south (right), with steepness increasing to the south. Of the 7 faults CGS observed, most faults indicated a difference in unit thickness across fault. The southernmost fault did not have any correlative units across the fault.

A comment was submitted by Lettis Consultants International, Inc. (LCI), accompanied by a transmittal letter by Elkins Kalt Weintraub Reuban Gartside, LLP on April 8, 2014 to the SMGB to specifically address the BLVD 6200 property located at 6201 Hollywood Boulevard in Hollywood (locality S2-12, Figure 7). In their report, they present data and analysis of the site and vicinity, with additional focus on the southern, discontinuous trace of the Hollywood Fault that is mapped on the Preliminary EFZ map to underlie the site. LCI presented detailed topographic profile analyses consisting of 3 sets of data including: review of historical 6-minute topographic maps, high-resolution lidar imagery, and high resolution ground survey topographic profiles along 8 closely-spaced, north-south oriented streets. These profiles were located within the streets adjacent to the BLVD 6200 site and along other nearby profile lines. They identified breaks in slope within the profiles of these transects, and included locations of scarps previously mapped by Dolan et al. (1997), the projection of fault traces mapped by CGS in FER 253, and the BLVD 6200 project boundary.

LCI stated that in addition to the prominent break in slope located immediately north of their site, a subtle break in slope is expressed across the southern portion of the site. They reported this southern slope break is located south of the southern discontinuous fault trace mapped by CGS. They suggest that subtle breaks in slope can be related to several factors: change in slope direction on the ground surface, or thickness and directional changes within the alluvial fan system. Their analysis noted that the subtle slope break is coincident with an east-west trending apparent scarp mapped by Hill et al. (1979), and a possible fault scarp mapped by Weber et al. (1980). In their review of the 1926 topographic maps, they indicated that Argyle Avenue did not yet exist at this location, and that possibly the subtle break in slope observed in the street may have been created during subsequent construction of Argyle. Alternatively, they concluded that this subtle break in slope reflected in the composite topographic profiles (Figure 13), is most likely related to scarp-derived colluvium from the steep break in slope to the north.

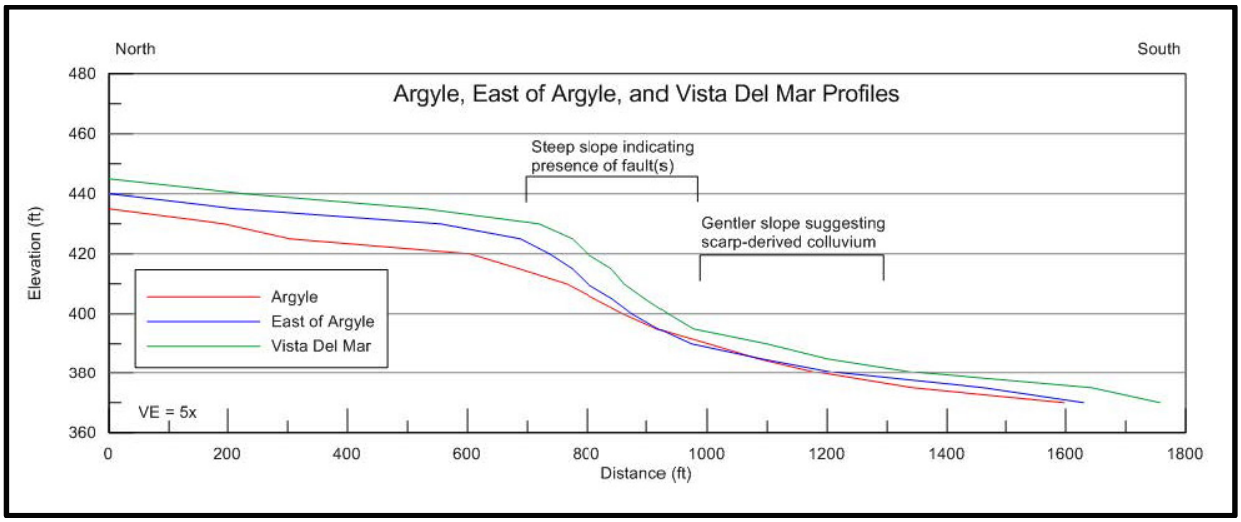

Figure 13 – Topographic profiles constructed from 1926 historical topographic maps, located within and adjacent to the BLVD 6200 project. These profiles prepared by LCI, indicate steep portions of scarps suggest they were created by fault movement, whereas gentle slopes suggest formation by down-slope movement of scarp-derived colluvium. Modified from LCI, 2014.

Summarizing earlier work, LCI reported that construction observations made by Geotechnologies, Inc. (2013) during the nearly 50-foot deep excavation for the BLVD 6200 project revealed no faulting or folding of units was observed during cleaning and installation of lagging of the sidewalls, prior to building construction. Regarding a steep groundwater difference underlying the northern portion of the site, LCI suggests that more detailed, closely spaced data is required to determine if the groundwater step is produced by a fault, or other barrier in the subsurface.

LCI also provided an alternative explanation of the incised drainage feature (CGS FER 253, Figure 12, locality S2h) that terminated at Carlos Avenue. They suggest that this feature was at a similar location to a mapped public ditch, as indicated on a Sanborn street plan, dated 1919. Based on review of topographic maps and land use, they infer this feature was likely a man-made or man-modified feature. In their conclusions, LCI reported the southern CGS-mapped fault strand is not “well-defined” and without benefit of detailed subsurface investigation, minor secondary faults cannot be conclusively demonstrated at sites near the main scarp; the small drainage incision CGS associated with faulting is likely man-made; and the main trace of the Hollywood Fault is located immediately north of the BLVD 6200 site.

Based on an analysis of available boring log data from adjacent studies in the area, LCI interpreted an alternative location for both the northern trace and the southern trace that they suggest would best fit the previous mapping by Dolan et al. (1997).

The data presented in the LCI report was particularly helpful in CGS review of topographic breaks in slope. Fault traces mapped by CGS in this area were based on geomorphic interpretation using similar data as used by LCI, as well as fault traces from Dolan et al. (1997), Hill et al. (1979), and Weber et al. (1980). In addition, the southern discontinuous fault trace was mapped using original subsurface data from Geotechnologies, Inc. (2006) that included logs of borings and the site topographic base map. CGS review of the high resolution street survey data submitted by LCI in their report, and detailed observations included in the Geotechnologies (2013) report, finds justification to modify our interpretation of the location of the principal southern fault trace.

Further, CGS review of the data along Argyle Street, at locality S2-11 (GDC Site 3), finds a section of south-dipping Quaternary fan deposits which presumably extend to the 35'-40' high slope immediately north of Carlos Avenue. This east-west trending slope has been interpreted to be a fault scarp (Dolan et al, 1997; Hernandez & Treiman, 2014; Lettis Consultants International, 2014). GDC offered the unlikely interpretation that this slope is erosional. South of Carlos Avenue, a 50-foot deep excavation for the BLVD 6200 project reportedly encountered only flat-lying sedimentary deposits (Reinard Knur, personal communication to J.Treiman) with no indication of a more indurated and tilted Pleistocene section. A letter report from Geotechnologies, Inc. dated August 16, 2013 described interlayered sands with no mention of either bedrock or deformation. The contrasting sections north and south of Carlos Avenue support a fault interpretation at this location.

Segment 3

As described above, LCI (2014) prepared several topographic profiles along north trending streets in the vicinity Yucca Street and Argyle Avenue, which included portions of both Segments 2 and 3. Their analysis included identification of breaks in slope in the area of locality S3-1 (Figure 14). LCI inferred these features were attributed to either: tectonic fault scarps (steep breaks), or alluvial fan or colluvial deposits eroding off the fault scarps (subtle breaks).

The data presented in the LCI report is helpful for reviewing the magnitude of breaks in slope as they trend from west to east across this portion of Hollywood. As a result, the western portion of the fault trace along Segment 3 appeared to be mapped a few feet north of the base of a subtle break slope, as indicated in the LCI profiles. We have modified the fault trace closer to the base of the slope break as shown in Figure 14. This modification has no effect on the EFZ boundary at this location.

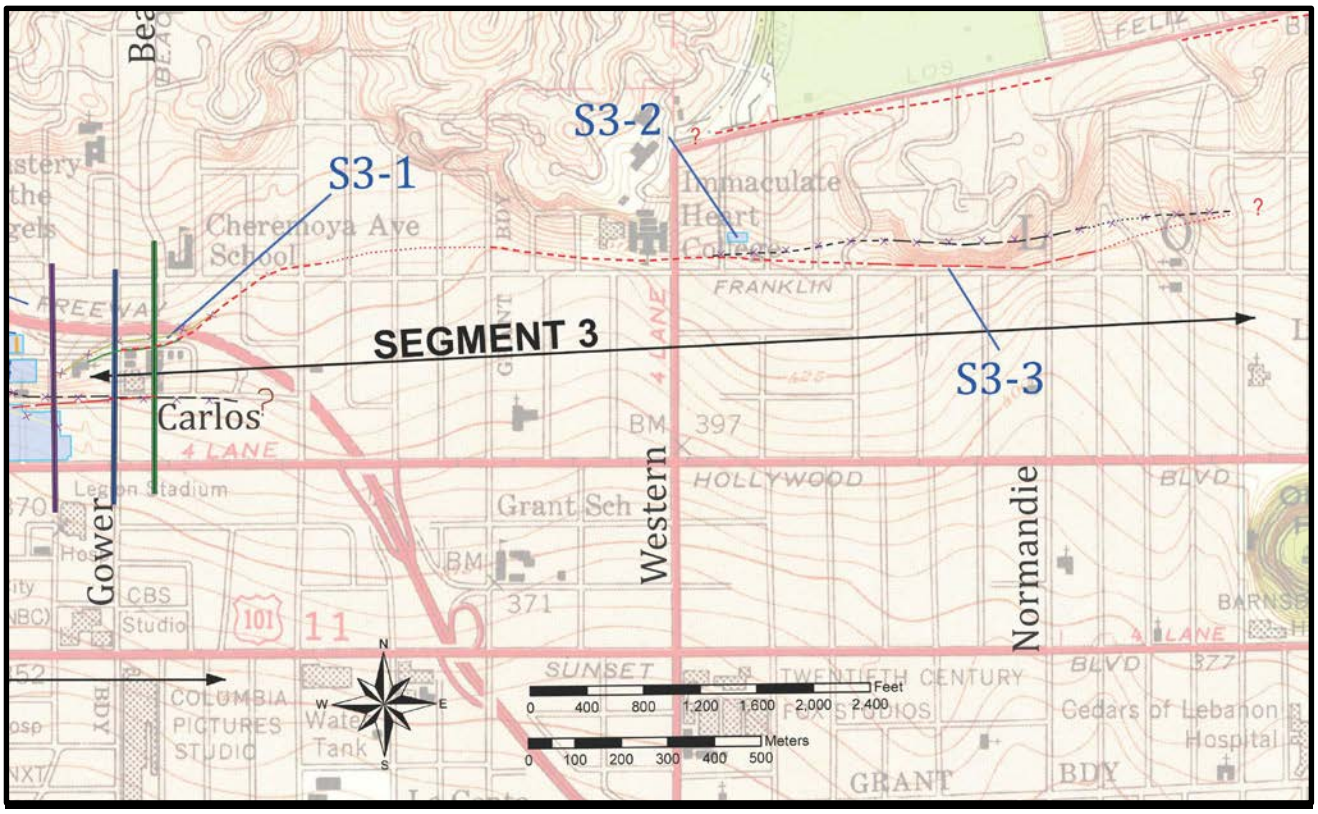

Figure 14 – Localities within Segment 3. North-south lines near Gower are elevation survey transect locations by LCI. At locality S3-1, the red fault trace indicates the revised fault trace location based on breaks in slope identified within the LCI surveys. Purple cross hatch on the black fault trace indicates location of fault trace as reported in the FER. Locality S3-2 is the Bay City Geology study site. Locality S3-3 indicates the modified fault trace (in red) based on revised interpretation of the scarp utilizing the 1926 topographic base map as described in the text.

Bay City Geology, Inc. (2014) performed an investigation for a site located within the Preliminary EFZ at locality S3-2 (Figure 14). Three large diameter borings were drilled, revealing a thin layer of older alluvium, underlain by weathered Topanga Formation siltstone and sandstone, grading to less weathered bedrock at about 21 feet bgs. Bedding planes in Topanga measured in the borings had northwest strikes, with dips to the southwest. Bay City stated that similar geologic units were encountered in all of the borings at similar depths, where they indicated this was positive evidence for continuous, unfaulted geologic units across the site. From these data, they inferred the Hollywood fault is located south of the site.

The data presented in the Bay City Geology report is consistent with the interpretation presented in the initial FER that the Hollywood Fault lies south of this site as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

At locality S3-3 (Figure 14), CGS revised the location of the Hollywood Fault trace along Franklin Avenue east of Western, based on a review of the 1926 topographic map covering this area. Our initial interpretation in this area utilized a later version of the topographic map, where topographic details were more subtle. Our reinterpretation of the fault trace follows closely with the trace mapped by Dolan et al, 1997.

As a result of this minor adjustment, the EFZ boundary has shifted slightly to the south.

Segment 4

No new data or comments were received for Segment 4.

Segment 5

David L. Perry, comment letter dated April 18, 2014: Mr. Perry submitted a comment to the SMGB on April 18, 2014 regarding the location of the Hollywood Fault and analysis of the supporting data from the Northeast Interceptor Sewer (NEIS2A) project area (locality S5-1a) as shown on Figure 15. In this letter, Mr. Perry reports the cross-section utilized in the FER (from the Los Angeles Department of Public Works, 2013) is vertically exaggerated, and includes borings that were projected up to 63 feet horizontally into the section. In the AMEC (2013) report, he states there is a cross-section drawn at a 1:1 scale, and acknowledges subsequent boring data performed by the City of Los Angeles Department of Public Works (City of Los Angeles, 2013) was included in the cross section utilized by CGS for the FER. Mr. Perry's interpretation of the data, and his extensive experience in this area suggests the "thickening of young alluvial deposits within the fault zone" as reported by CGS, is likely attributed to paleochannels from the Los Angeles River system, and that the projection of the data into the cross-section should include consideration of geomorphology and paleochannel geometry.

We reviewed Mr. Perry's comments, and appreciate the insight he provides in this area, and particularly with his experience on the NEIS project. Regarding projection of data into the NEIS profile, we acknowledge the thickness variation of recent alluvium in the vicinity of subsurface faulting may be due to erosion processes, and paleochannel morphology along the ancestral Los Angeles River system.

Patrick Schmidt, and Fred Burnett, (2014): Mr. Schmidt and Mr. Burnett of the City of Los Angeles Bureau of Engineering (BOE) provided CGS a technical paper they prepared in February, 2014 that was submitted to the Underground Construction Association's North American Tunneling Conference (NAT). In this paper, they discussed some of the exploratory methods implemented during the Northeast Interceptor Sewer project (NEIS), including: borings with down-hole geophysics, packer and pressuremeter testing, CPT testing, Remi surveys and surface geophysics lines. They reported some of the difficult conditions they anticipate encountering during tunneling along the fault zone, including: squeezing and running ground conditions, high methane gas concentrations, and up to 5 bars of water pressure. They reported the main Hollywood Fault was located between exploratory borings M08-B4 and M08-B5, where interpolation of the geophysical surface survey data identified two north dipping fault planes with three south-dipping secondary faults in the hanging wall that merge at depth.

This technical paper describes conditions the City of Los Angeles BOE will encounter during tunnel excavation operations. No additional details regarding active faulting either outside or within the tunnel alignment were noted. However, their description of difficult tunneling conditions keys into the general width and local structure of the fault zone along the west bank of the Los Angeles River Valley.

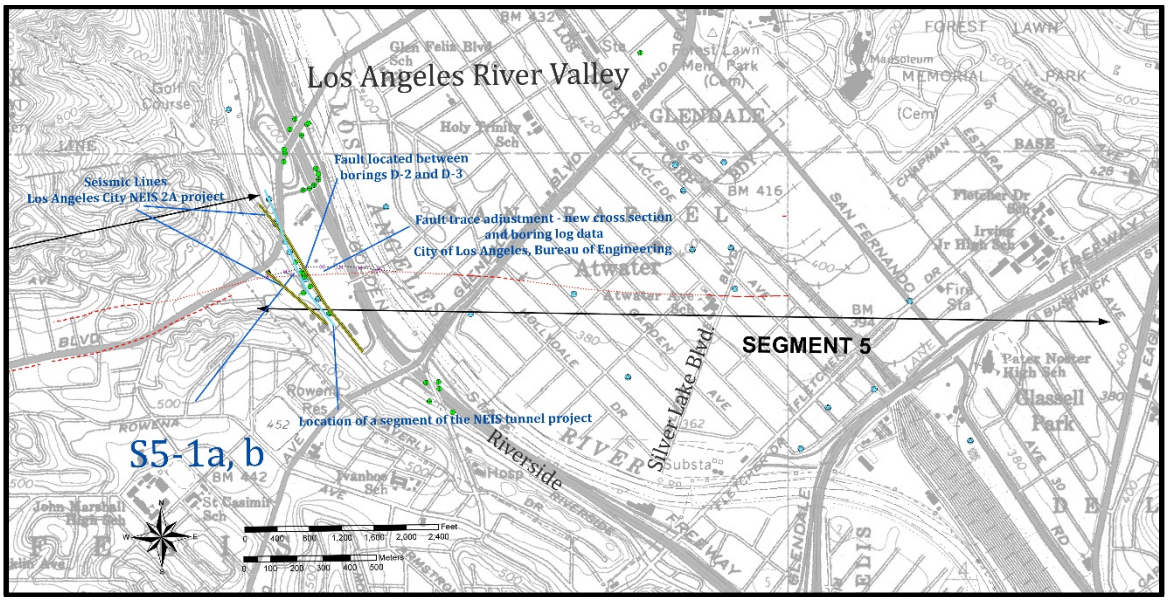

Figure 15 - Localities S5-1a, b show where additional information was received from the City of Los Angeles, Bureau of Engineering Department for the NEIS 2A project. Figure shows adjusted location of the Hollywood Fault trace, based on these new boring logs, cross section, and consideration of comments received from D. Perry. Red lines are final fault trace, purple cross hatch on black fault trace indicates location of fault trace as reported in the FER. Light blue line represents a segment of the NEIS tunnel alignment. Yellow lines indicate seismic profile transects. Green and blue symbols along the alignment represent core borings and monitoring wells, respectively.

City of Los Angeles (2013) conducted an additional fault study that included 3 borings that were drilled during April - May 2013 for the NEIS 2A sewer project. These borings were drilled to further define the limits of the deep older alluvium associated with the active trace of the Hollywood Fault at locality S5-1b. The borings also helped to define the artesian groundwater pressures, depth of bedrock, and methane concentrations they will likely encounter during tunneling operations.

City of Los Angeles (2014) prepared an updated cross-section with location map showing the investigation sites along the NEIS tunnel alignment. This new cross-section included the locations of the 3 borings presented in the 2013 report at locality S5-1b (Figure 17).

Our review of the updated cross section and boring logs received from the City of Los Angeles (locality S5-1b), finds that the original projected surface trace of the fault should be shifted to the south approximately 90 feet. We have revised the location of the fault trace based on this new cross section and supporting data. A corresponding revision of the zone boundary has been made.

DISCUSSION

SEGMENT 1

Studies were received for one site along this segment (Golder Associates, 2014a, b) but they revealed no new data that would modify our conclusions or recommendations for zoning in this area.

SEGMENT 2

Several modifications to faults within segment 2 shown on the Preliminary EFZ map are appropriate in response to detailed fault investigations and additional interpretation. The most noticeable change is in the fault pattern. Rather than the series of en-echelon fault strands initially depicted, the official Alquist-Priolo Earthquake Fault Zone Map should depict a distinct northern and southern trace that better fit the data. The basis for these modifications are summarized below.

Northern strand of the Hollywood Fault:

Re-assessment of the preferred fault trace at site S2-4 supports the fault projection on a straighter line between well-defined faults to the east and geomorphic features to the west. Trench observations by CGS at site S2-5 revealed a soil-filled fault zone within the Topanga Formation bedrock. Faulting was oriented generally east-west, and was steeply north-dipping, suggesting the northern fault strand in this location continues along an eastward trend. The northern strand may continue across a small ridge that extends south from the general mountain front, probably marking the break between higher ground to the north and a flattened portion of that ridge at Franklin Avenue.

MTA cross sections show faulting south of Franklin Avenue near Cahuenga Boulevard that is interpreted to be related to this strand, from there it is believed to continue along the southern margin of the truncated ridgelines to the east (at Vine Street). The northern strand continues east of Vine Street to sites S2-10 and S2-11 at the corner of Yucca and Argyle streets. There, small faults and a prominent fold in Pleistocene alluvium may be interpreted as resulting from lateral faulting and near-fault folding, though this is not the preferred interpretation of the consultants who studied this site.

Yucca Street Anticline:

GDC suggests this fold is a response to “regional transpression and not related to local faulting.” We tend to believe that the fold may be directly related to deformation associated with the Hollywood Fault. Abundant shearing in the bedrock observed by GDC and others, north of Yucca, suggests the presence of the northern strand of the Hollywood Fault Zone in this area. We see several fault-related possibilities for this fold. The fold may have been generated in much the same manner suggested by Figure C in the report for GDC Site 3 (GDC, 2014c). The pattern of folding and faulting is in general accord with the geometric relationships described by Harding (1974) for wrench fault situations.

Another possibility is that we may be seeing, within GDC Sites 3 and 4, the crest of a broad flower structure along part of the Hollywood Fault Zone, bounded here by the north and south strands. The magnitude of offset along some of the faults, including an unknown lateral component of slip, suggests that these are more than just passive normal faults as suggested by GDC.

A third alternative might be that the fold was responding as a hanging wall structure above a north-dipping reverse-oblique southern strand. GDC claims that their data for GDC Site 1 preclude the presence of an active fault along the southern margin of the fold, however, having looked carefully at the data submitted we do not find this certainty and in fact find several anomalies in the CPT data that may be explained by faulting.

Southern Strand of the Hollywood Fault:

The southern strand is most strongly defined at the surface by the truncated ridge between Whitley and Wilcox (west of Cahuenga) and a similarly truncated ridge north of Carlos Avenue (east of Argyle). The location and significance of the southern strand is confirmed by the Metro borings and cross section along Cahuenga (Figure 7) and the subsurface data submitted previously by Langan (2012b; locality S2-7). A revised location of the fault at the latter location in the initial FER, due to re-evaluation of the fault dip from recent studies, is corrected in this report. Although complete continuity of the southern fault strand is not confirmed through this area, it is suggested by anomalies in a CPT transect to the east of Vine (GDC Site 1). The most prominent horizon in this transect, the base of the Argyle Channel, has several anomalous south-side-up steps that may be related to faulting, and several less-continuous units lower in the section appear to support corresponding disruptions. Some of the latter may correspond to the faults observed near the southern GDC Site 2 property line in the eastern trench for that site. However, the main zones of disruption, extending highest in the section, may lie between CPTs C-21 to C-22 and C-26 to C-29. The eastern trench at GDC Site 2 (and extending south into GDC Site 1) did not extend far enough south to fully explore these possible faults and their potential connection to the scarp at Carlos Avenue. Data from a boring log transect on GDC Site 1, that might cross the fault, have not been released.

East of Argyle Avenue the southern strand continues along the base of the slope along Carlos Avenue. South-dipping older alluvium underlies the ground to the north, as exposed in studies for GDC Site 3, whereas alluvium exposed in a 50-foot deep excavation to the south appeared to be flat-lying (Knur, personal communication, 2014). Inspection of boring logs for that project (Geotechnologies, 2006) suggest, based on blow counts, that older fan deposits may have been encountered at depths at or below 20 feet. Analysis of the local slopes and geomorphology by LCI (2014) supports slight adjustment of the fault along Carlos Avenue.

Other splays previously mapped (Preliminary EFZ map):

The fault trace previously projected southeast near Franklin Avenue and Whitley Avenue, was mapped based on air photo interpretation of a prominent scarp at Yucca, east of Whitley, and geomorphic interpretation by Dolan et al. (1997). Based on review of MTA data, and observations of the fault at Cherokee (Site S2-5), this northern fault trace is re-oriented to project east through the fault zone identified in the MTA data, connecting with the northern fault strand at Yucca and Ivar, and the former southeast-trending trace is removed from the final map.

The plotting of the similarly oriented “Argyle strand” through GDC Site 2 had been based on stratigraphic and hydrologic anomalies in the preliminary data that was available in 2013, data which appeared to support the prior fault interpretation by Dolan et al. (1997). Subsequent trench investigations for GDC Sites 2 and 3 have clarified the cause of these anomalies, relating them to the complex geomorphic history of this area. Consequently the previously inferred southeast-trending fault in this area is no longer a preferred interpretation for the northern fault strand. This southeast-trending segment of fault should be deleted from the EFZ map. The older fault seen in a trench at this location seems to be unrelated to the initial indications of a fault crossing this site. [Note that correlation of geologic units and interpretations relevant to

deeper faulting on Site 2 are very difficult to make as there are discrepancies between the boring logs submitted and the drawn sections].

The initial projection of a splay of the southern fault strand at BLVD 6200 was based on an apparent groundwater anomaly and projection of the southern strand from the west. A re-projection of this strand along Carlos Avenue now appears to be more likely. Although splay faults are still possible, as suggested by the preliminary data, this is a minor inferred splay rather than a continuous fault trace and need not be depicted on the final map.

Summation:

The Hollywood fault in segment 2 appears to include a northern and a southern trace and a number of other minor faults and folds. Some faults within this zone may not be recently active, but the two main strands are "sufficiently active and well defined" so that an official Alquist-Priolo Earthquake Fault Zone should be established to ensure that active fault strands may be identified and avoided in the course of future development.

Segment 3

Detailed topographic profiles prepared by LCI for review of steep slope breaks along the western portion of Segment 3 provided a more regional view of fault scarps across this segment. Our review of this new data finds a better fit for the location of the fault trace in this area. Our revised interpretation of the fault trace using vintage topographic maps also provides justification for the fault trace to be re-mapped slightly south of the initial location reported in the FER.

Segment 4

No additional data has been received and no additional interpretations have been made by CGS that would result in modification of the preliminary Alquist-Priolo Earthquake Fault Zone map in segment 4.

Segment 5

Review of the new cross section prepared for the NEIS 2A tunnel alignment and consideration of the paleochannel geomorphology along the Los Angeles River has prompted a minor revision to the fault trace as it trends eastward across the Los Angeles River Valley. Our review of the updated cross section and boring logs received from the City of Los Angeles (locality S5-1b), finds that the original projected surface trace of the fault should be shifted to the south approximately 90 feet. We have revised the location of the fault trace based on this new cross section and supporting data. The location of the adjusted fault trace is shown at locality S5-1a, b, and as a result of this southern shift of the fault trace, the EFZ boundary has also been slightly modified.

RECOMMENDATIONS

Recommendations for encompassing faults in Alquist-Priolo Earthquake Fault Zones are based on the criteria of "sufficiently active" and "well-defined" (Bryant and Hart, 2007). The principal traces of the **Hollywood Fault** as shown on Plate 1 are recommended for zoning as they are mostly well-defined and believed to be active.

Segment 2

- Modification of the fault trace on the west side of Highland at Franklin is recommended to align with our reassessment of the dominant trace at this site.
- Modification of the fault trace along Franklin Avenue east of Cherokee, to project the fault eastward along Franklin, is based on the youthful, soil-filled fault zone at the Cherokee site and controlled by boring data along Cahuenga Boulevard.
- Removal of the southeast-trending splay south of Franklin Avenue, east of Whitley is based on the fault realignment noted above.
- Modification of the northern fault trace at Yucca Street between Ivar Street and Argyle Avenue is recommended to better match the topography.
- The southeast-trending splay between Vine Street and Argyle Avenue is removed because it was shown to not exist in the Holocene section.
- Modification of the southern fault trace between Cahuenga Boulevard and Gower Street, is based on subsurface data and topographic expression.

Segment 3

- Modification of the western portion of this segment based on detailed street survey data from LCI (2014). Additionally, at Franklin Avenue east of Western Avenue, modification of the fault trace based on revised review of vintage topographic base map for this area.

Segment 5

- Modification of the fault trace based on adjustments to the boring locations provided in a new cross section and site map provided by the City of Los Angeles Department of Public Works.

PG 7237, CEG 2260
November 5, 2014

I have reviewed and concur with
the recommendations in this report

Jerome A. Treiman
PG 3532, CEG 1035
November 5, 2014

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Appendix A – Review of Soil-Stratigraphic and Paleo-Environmental Reconstruction GDC Trench - Fault Activity Investigation 6230 Yucca Street, Hollywood Area City of Los Angeles, California, report dated May 6, 2014.

Review by G. Seitz, CGS, Menlo Park
This fault activity investigation report lists 7 objectives that in part will be re-evaluated here. The focus is on the chronology of a stratigraphic section. The numbered points below are from the reviewed report.

2.) To determine the approximate age of the exposed sediments based mainly on relative soil-profile development of the several paleosols encountered in the trench;
The stratigraphic section of interest named the "Argyle Channel" consists of a sequence of clastic nested channel deposits cut into an underlying clay unit. At the onset (p.3), it is asserted that the contact between the channel and the clay represents a regional unconformity, a major climate change and the onset of "pluvial conditions", and is judged "conservatively" to have taken place ~12-16 ka ago associated with marine oxygen-isotope stage 2. The base of the channels are interpreted to be at least ~10-12 ka old, based on this assumption that the unconformity represents a regional climate change along with interpretations about the time required to form paleosols within the channel deposits.

No evidence was presented to show that the contact at the base of the "Argyle Channel" is in fact a regional unconformity as opposed to a more common local unconformity controlled by any number of geomorphic thresholds. The conclusion that this contact must be ~12-16 ka old is speculative.

The time represented by the sequence of nested channel deposits is based on 5 channel units identified as paleosols. These are described and time required to form each horizon is estimated based on selected soil stratigraphic characteristics such as pedogenic clay accumulation or rubification. Estimated time required for soil development is reported in general terms, ranging from 1 to 3 ka years or simply as ~1 ka, for example. These general estimates are not sufficiently detailed to use as an age estimate for a deposit. Quantitative estimates should be presented with a mode and uncertainty. We acknowledge the principles of soil development, i.e. weathering of a parent material to a characteristic soil profile, however to quantify age estimates requires more than what is provided. As mentioned in the report (p.2), the use of SDI or Soil Development Index requires a calibration with known age soil chrono sequences. Or, p.7: "Based on calibration with numerically dated soils elsewhere in Mediterranean climates", unfortunately these calibration correlations were not provided. The correlations with these soil chrono sequences must be made explicitly and reported in order for age estimates based on soil development to be credible. These potential correlations were not provided. In general, in the best case scenarios, soil development derived estimates have uncertainties several times greater than what was reported here. Several sources of uncertainty were reported, including unknown parent materials and truncated profiles. An example of the acknowledged uncertainty p.3: "it is almost impossible to confidently calculate the amount of translocated clay compared with that inherent in the parent material", we agree and extend this statement to the presented results, and conclude that the time periods presented are highly speculative.

4.) To assess the validity of two radiocarbon dates obtained at the site, particularly focusing on potential sample contamination.

The only numerical age estimates provided in the report are two radiocarbon dates from the nested channel deposits of the "Argyle Channel". There are principles in how to evaluate the validity of radiocarbon dates that basically fall into two categories: 1) context and 2) sample contamination.

The dated units are nested channels, which are clearly erosive and depositional, and hence reworked detrital charcoal is to be expected. It is common practice to evaluate dating results by their stratigraphic context and consistency. The 41 ka date (Yucca-1) is located 5 feet below the 4.3 ka date (Yucca-2). The close proximity and the high probability that reworking occurs in this environment allows the assessment that this sample is most likely reworked and thus only provides a maximum age constraint. Shlemon appears to share this conclusion regarding the context uncertainty, yet invokes unrelated sample contamination considerations for which no evidence is presented to discredit the radiocarbon dating results. In fact, the subsequent extensive dating from the East Trench suggests the radiocarbon dating is reliable. All eight samples from the Argyle Channel deposits have essentially identical radiocarbon dating results of 4.2-4.4 ka showing that contamination is not an issue.

At this point it is worth stepping back and reviewing the radiocarbon dating method as it relates to these two samples, and the issues cited as reasons to doubt their validity (p.6). The first reason: modern groundwater contamination of the sample. For contamination either rejuvenating or aging, in terms of the dating result, two factors are to be considered: 1) the contamination pathway, and 2) the percentage amount of contamination. Sample contamination is a well-known, and well researched issue. Shlemon references Pigatti et al. (2007) to make this point, but this research clearly shows that a rejuvenating contamination by circulating groundwater, if present, would have no effect on the age of any sample younger than 15 ka. In fact this cited paper has no relevancy for the younger Yucca-2 sample, as the title illustrates (title:" Development of low-background vacuum extraction and graphitization systems for C-14 dating of old **[40-60 ka]** samples).

Small sample size is cited as an issue to doubt the result. Small sample size does not typically bias the result older or younger, it merely increases the uncertainty range of the dating result. Radiocarbon samples go through a chemical pretreatment designed to extract all possible contaminants in the sample. These chemical procedures are generally applied to samples whether they are actually contaminated or not. The samples dated appear to be detrital charcoal, and there is no evidence suggesting the applied acid-base-acid pretreatment was not successful in removing any possible contaminants. Considering the provided information we see no reason to exclude the Yucca-2 dating result of 4.3 ka. Although considerable uncertainty exists concerning the basal age of the Argyle Channel, a simple sediment rate extrapolation suggests that is may be approximately 6 ka. In general, C-14 dates are not excluded from chronological modeling unless there are clear reasons. We do not recognize any such issues with Yucca-2.

Additional radiocarbon chronological control was obtained in the East Trench, sites 1 and 2 (Group Delta report, September 3, 2014). This report restates the opinion that the previously obtained radiocarbon date from the West Trench "Argyle Channel Sediments" is not representative of its age. The east trench also exposed the Argyle Channel sediments and several radiocarbon samples were dated. Two samples Yucca-1 and Mill-1 were discussed with locations indicated on plate 6, with ages of 4.2 ka and 4.3 ka respectively. These dates along with 5 additional dates: Mill-2 (4.3 ka), Mill-3 (4.2 ka), Mill-5 (4.3 ka), Mill-6 (4.4 ka), and Mill-7 (4.4 ka) clearly demonstrate that the Argyle Channel sediments have an age of approximately 4

ka, and not 12 ka. The remarkable consistency of all samples having nearly identical ages is further evidence that sample contamination has not occurred.

On the adjacent property to the west Langan (2012b), stratigraphy similar to the previously discussed 6230 Yucca Street site was encountered with extensive age control consisting of 22 radiocarbon sample results. A constructed cross section A-A' (plate 2), which includes borings B-1, and B-5, presents an approximately 7.7 ka sandy alluvium overlying 8.5 ka clayey alluvium. Although abundant reworked older dates are present the younger envelope of dates as viewed in a stratigraphic depth versus age scatter plot shows stratigraphic consistency. In particular boring B-5 samples show expected stratigraphic order. The sample age distribution is typical of detrital charcoal samples in alluvial sediments.

State of the Practice

Numerous fault and stratigraphic studies have established numerical age dating methods as the most reliable method to confidently estimate the age of critical sedimentary sections. The most common method is C-14 dating, and since the 1990s AMS C-14 dating, and this along with a few other numerical methods has become the generally accepted state of the practice. At this site, it is not clear how many C-14 samples were taken. Considerable uncertainty stems from the fact that only a single C-14 date exists that appears to represent the age of a section of interest. Because detrital charcoal has an inherent context uncertainty, greater numbers of samples are often used to gauge the extent of this issue at individual sites.
However, this context uncertainty is generally strongly biased towards samples that are too old due to reworking. Context uncertainty of samples being too young is usually easily avoided because burrows are recognized during the field sampling.

Since the wide-spread application of C-14 to dating sedimentary sections, soil-stratigraphic age assessments have become more of a complementary method best suited for correlations and understanding of depositional processes. Currently the soil-stratigraphic methods are largely limited to situations where no other methods can be applied, and this is definitely not the case at this site. Hence, when it is critical to assign specific numerical ages to sedimentary units the most reliable methods are numerical and these have become the standard of practice. Clearly there are uncertainties inherent with C-14 dating, but simply listing these general issues with little or no consideration of their impact on actual results is not sufficient to exclude them. The Argyle Channel as demonstrated contains C-14 samples, more samples would provide greater confidence in the age estimates. This section appears well suited to another "state of the practice" method, OSL dating. The combination of multiple methods greatly increases the confidence of an accurate chronology.

Appendix B: Timeline of Site Visits – February-August 2014
Vicinity of Yucca & Argyle

1. Millennium property (east parcel); **2.** prior KFWB property;
3. Champion site; **4.** Green site – **4a**. related borings in street
See Figure 8 for site location index

CGS staff on site
BO – *Brian Olson*; GS – *Gordon Seitz*; JH – *Janis Hernandez*; JT – *Jerry Treiman*

Feb. 14: site 2 (KFWB) - we had some access to first KFWB trench, but safety concerns prevented entering deep northern portion of trench; southern part not cleaned (BO & JT)

-- requested return visit to site 2; request denied

Apr. 7: site 2 - access to deep part of trench (north) to see evidence for older horizon; southern part not cleaned (JH, JT).

May 14: site 3 (SE corner Yucca & Argyle) - truncated visit (~45 min.) (JH & JT).

Jun 12: site 2 - eastern trench started (JH, BO, GS)

Jun 30: sites 1-2 – east trench, southern leg; fault observed (JH, BO, GS, JT)

July 1: sites 1-2 – east trench, southern leg; south-dipping fault exposed (BO, JT)

July 2: sites 1-2 – no progress (job shut down) (JH, JT, BO)

[July 7 – Letter from Group Delta restricting CGS access to trenches; restrictions were shortly lifted]

July 8: sites 1-2 – south dipping fault observed with respect to older soil (JT, JH)

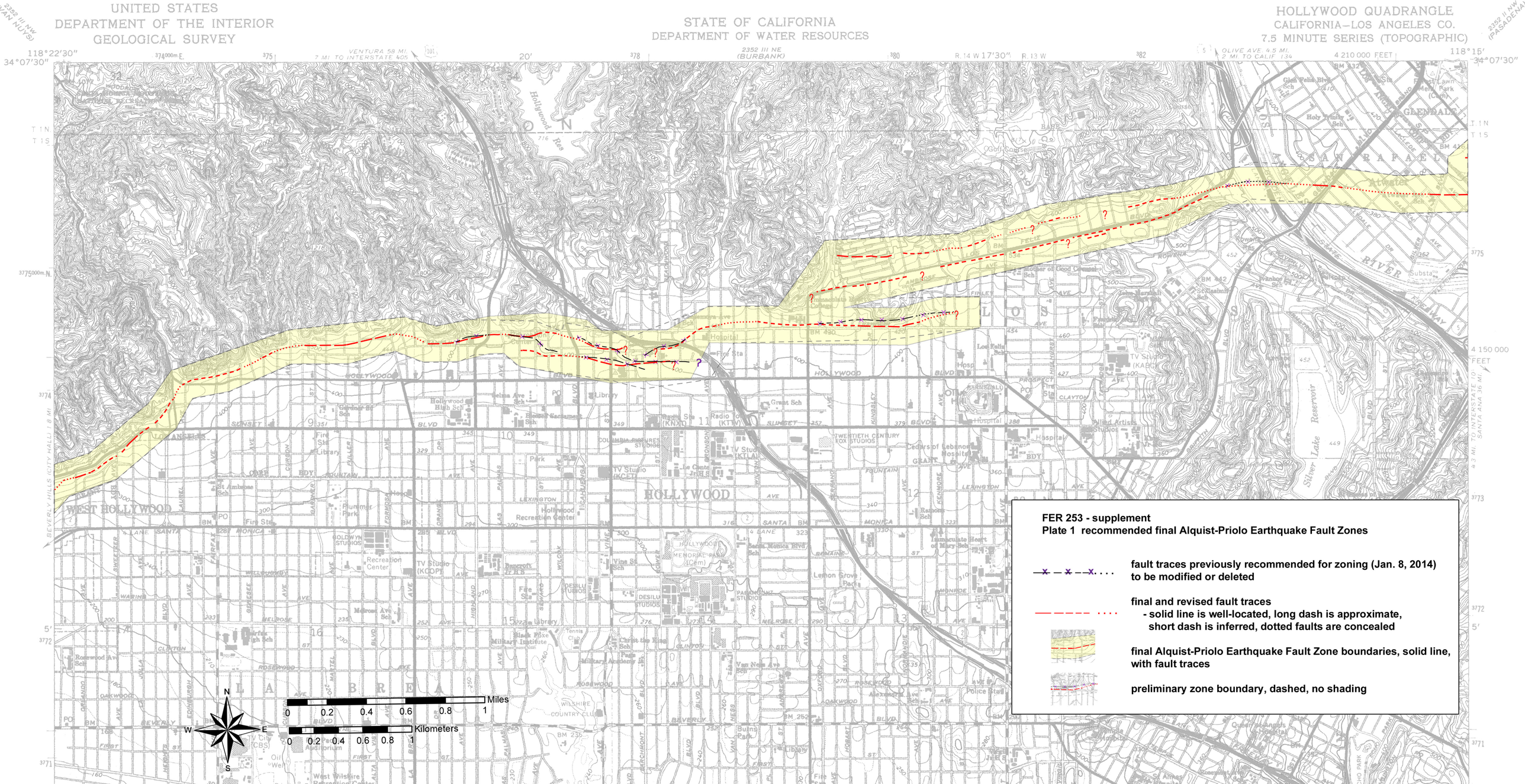
July 9: site 4a – down hole observation of boring 1 (northern bucket auger boring) Drilling not observed, cuttings cleaned up prior to arrival as boring was located in the street (JH)

July 10: site 4a – visit to observe down hole in boring 2; downhole observation was not performed due to safety issues (JH)

Jul 11: site 1 – Millennium-east - south end of trench observed (JH, JT)

Jul 11: site 4 – JH allowed brief access (~ 10 min., no photos, no notes, no exploration); JT denied access.

August 21: site 4 – planned visit cancelled by property owner


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
HOLLYWOOD QUADRANGLE
CALIFORNIA—LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
FER 253 - supplement
Plate 1 recommended final Alquist-Priolo Earthquake Fault Zones
fault traces previously recommended for zoning (Jan. 8, 2014) to be modified or deleted
final and revised fault traces
- solid line is well-located, long dash is approximate, short dash is inferred, dotted faults are concealed
final Alquist-Priolo Earthquake Fault Zone boundaries, solid line, with fault traces
preliminary zone boundary, dashed, no shading
Miles
Kilometers
HOLLYWOOD
WEST HOLLYWOOD
LOS ANGELES
GLENDALE
LA BREA

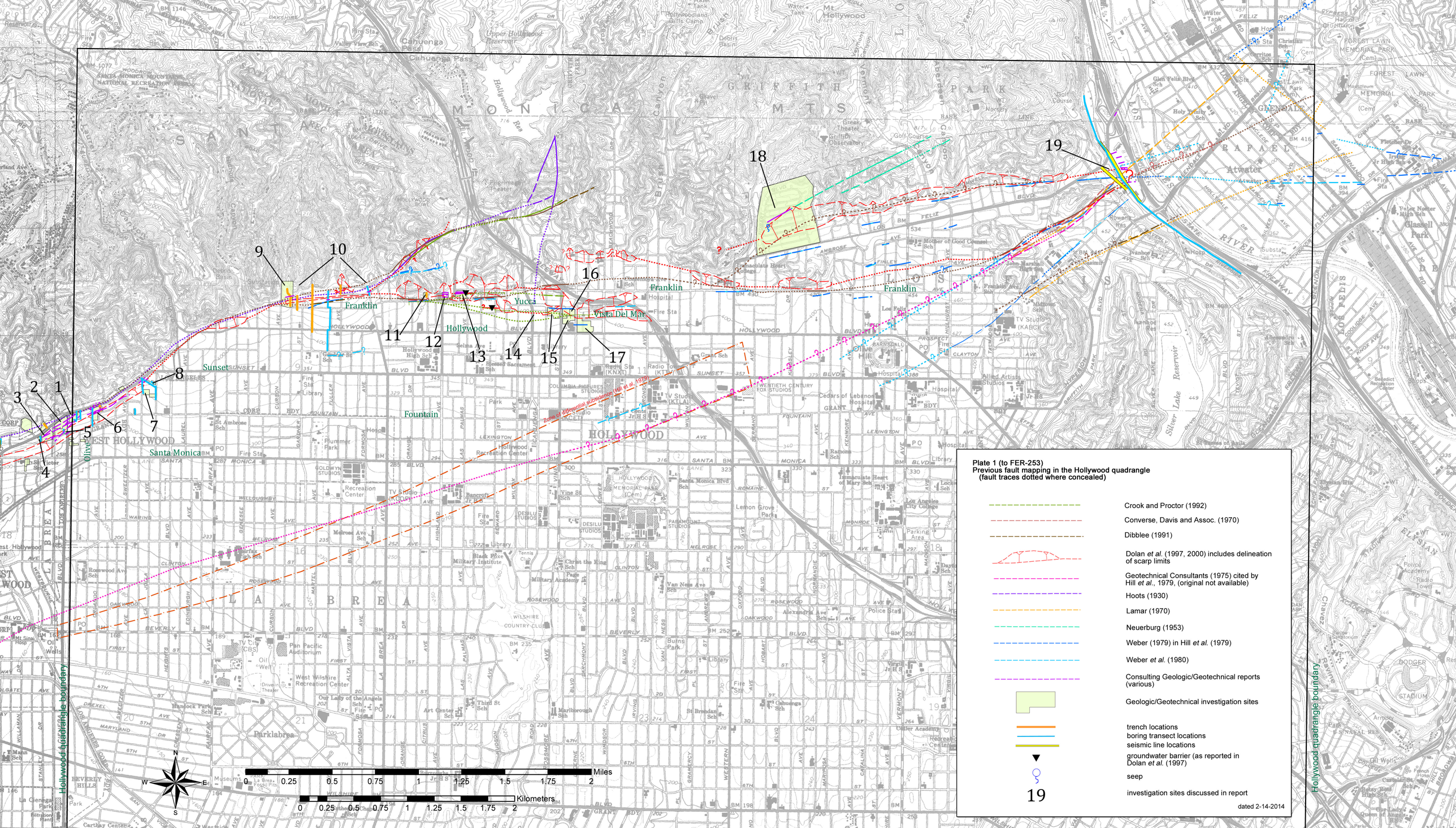


Plate 1 (to FER-253)
Previous fault mapping in the Hollywood quadrangle
(fault traces dotted where concealed)

- Crook and Proctor (1992)
- Converse, Davis and Assoc. (1970)
- Dibblee (1991)
- Dolan *et al.* (1997, 2000) includes delineation of scarp limits
- Geotechnical Consultants (1975) cited by Hill *et al.*, 1979, (original not available)
- Hoots (1930)
- Lamar (1970)
- Neuerburg (1953)
- Weber (1979) in Hill *et al.* (1979)
- Weber *et al.* (1980)
- Consulting Geologic/Geotechnical reports (various)
- Geologic/Geotechnical investigation sites
- trench locations
- boring transect locations
- seismic line locations
- groundwater barrier (as reported in Dolan *et al.* (1997)
- seep
- 19 investigation sites discussed in report

dated 2-14-2014

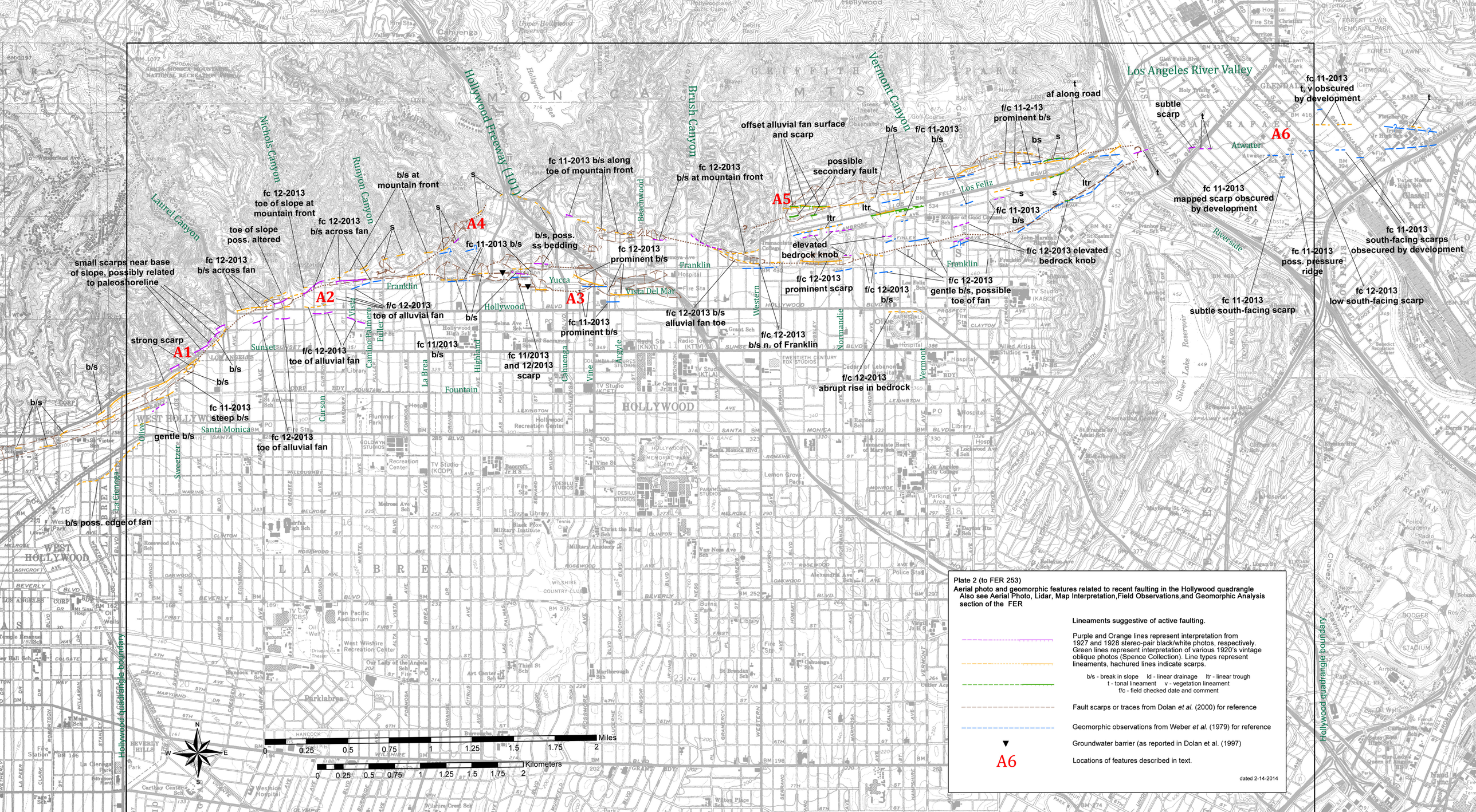


Plate 2 (to FER 253)

Aerial photo and geomorphic features related to recent faulting in the Hollywood quadrangle
Also see Aerial Photo, Lidar, Map Interpretation,Field Observations,and Geomorphic Analysis section of the FER

Lineaments suggestive of active faulting.

Purple and Orange lines represent interpretation from 1927 and 1928 stereo-pair black/white photos, respectively. Green lines represent interpretation of various 1920's vintage oblique photos (Spence Collection). Line types represent lineaments, hachured lines indicate scarps.

b/s - break in slope ld - linear drainage ltr - linear trough
t - tonal lineament v - vegetation lineament
f/c - field checked date and comment

Fault scarps or traces from Dolan *et al.* (2000) for reference

Geomorphic observations from Weber *et al.* (1979) for reference

▼ Groundwater barrier (as reported in Dolan et al. (1997)

A6 Locations of features described in text.

dated 2-14-2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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HOLLYWOOD QUADRANGLE
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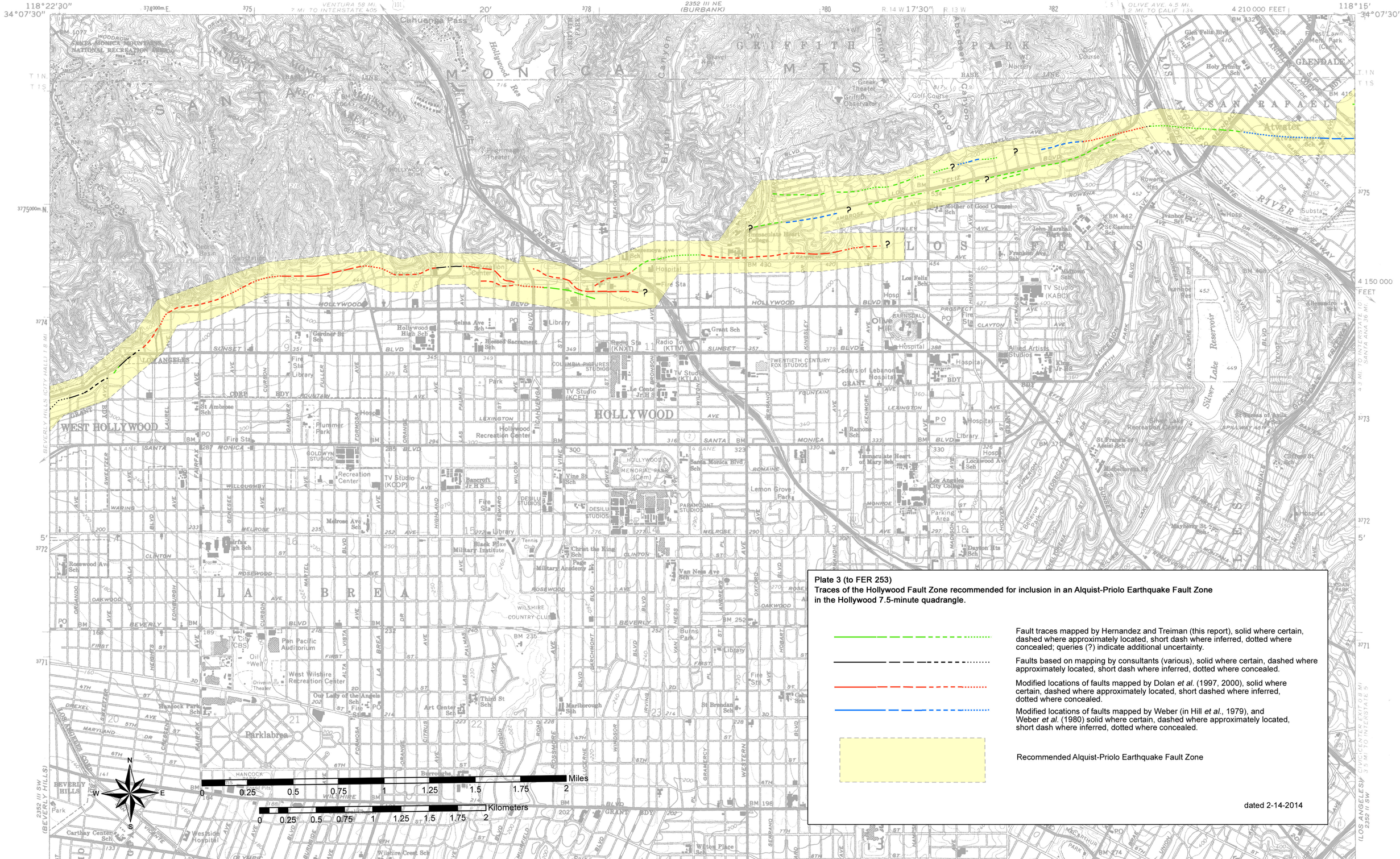

Plate 3 (to FER 253)
Traces of the Hollywood Fault Zone recommended for inclusion in an Alquist-Priolo Earthquake Fault Zone in the Hollywood 7.5-minute quadrangle.

Fault traces mapped by Hernandez and Treiman (this report), solid where certain, dashed where approximately located, short dash where inferred, dotted where concealed; queries (?) indicate additional uncertainty.

Faults based on mapping by consultants (various), solid where certain, dashed where approximately located, short dash where inferred, dotted where concealed.

Modified locations of faults mapped by Dolan *et al.* (1997, 2000), solid where certain, dashed where approximately located, short dashed where inferred, dotted where concealed.

Modified locations of faults mapped by Weber (in Hill *et al.*, 1979), and Weber *et al.* (1980) solid where certain, dashed where approximately located, short dash where inferred, dotted where concealed.

Recommended Alquist-Priolo Earthquake Fault Zone

dated 2-14-2014

CALIFORNIA GEOLOGICAL SURVEY
FAULT EVALUATION REPORT FER 253

THE HOLLYWOOD FAULT
in the Hollywood 7.5' Quadrangle
Los Angeles County, California

by
Janis L. Hernandez
Engineering Geologist
and
Jerome A. Treiman
Senior Engineering Geologist
February 14, 2014

INTRODUCTION

The Hollywood Fault is within the central portion of the Santa Monica-Hollywood-Raymond Fault system, which is collectively part of a greater than 200-km long west-trending system of oblique, reverse and left-lateral faults that separate the Transverse Ranges geomorphic province of California on the north, from the Peninsular Ranges province on the south (Dolan *et al.*, 1997). The Hollywood Fault extends east-northeast for about 17 km through densely populated areas, including the cities of Beverly Hills, West Hollywood, and the community of Hollywood within the City of Los Angeles, trending eastward to the Los Angeles River Valley (Figure 1).

Recent detailed geologic and geotechnical studies for residential and commercial development in the cities of West Hollywood and Los Angeles have reported Holocene faulting at a number of sites along the Hollywood Fault. Infrastructure projects (sewer and subway) and groundwater studies, in addition to gravity data, also provide support that the Hollywood Fault is active and continues eastward toward the Raymond Fault. The majority of the Raymond Fault has been zoned as active, to within about 4 km east of the Los Angeles River at the eastern edge of the Santa Monica Mountains (see Figure 1).

Both the Santa Monica and Hollywood Faults were previously evaluated for Holocene active faulting as part of the 1977 study area of the 10-year program for fault evaluation (Smith, 1978). That study concluded there was insufficient evidence of Holocene faulting to recommend fault traces for zoning at that time. Subsequent geologic and geotechnical studies, paleoseismic studies, geomorphologic studies reported by Dolan *et al.* (1997), Dolan *et al*. (2000), and other published and unpublished research, have prompted CGS review of these recently available data to re-evaluate evidence for Holocene displacement along traces of the Hollywood Fault.

The purpose of this report is to assess the location and activity of fault strands associated with the Hollywood Fault within the Hollywood 7½-minute quadrangle. Those faults determined to be sufficiently active (Holocene) and well-defined are zoned by the State Geologist as directed by the Alquist-Priolo Earthquake Fault Zoning (AP) Act of 1972 (Bryant and Hart, 2007). This report does not attempt to reevaluate any strands of the Newport-Inglewood Fault zone.

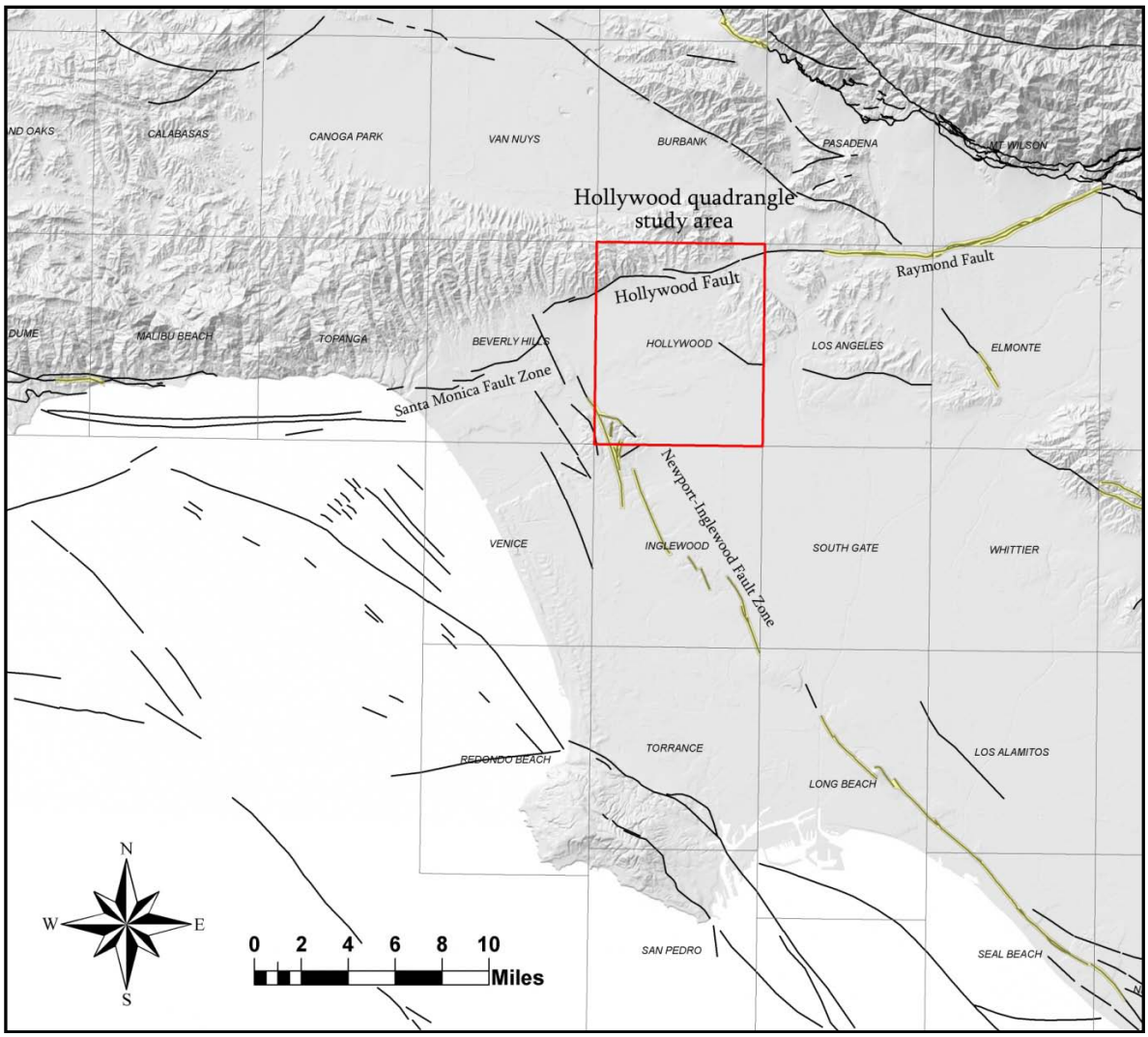

Figure 1- Study area of the Hollywood quadrangle and names of selected faults in the vicinity. Faults within existing Alquist-Priolo Earthquake Fault Zones are within yellow-shaded boundaries; other faults are indicated in black. Fault strands of the Newport-Inglewood Fault Zone are not a part of this evaluation. Source: USGS Quaternary Fault and Fold Database of the United States. (http://earthquake.usgs.gov/hazards/qfaults/)

GEOLOGIC SETTING AND PREVIOUSLY PUBLISHED WORK

The Hollywood Fault is located along the southern boundary of the Santa Monica Mountains, where Cretaceous granitic rocks; mainly quartz diorite, and Feliz biotite granodiorite (as reported in Lamar, 1970), are unconformably overlain by folded and faulted early to middle Miocene Topanga group marine siltstones, sandstones, and basaltic volcanic rocks, and late Miocene Puente Formation marine sandstones, siltstones and shales. Alluvial deposits flanking the mountain front consist of Pleistocene and Holocene alluvial fan deposits, colluvial sediments, and local slope wash.

The Hollywood Fault also defines the northern edge of the Hollywood basin, an asymmetric basin structure that is bound on the south by the North Salt Lake Fault (Figure 1a). Gravity data indicate the basin is deeper along the northern edge, next to the Hollywood Fault (Hildenbrand *et al.*, 2001). In the Los Angeles River floodplain (Figure 1), the Hollywood Fault is

defined by a steep gravity gradient (Chapman and Chase, 1979), and a steep drop in groundwater levels as the fault trends eastward toward the Raymond Fault (State Water Rights Board, 1962).

The Hollywood Fault was previously mapped by many workers including Hoots (1930); Lamar (1970); Weber *et al.* (1980); and Dibblee (1991), where they generally placed the fault at the steep break in slope along the southern edge of the Santa Monica Mountains. More recent mapping by Dolan *et al.* (1997) provided a more detailed view of the fault that takes into account geomorphic indicators as well as site-specific data (discussed later in this report).

Mapping by Hill *et al.* (1979) similarly reported the Hollywood Fault trace located at the base of the Santa Monica Mountains, however, they also mapped a southern trace, which they referred to as the Santa Monica Fault. This southern trace delineates the south margin of the Hollywood basin, defined by a zone of differential subsidence (shown on Plate 1). The identification of this zone is supported by their analysis of oil well data, groundwater data, and review of precise leveling surveys. A similar assessment of the structural boundary of the Hollywood Basin was made by Hildenbrand *et al.* (2001) based on gravity data, although they identified the southern bounding structure as the North Salt Lake Fault (Figure 1a).

At the eastern edge of the Santa Monica Mountains, the concealed trace of the Hollywood Fault was previously mapped in various configurations, generally extending east to northeast into the Atwater area. Originally believed to be a reverse fault, more recent research (e.g. Dolan *et al*.: 1997, 2000; Law/Crandall, 2001; William Lettis and Associates, 2004) suggests a dominant strike-slip component. Previous mapping is shown on Plate 1.

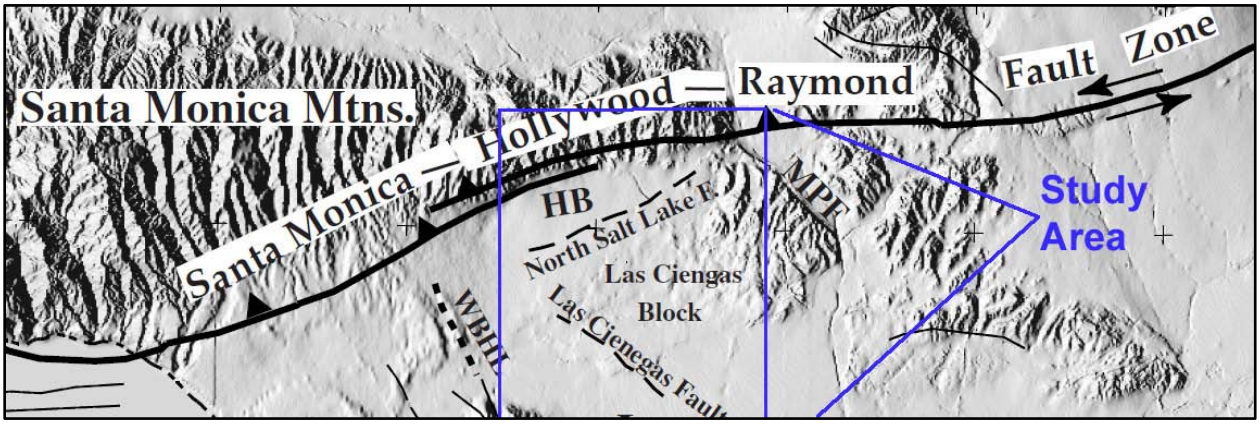

Figure 1a - location of Hollywood Basin (**HB**) with respect to the Hollywood Fault and the North Salt Lake Fault. (clipped/modified from Hildenbrand *et al.* (2001)

SEISMICITY

Regional seismicity records from Hauksson *et al.*, (2012), indicate there have not been any significant earthquake events within the past 30 years that might be confidently associated with the Hollywood Fault (Figure 2). In the Los Angeles region, several historical earthquakes have generated strong shaking in the vicinity of the Hollywood Fault, including: the 1971 M6.6 San Fernando, 1987 M5.9 Whittier Narrows, 1988 M5.0 Pasadena, 1991 M5.8 Sierra Madre, and the 1994 M6.7 Northridge event. The 1988 Pasadena earthquake occurred on the Raymond Fault. Seismic records from the 1988 event provided additional confirmation of left-lateral displacement along the Raymond Fault (Jones *et al.*, 1990).

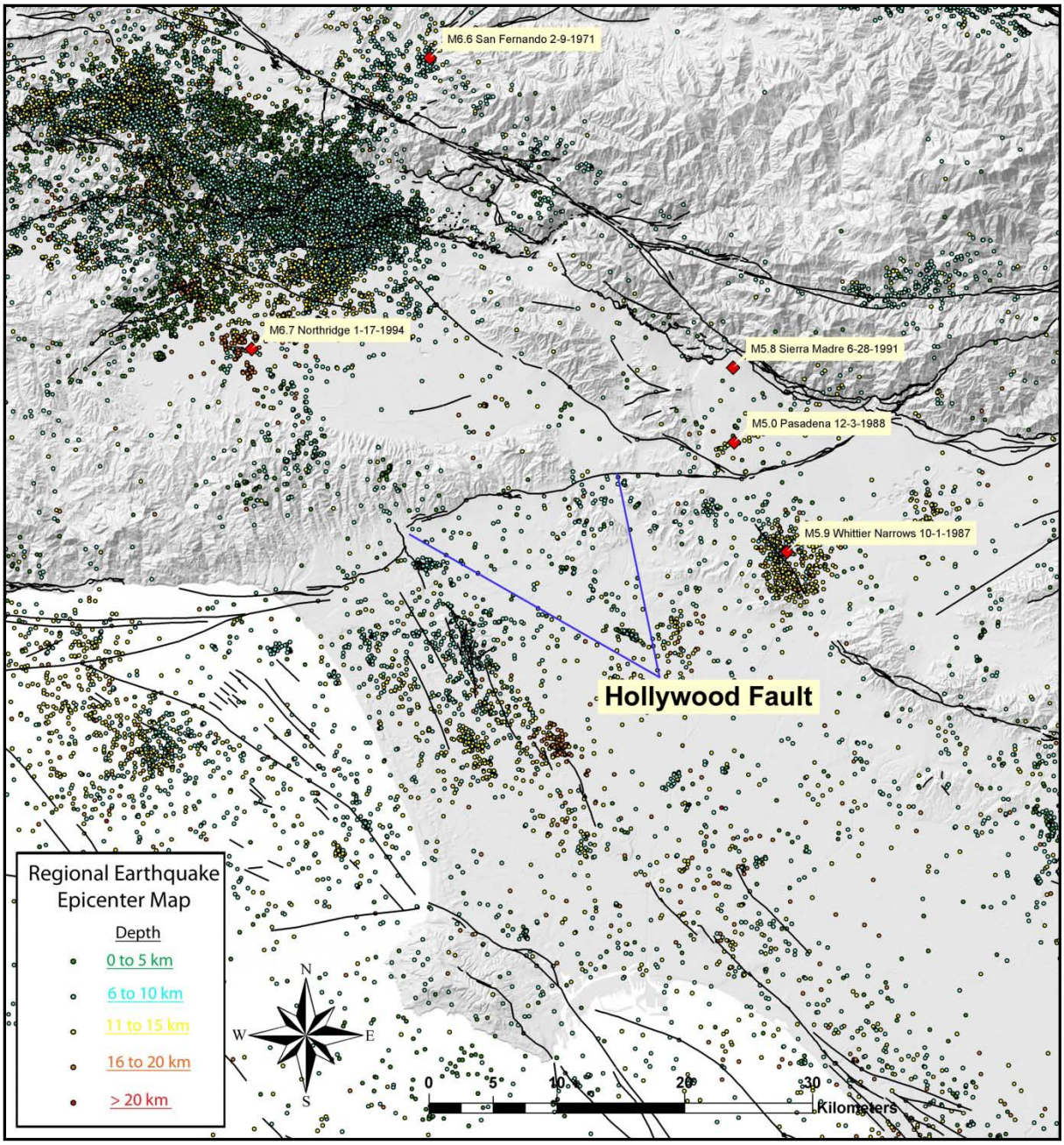

Figure 2 - Regional seismicity from 1981 to June 2011 (Hauksson et al, 2012), including significant faults within the greater Los Angeles basin area. Faults (in black) are from the U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database. (http://earthquake.usgs.gov/hazards/qfaults/)

SUMMARY OF AVAILABLE DATA

PALEOSEISMIC STUDIES AND CONSULTING REPORTS

(for referenced localities, see Plate 1 and related figures)

Critical studies that bear on the location and recency of faulting along the Hollywood Fault have come from three general areas: (1) geologic and geotechnical studies within the City of West Hollywood; (2) research, geologic, geotechnical and infrastructure studies in downtown Hollywood (Curson Avenue to Highway 101); and (3) groundwater and infrastructure studies in the Los Angeles River area. There has been very little site-specific data generated between Highway 101 and the Los Angeles River.

West Hollywood

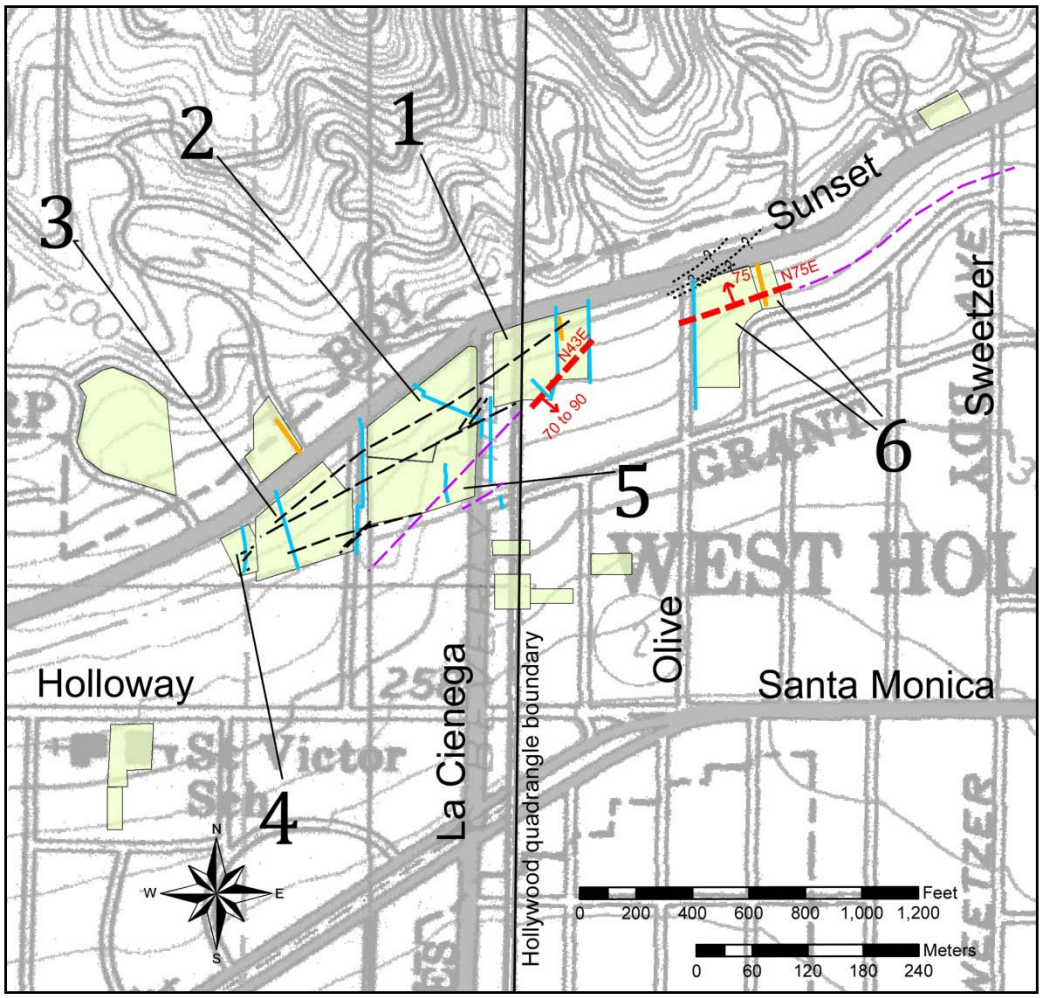

Figure 3- Study site boundaries (light green boxes) where fault studies have provided evidence of faulting (localities 1 through 6, discussed in text; these and other localities are also shown on Plate 1). Un-numbered sites found no evidence of faulting. Faults with evidence of Holocene displacement indicated in red; purple faults are potentially active; black faults are pre-Holocene. Short gold lines are trenches, and blue lines are boring transects. Note: not all exploratory boring transects are shown at this scale.

The City of West Hollywood Fault Precaution Zone Map, and Geologic and Seismic Hazard Technical Background Report, prepared by KFM Geoscience, Inc. (2010) is a crucial part of the City of West Hollywood General Plan. Included in the KFM report is a summary of Fault Rupture Hazard Studies from 29 sites that are on file with the City, collected from 1997 to 2013. Of these reports, 8 sites yielded data that active faulting exists within those sites or otherwise helped constrain the fault location near the western boundary of the Hollywood Quadrangle. Of these 8 sites, several studies were performed adjacent or in close proximity to one another; these are shown on Figure 3.

An investigation by Harza (1998, Figure 3, locality 1) was one of the earliest studies in this area that found two zones of faulting: a northern and a southern fault zone. Paleoseismic studies from borings and trenching at the site indicate these north-dipping faults of the northern fault zone do not offset an argillic soil horizon estimated to be over 120,000 years old based on degree of soil profile development. This northern fault zone includes several strands, which they report strike from N50°E to N70°E, dipping from 50° to 60° NW. Striae and slickensides measured in bucket auger borings provided evidence for north-side-down normal sense of displacement for these northern strands.

The southern fault zone (herein discussed as Fault 1) was reported as a northeast striking, southeast dipping fault that vertically offset Quaternary deposits at least 150 feet and acts as a groundwater barrier. Harza (1998) recommended a building setback zone for Fault 1 as a precautionary method until further studies could be made. Recent work, including observations from down-hole logged bucket auger borings and ^{14}C dating of the soils by WLA (2004) have determined this southern fault zone (Fault 1) is active. Figure 4 illustrates the upward terminations of three strands (D, E, and F) of Fault 1. Fault 1 is oriented N50° to 55°E, dipping 53° to 56° SE as reported from bucket auger down-hole observations. Charcoal samples from faulted soil horizons revealed dates about 9,910 to 10,190 ybp, and 15,250 to 16,650 ybp. WLA (2004) also reported an unfaulted soil horizon above fault strand D to be 8,590 to 8,990 ybp, suggesting a minimum age of faulting at fault strand D. They suggested that, because the fault tips of strands D, E, and F all occur at about the same stratigraphic position, these three closely spaced splays ruptured in the most recent earthquake. Based on the detrital charcoal samples, they concluded the most recent surface-rupturing earthquake on strands D, E, and F of Fault 1 occurred between ~8,500 and 10,000 years ago.

A report by WLA (1998c) at locality 2 finds that four faults underlie the site. They state that these faults are overlain by multiple unbroken Pleistocene soils and that the southernmost fault has displaced Pleistocene deposits and is overlain by unbroken Holocene deposits. Additional details gathered from exploratory borings provided insight that the northern fault zone is found to offset a marine wave-cut (abrasion) platform at depth. Evidence includes a gently dipping, planar surface of quartz diorite bedrock, overlain by a thin veneer of beach sand, and smooth, rounded, non-quartz diorite cobbles and pebbles. They reported the age of this marine wave-cut platform is constrained by the age of the overlying alluvial sediments, where they estimated this abrasion platform to be between 400,000 to 900,000 years old. Further, they report a significant amount of platform tilting is present between fault-bound blocks. However, measurable evidence of late Quaternary folding or tilting of the overlying sediments was not present at the site.

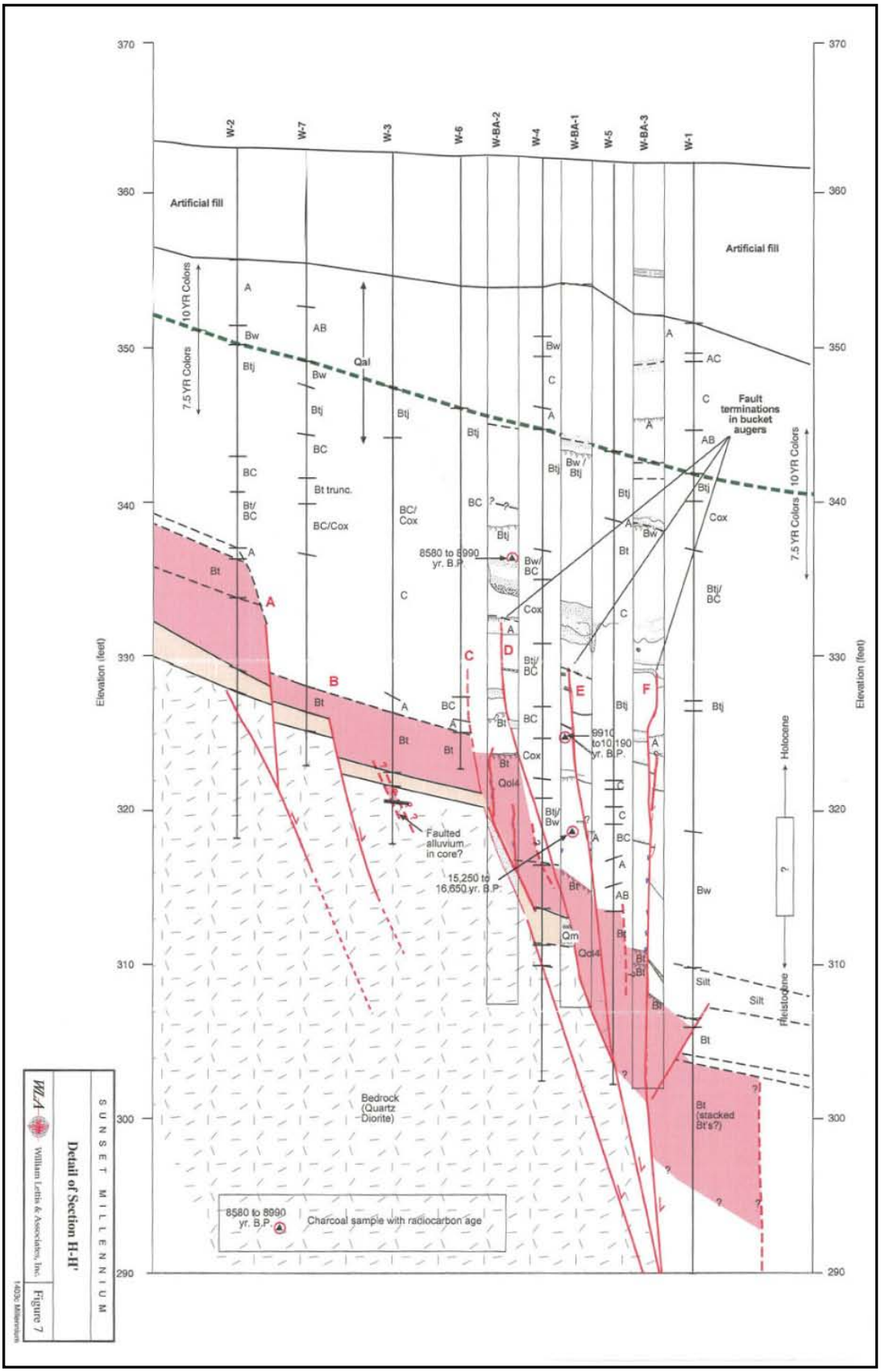

Figure 4 - Upward terminations of fault strands D, E, and F within Fault "1", Locality 1; modified from WLA, 2004.

A study by WLA (1998b), located southwest of Alta Loma Road at Sunset Boulevard (locality 3), mapped four faults across the site that are reported as inactive based on unfaulted late Pleistocene soils that overlie the faults. These faults were reported to be secondary faults and not the main trace of the Hollywood Fault. They report that similar to locality 2, these faults are part of the northern fault zone and are found within the marine wave-cut abrasion platform at depth. They infer the main trace to lie well south of Sunset Boulevard in this location.

An interesting detail about the Hollywood Fault as reported by WLA (1998c) and discussed by T. Rockwell (p.c., 2013), is that the gently sloping marine abrasion surface consists of one and possibly two paleo-marine terraces at depth in this area, with a terrace riser (or sea cliff) at the back of each terrace. Some of the escarpments observed along the base of the Santa Monica Mountains, previously thought to be the location of the Hollywood Fault, are now interpreted as paleo-sea cliffs.

Work completed by WLA (2007b) south of Sunset Boulevard at locality 4 found no active faults are present at the site. They encountered three inactive secondary faults at the site that were described to be part of the inactive northern fault zone, as noted at localities 1, 2 and 3]. They reported these faults are overlain by distinctive, continuous buried Pleistocene soils.

A study by ECI (1999a) at locality 5, found the northern fault zone and marine abrasion platform to be overlain by unbroken Pleistocene age soils in all of their borings, indicating Holocene faulting has not occurred at this location. Fault 1 underlying the site was also judged to be not active, based on apparent continuity of overlying pre-Holocene stratigraphy as interpreted from their borings. However, the correlated contacts are not clearly continuous and some Holocene offset cannot be precluded. Based on the relatively small offset of the quartz diorite basement terrain (relative to other sites) and the generally normal separation on the on-site faults, ECI (1999a) concluded that the principal trace of the Hollywood Fault must lie to the south of their site.

Studies located on the southeast corner of Sunset Boulevard and Olive Avenue at Locality 6 (Applied Earth Sciences, 1997; Johnson, 1999; Law/Crandall, 2001) found that a northern and southern set of faults crossed the site. The northern fault zone, as in studies to the west, was reported as not active based on unfaulted Pleistocene soils at the site. Additionally, these studies encountered the marine abrasion platform and associated cobble and boulder size clasts of well-rounded quartz diorite and other exotic clasts, with well-sorted, clean, fine- to medium-grained sand. They interpreted the northern fault zone as a minor, secondary fault zone that accommodated local extension in a left step of the Hollywood Fault zone. The active southern fault zone is steeply north-dipping, and extends into alluvial units of Holocene age up to within 15 feet of the ground surface (Figure 5). Law/Crandall (2001) determined this strand is active based on radiocarbon dating of detrital charcoal samples, indicating the faulted soils were approximately 9,000 to 10,000 years old. Both Law/Crandall (2001) and Applied Earth Sciences (1997) recommended structural setbacks from the fault. This southern strand vertically offsets bedrock by at least 150 feet of south-side down separation, and also forms a steep groundwater step. Unfaulted Pleistocene sediments were documented south of the southern fault zone.

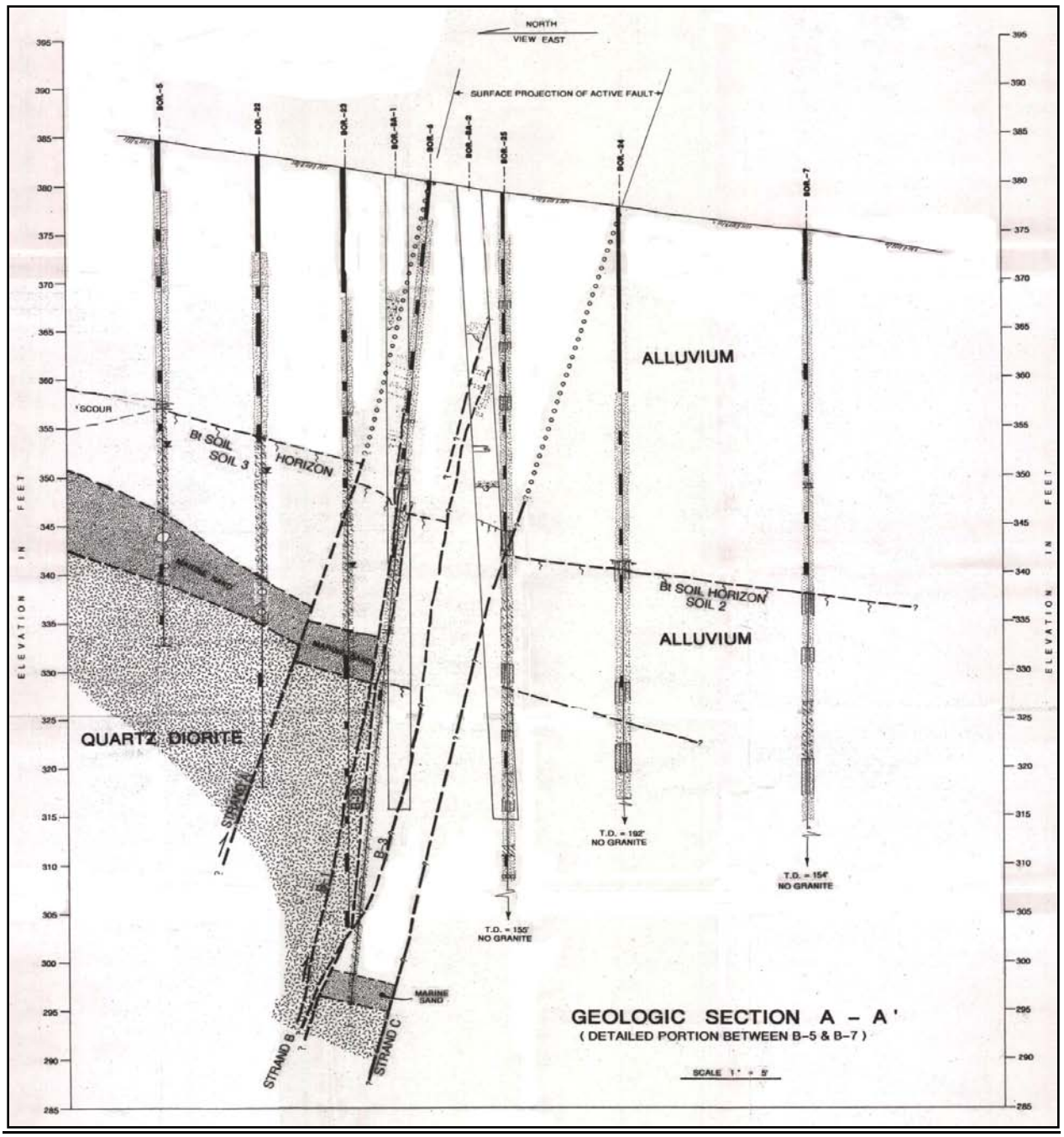

Figure 5 - Cross section showing south-side down offset on the southern fault zone at the southeast corner of Sunset Blvd. and Olive Drive, West Hollywood (site 6). Thickness of marine sand decreases to the south. Modified from Law/Crandall, 2001.

A study by Schell (1998) was performed for a site located south of Sunset Boulevard along Harper Avenue (locality 7, Plate 1). Boreholes were drilled for the site, and were extended north across Sunset Boulevard and a steep escarpment. Borings revealed a steep groundwater step, and an offset of quartz diorite bedrock in excess of 150 feet near Sunset Boulevard. Based on this data and geomorphic expression of the fault scarp, Schell interpreted that the main trace of the Hollywood Fault lies north of his site, along the south edge of Sunset Boulevard. He concluded that there were no significant faults to the south based on apparent

continuity of several sediment packages of increasing relative age with depth, with the lower units identified as pre-Holocene.

A study by ECI (2001a) was completed for a proposed development located south of Sunset Boulevard at Havenhurst Drive at locality 8 (shown on Plate 1). This site is adjacent to locality 7 and ECI included data from that work in their analysis (Schell, 1998) in addition to their own borings extending offsite toward Sunset Boulevard. After analysis of groundwater levels, topographic data, soil development characteristics, and stratigraphic correlation across the southern portion of ECI's site, they concluded the fault zone immediately south of Sunset Boulevard may be wider than originally mapped by Schell, where they mapped a second north-dipping active fault strand to the south of Schell's trace. Continuity of pre-Holocene stratigraphy beneath the site, based on borings, was used to preclude any additional young faulting. Ages of stratigraphic units were based on one radiocarbon date and relative soil development characteristics.

Downtown Hollywood

Much of the synthesis and reported details in the downtown Hollywood area go back to Dolan *et al.* (1997). Work by Dolan *et al.* (1997) included geomorphic analysis of tectonic landforms along the fault trace using historic topographic maps (1920s vintage) and field reconnaissance. They also presented and analyzed data from several geotechnical studies. They interpreted at least three major fault splays: the Franklin Avenue strand, the Yucca Street strand, and a northern strand as shown in Figure 6 (see also Plate 1). Details of individual parts of their study are discussed below.

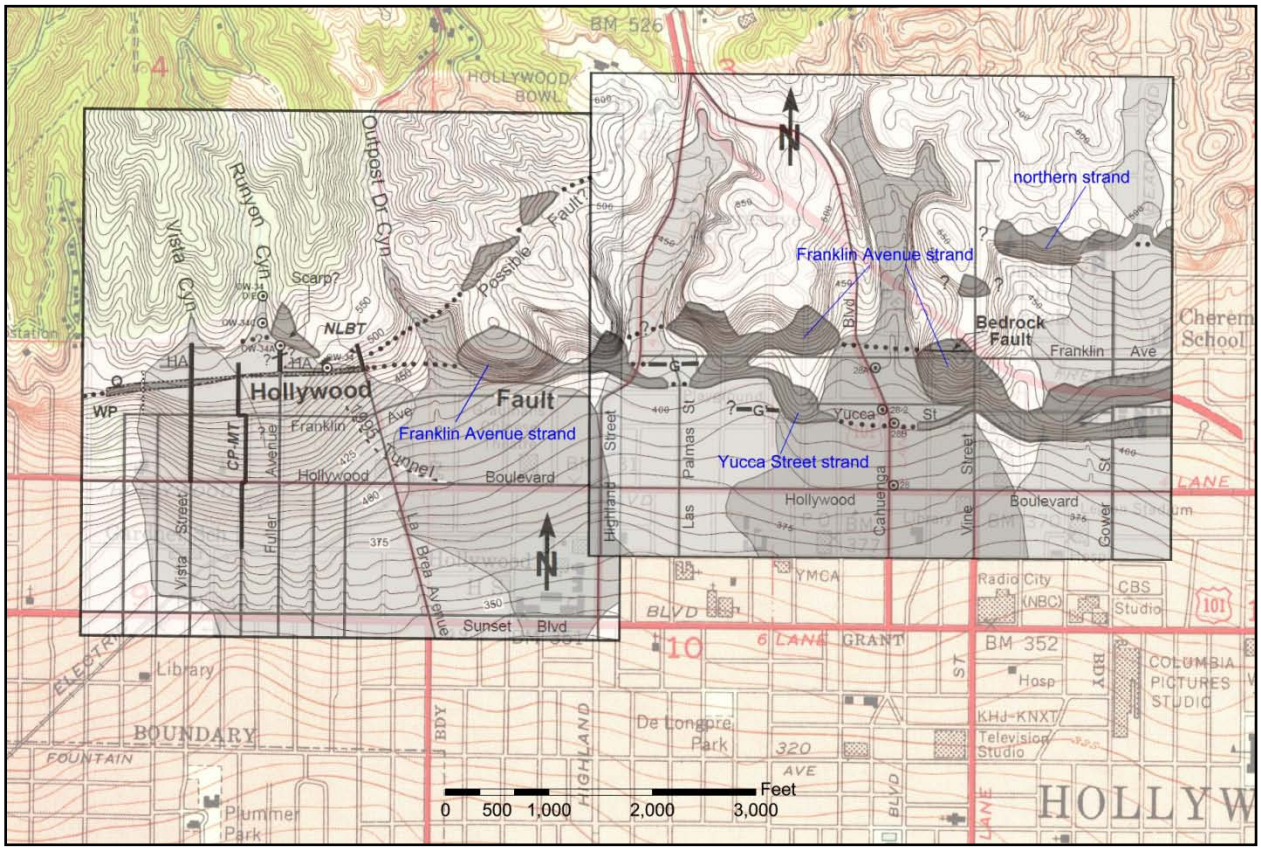

Figure 6 – Detailed mapping and investigations by Dolan *et al.* (1997, their figures 4 and 6), shown overlying a 1953 topographic map base of the Hollywood area. "G" indicates groundwater barrier. Dark shaded areas indicate fault scarps. This historic topographic map is composited from 1923-1925 plane table surveys, with a 5-foot contour interval up to the 500 foot elevation contour and is similar to the topographic data set used by Dolan *et al.* (1997).

Hollywood - Vicinity of La Brea Ave

Earlier work by Crook et al. (1983) and Crook and Proctor (1992) included trenching at a site within the Hollywood area at Wattles Garden Park at Franklin and Sierra Bonita Avenues (locality 9, Plate 1). They found several thin shallowly north-dipping gouge layers and a thicker (60+ cm) gouge mass that they assume to be part of the Hollywood Fault Zone. There were no datable materials. A second trench, further down the fan surface found no faulting but was likely too shallow to be conclusive.

At locality 10, detailed studies by Dolan *et al* (1997), and Earth Technology Corporation (1993) took place at three locations in conjunction with the 1993 MetroRail Boreholes/subway tunnel investigations along the Hollywood Fault Zone: Camino Palmero-Martel Avenue Transect; North La Brea Avenue Transect; and at Vista Street, as shown on Figure 7. Also included in this study were data from Los Angeles County storm drain trenches (Vista Street and Fuller Avenue), and the La Cienega and San Fernando Valley Sewer Relief Tunnel project (1953, as reported by Earth Technology Corp, 1993) west of Vista Street.

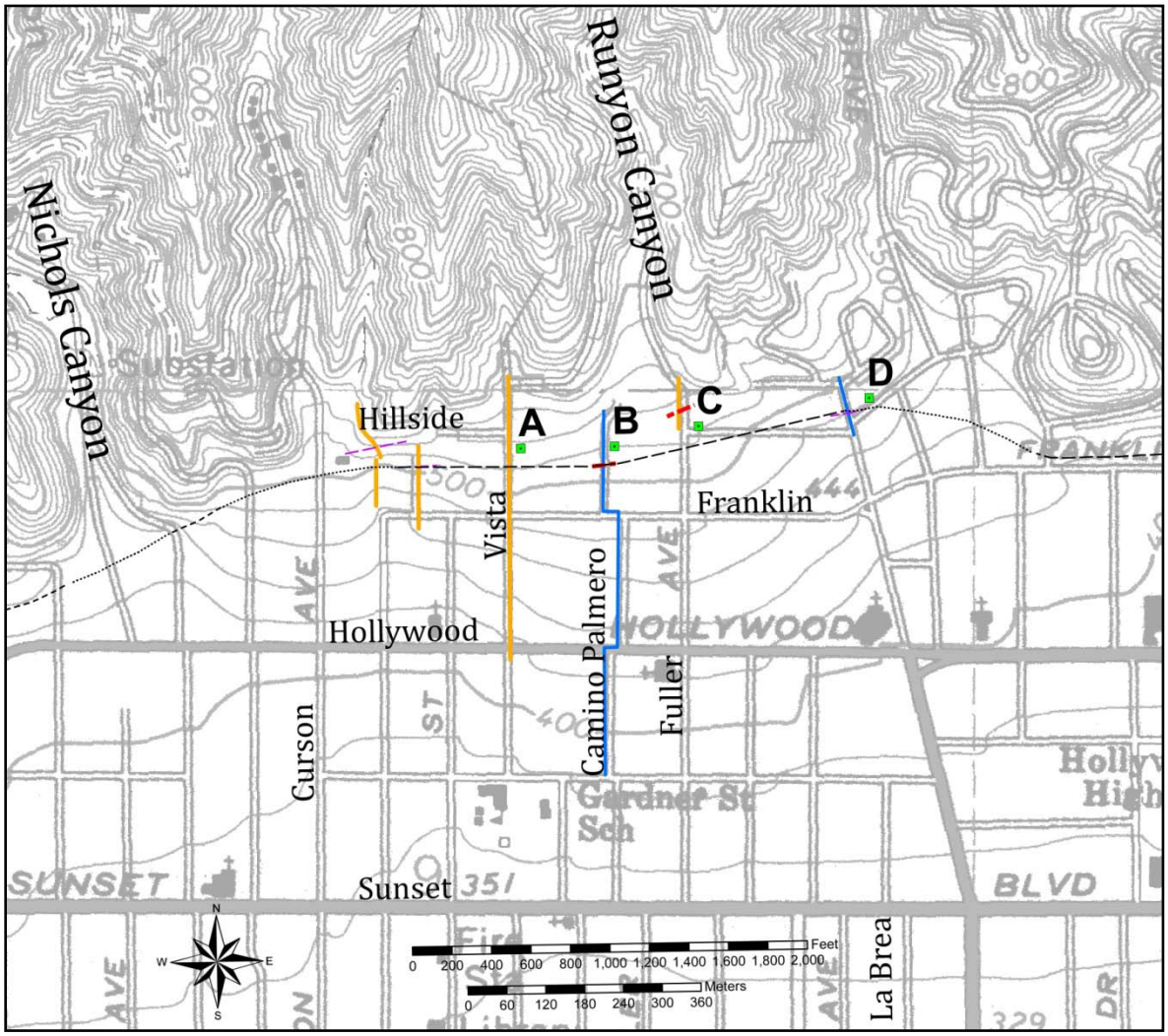

Figure 7 - North Hollywood area, locality 10, showing location of shallow trench data (gold lines) and borehole transects (blue lines) completed for the Metro Red Line study (Earth Technology Corporation (1993), sewer relief trenches and storm drain tunnel. Green squares indicate study localities: A - Vista Street storm drain transect; B - Camino Palmero-Martel Avenue Metro RedLine transect; C- Fuller Avenue storm drain trench; D - La Brea Avenue Metro RedLine transect. Dashed red line segments along transects indicate the active fault trace or projection based on supporting data from adjacent sites. Purple dashed lines represent fault strands of indeterminate age. Black lines are faults recommended herein for zoning.

Along the Vista Street storm drain transect (Figure 7, site A), the Hollywood Fault was not encountered in the ~1400 foot long trench, however (Dolan *et al.*, 1997) reported the depth of this trench was likely insufficient to observe the fault trace. The La Cienega and San Fernando Valley Sewer Relief Tunnel project (1953, as reported in Earth Technology Company, 1993) along Sierra Bonita west of site A, encountered faulted granite with gouge and breccia in test borings.

Along the Camino Palmero-Martel Avenue Metro RedLine transect (Figure 7, site B), evidence for faulting included groundwater barriers and quartz diorite bedrock faulted over alluvium, with average dips of ~77° to the north. Dolan *et al.* (1997) and Earth Technology Corporation (1993) reported up to four fault strands with apparent north side-up displacement of the granitic bedrock at depth (Figure 8), however the southern-most strand appears to be the youngest based on offset younger soils. Groundwater elevation changes were reported on the order of 40 or 50 feet across the fault as shown in Figure 8 (inset). This site was further explored (Dolan *et al.,* 2000) with successive bucket auger borings that revealed additional evidence that one, and possibly two surface ruptures had occurred within the past 20,000 years, the most recent event occurring about 7,000 to 9,500 years ago. Additionally, based on the downhole observations made within the boreholes for this study, Dolan *et al.* (2000) reported that all of the fault strands encountered were near vertical with a dip about 85° northward, and that the most recent surface rupture resulted in north-side down separation. This sense of near-surface separation contrasts with the reverse sense at depth, supporting the contention of Dolan *et al.* (1997) that there is a strong component of strike-slip displacement (presumed left-lateral).

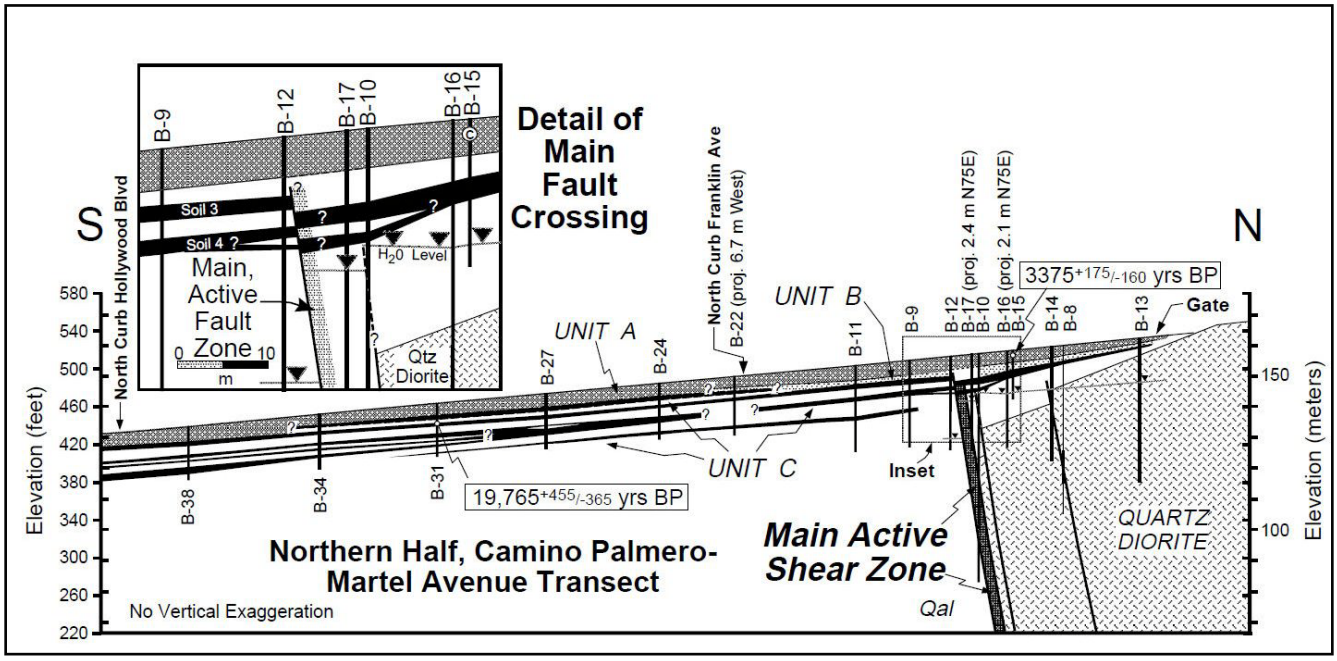

Figure 8 - Cross section of continuously cored boreholes along the northern half of Camino Palmero transect. Note down to the north soil profiles, particularly between B-10 and B-12, across the active fault strand. Depth to groundwater was encountered at about 55 feet on the north, and about 89 feet bgs to the south. Figure modified from Dolan *et al.* (1997).

Storm drain trench excavations by Los Angeles County Department of Public Works along Fuller Avenue (Figure 7, site C), revealed a secondary strand of the Hollywood Fault, oriented N59°E, 74°NW with north-side-up vertical separation (reported by Dolan *et al.*, 1997). This fault displaced the base of a possibly Holocene clayey sand.

At the La Brea Avenue Transect (Figure 7, site D) evidence for faulting includes quartz diorite apparently thrust over Quaternary alluvium, similar to the Camino Palmero site (Dolan *et al.*, 1997; Earth Technology Corporation, 1993). Shallow groundwater was encountered north of the fault at depths between about 10 feet to 43 feet, whereas south of the fault groundwater was not encountered within the upper 200 feet of borings. They reported the fault dip steepens with depth, ranging from 25° to 60° to the north.

Hollywood - Vicinity of Highland Avenue

A study by MTC Engineering (2012c), located on the southwest corner of Bonita Terrace and Orchid Avenue (locality 11, Plate 1) found no clear evidence of faulting, although a zone of steepening of the bedrock at depth between two bucket auger borings was noted in our review. They encountered basaltic volcanic bedrock, and they reported clean sandy gravel in each of the bucket auger borings was in sharp contact with the bedrock. Rounded cobbles up to about 10-inch diameter in a fine- to coarse-grained sand matrix, and clean sand layers were encountered directly overlying the bedrock. Our review of this data suggests the marine abrasion platform previously discussed for sites in West Hollywood (localities 1 through 6) may exist in this part of Hollywood.

In studies by Leighton Consulting (2011) and GeoPentech (2013a; 2013b) at 1805 Highland Avenue, evidence was reported for at least three faults at this site (locality 12). Groundwater steps and discontinuous stratigraphy across the site suggest several fault strands may exist within a broad zone of faulting at this site. Three fault strands appear to displace an earliest Holocene/late Pleistocene horizon (approximately 11-14 thousand years old) and at least one of the strands may displace late Holocene sediments (Geopentech, 2013b). Studies are on-going to further characterize the location and orientation of the fault strands, recency of activity, and how these features relate to faults mapped at the site directly to the east.

Studies performed at 1840 Highland Avenue (locality 13) by LAW/Crandall (2000) and GeoPentech (2001a, b; 2013c) found evidence of several well-constrained fault strands crossing the northern portion of the site. The faults in the northern and central portion of the site were judged to be active based on three distinct groundwater steps and offsets in stratigraphic units (including Holocene deposits) observed in continuous core borings and CPT transects. They reported faulting consisted of steeply north-dipping faults (about 80^0) for these northern strands, and have established a building setback zone. In the southern portion of the site, they reported continuous Holocene and Pleistocene soils and stratigraphic units underlie this portion of the site, precluding any additional young faulting. Just to the east of this site, at Las Palmas St., unpublished studies cited by Crook and Proctor (1992) found a 30-foot difference in groundwater levels between two borings on opposite sides of this fault zone.

A study for the Los Angeles MetroRail project (Converse *et al;* 1981, 1983) found evidence that the Hollywood Fault is located south of Yucca Street at Cahuenga Boulevard (locality 14). Their boring #28B, also described by Crook and Proctor (1992), encountered alluvium to a depth of 120 feet, followed by 10 feet of brecciated sandstone, alluvium and siltstone, which in turn overlies alluvium to the total depth at 205 feet. The location for this fault corresponds well with differences in groundwater reported at locality 15 to the east, and a groundwater barrier just south of Yucca Street to the west (F. Denison, 1991, p.c. *in* Dolan *et al*., 1997).

Hollywood - Vicinity of Hollywood Boulevard and Vine Street

Geotechnical studies were done by Langan and Associates (2012a; 2012b) for the proposed Millennium Hollywood development located south of Yucca Street, between Ivar Avenue and Argyle Avenue (locality 15). Although faulting was not specifically identified in these reports, our review of the subsurface data from several borings indicated groundwater depth differences across the site as well as significant differences in sub-surface materials that support the presence of a fault beneath the site.

Borings from an adjacent project by Group Delta (2006) located at the southwest corner of Argyle Avenue and Yucca Street (locality 16), revealed groundwater elevation differences across the site. Review of this data when compared to borings from the adjacent sites, also suggest a significant difference in groundwater elevation between this project and the Hollywood Millennium site to the south (locality 15).

Just east of Argyle Avenue and north of Hollywood Boulevard (locality 17) geotechnical studies were done for the Blvd6200 project (Geotechnologies, Inc., 2006 and 2013). Although faulting was not specifically identified in these reports, a strong break in slope existed across the northern portion of this parcel that has been interpreted as a fault scarp by previous researchers as well as in our review and field reconnaissance. Additionally, geotechnical borings drilled for the project encountered higher groundwater levels in the northern portion of the site, and deeper groundwater levels in the southern portion of the site with recommendations made for a dewatering system. A review of the boring logs and cross sectional analysis reveals the stratigraphy does not appear very continuous in this area, and the drop in groundwater level appears to correlate well with the break in slope at the surface. These two pieces of evidence suggest active faulting exists along a west-northwest trend at this location.

West Los Feliz area

Only one geotechnical study has come to our attention in this area which might bear on the presence of active faulting. A study was conducted by Pacific Soils Engineering (1961), for tract development located north of Los Feliz Boulevard, between Fern Dell Drive and Winona Boulevard at locality 18. They identified a northeast-trending bedrock fault at the northern end of the property, and although the fault appeared to juxtapose granitic basement rock against alluvium, the fault was judged to be not active. A water seep was noted after grading (Pacific Soils Engineering, 1962) that was not on the identified fault, but it did lie along an interpreted geomorphic scarp within the alluvial fan deposits, as noted in our review of vintage air photos (discussed later in this Fault Evaluation Report). Previous mapping by Neuerburg (1953) in this area indicates two roughly parallel fault traces that were mapped in the granitic bedrock northeast of the site and likely project toward this development. The lack of any geomorphic expression in crystalline rock, as well as their location and orientation, suggest that these two fault traces are not active.

Los Angeles River/Atwater Area

Along the west side of Riverside Drive near Los Feliz Boulevard (locality 19), two fault/geotechnical studies were completed by AMEC (2012, 2013) for the City of Los Angeles Northeast Interceptor Sewer (NEIS) project. The 2013 study included data from two seismic reflection surveys, performed by Advanced Geoscience, Inc. (2013). These seismic surveys

identified at least 6 fault traces which dip steeply (north and south) and are interpreted to include the north-dipping main trace of the Hollywood Fault Zone. Advanced Geoscience, Inc. (2013) reports that the main fault and several secondary faults appear to be trending to the east, based on two sets of seismic data. Evidence for faulting found in borings along the transect line includes: thickening of young alluvium across several borings within the fault zone, a thickening and offset of older alluvium deep within closely-spaced borings, and deeper offsets within sedimentary bedrock (Puente Formation) and quartz diorite. Artesian groundwater conditions are also reported within a narrow zone as noted in a cross-section prepared by the City of Los Angeles, included here as Figure 9.

In the Atwater area, well data as reported by State Water Rights Board (1962) indicate a steep drop in groundwater levels near the mapped fault trace. They reported shallow Puente Formation bedrock was encountered in borings drilled on the north side of a concealed fault trace, and also noted rising water levels in the area of Los Feliz Boulevard. Fault displacements were postulated to have affected the base of the valley fill within the Los Angeles River narrows area, notably where a small bedrock knob is present north of the fault and has “created a constriction in the water-bearing materials” and a depression in the groundwater level immediately to the south. Further, they reported fairly thick packages of clay-rich sediments predominate to the north, and gravelly sands to the south, generally near San Fernando Road and the northern projection of Silver Lake Boulevard.

Williams and Wilder (1971) reported a steep south-facing groundwater gradient exists about half way between the Forest Lawn wells (near Glendale Blvd and San Fernando Road), and the Pollock Field (near Garden Ave. and Fletcher Dr.). In their cross section, they indicated a gray organic clay layer is vertically offset by a steeply south-dipping fault, with down to the south displacement of the clay. Converse, Davis and Associates (1970) reported on the “top of clay” layers within groundwater wells in the Atwater area. Review of the well logs indicated a groundwater level differential and top of clay differential in the area near Fletcher Dr. and San Fernando Road. Our own review of several of the well logs from the Converse, Davis and Associates report, reveals thick clay zones at depth that appear to be discontinuous in the vicinity of Silver Lake Boulevard and La Clede Avenue. This location is similar to the groundwater differential reported by Williams and Wilder (1971).

Gravity data from Chapman and Chase (1979) reveals a steep gravity gradient along the fault that coincides at depth with the eastern projection of the Hollywood Fault Zone.

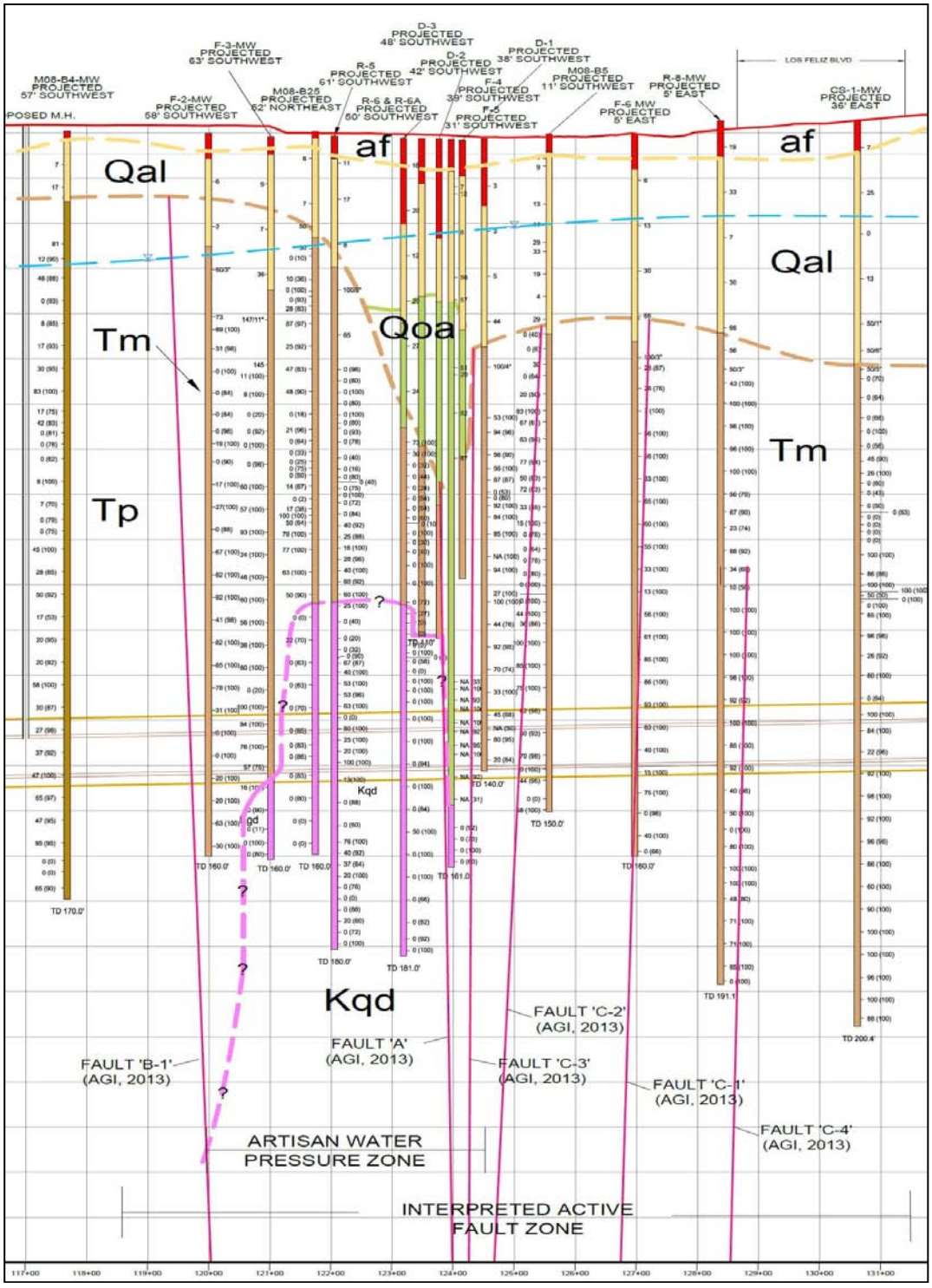

Figure 9 – Cross section with Fault 'A' interpreted as the main trace within the active fault zone. Note differential thickness of recent alluvium, and depth of older alluvium between Fault 'A', and Fault 'C-3'. Kqd = Cretaceous quartz diorite; Tp = Puente Formation; Tm = Modelo Formation; Qoa = Quaternary older alluvium; Qal = Quaternary alluvium; af = artificial fill.
Cross section modified from City of Los Angeles Geotechnical Engineering Group (2013). Grids are 10' in height and 100' in width.

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AERIAL PHOTO, LIDAR, MAP INTERPRETATION, FIELD OBSERVATIONS and GEOMORPHIC ANALYSIS

(for referenced localities, see Plate 2)

The following geomorphic analysis is based on review of vintage aerial photographs, topographic maps, LiDAR data and field observations. Field observations were performed during November and December 2013 for approximately 3 days.

DATA SOURCES

Vertical aerial photographs – 1927-1928

Vertical aerial photographs from two flights (1927 and 1928) by Fairchild Aerial Surveys were studied in stereo pairs to identify and interpret landforms along the fault traces. Development of the landscape (grading for streets, houses and other structures) even at this early date make interpretation a challenge. However, many features of the landscape are still discernible.

Historic oblique photographs – 1921-1938

Vintage oblique aerial photographs provided a unique view of the historic landscape, providing illuminating images of much of the landscape prior to full development. These images provided an independent check on the features interpreted from vertical aerial photos and topographic maps. The vintage photos were taken by Spence Aerial Surveys and Fairchild Aerial Surveys and are archived in the Geography Department at the University of California, Los Angeles.

Historic maps – 1926-1928

A remarkable series of topographic maps was prepared in the 1920s for the County of Los Angeles at a scale of 1:24,000. These were published in the atypical format of a 6-minute by 6-minute quadrangle as opposed to the more standard 7.5-minute map format. These maps are notable for two reasons. First, they capture the landscape at a time when much of the local land development had either not occurred or was of a less disruptive nature. Secondly, these maps have 5-foot contours and were drawn by topographers with an excellent sense of landform. As a result, these maps provide a very illuminating view of the landscape and reveal numerous features that are suggestive of tectonic influences. We analyzed the topography as depicted on the Hollywood and Burbank 6-minute quadrangles from 1926 and the Glendale 6-minute quadrangle from 1928 (all at an original scale of 1:24,000).

We prepared an interpretive map from these topographic bases, delineating locally incised drainages and a complex set of nested alluvial fans being shed from the Santa Monica Mountains (Figures 11, 12, 13, 14 & 17). In particular we have made note of abrupt transitions from erosion (the channels) to deposition (the fans) and, where these are aligned with other corroborative or suggestive features, have interpreted fault movement to explain this change in sedimentary regime.

LiDAR

A digital elevation model derived from a LiDAR survey of Los Angeles County (Los Angeles Regional Imagery Acquisition Consortium, 2006) was useful for verifying some of the geomorphic features identified from other sources as well as detecting additional features.

DISCUSSION

To aid discussion we have divided the fault zone, as it crosses the Hollywood Quadrangle, into five segments (Figure 10). The westernmost segment (segment 1), from within the city of West Hollywood, trends northeast along the southern edge of the Santa Monica Mountains, primarily as a single trace. Segments 2 and 3 trend more east-west and are expressed in several near-parallel left-stepping fault strands. Segment 4 trends east-northeast, paralleling Los Feliz Blvd., and consists of at least two sub-parallel fault strands. Eastward from the Los Angeles River we describe Segment 5 which appears to consist of a single surface trace until the eastern boundary of the map.

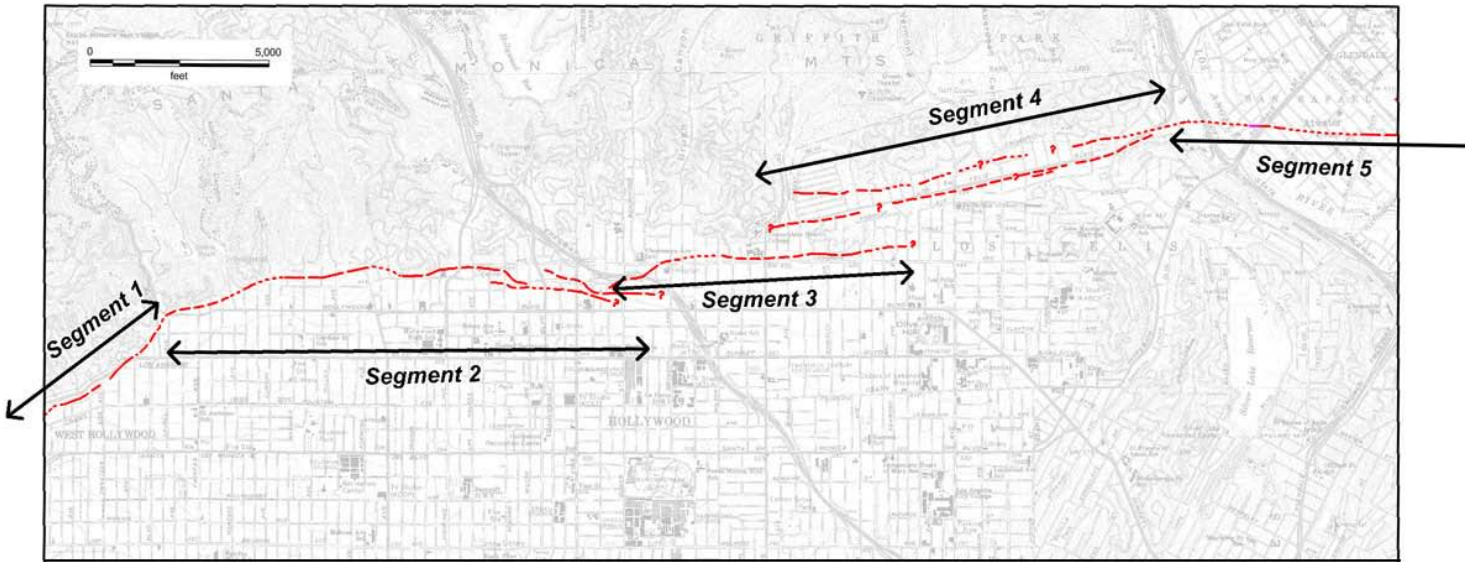

Figure 10 - index to fault segments discussed in the text. Red lines are faults identified for zoning.

Segment 1 extends from the west margin of the map northeasterly to the vicinity of Laurel Canyon (Figure 11). The fault is expressed here by a well-developed scarp along the base of the hills (S1a). Some less-prominent scarps, north of the identified fault, may be related to a paleo-shoreline identified in the area (WLA, 1998c). Several small scarps near the base of the mountain front on Plate 2 (Site A1) are thought to be related to this paleo-shoreline feature. Several subtle slope breaks in the ground surface to the southeast may indicate additional splays, but these are less certain and may just mark the distal extent of fan deposition. A prominent scarp-like feature (S1b) at the edge of the map is crossed, on projection to the west, by fault studies which found no evidence of active faulting along that trend. The young Holocene-age alluvial fan emanating from Laurel Canyon has entirely obscured surface evidence of the fault in that location.

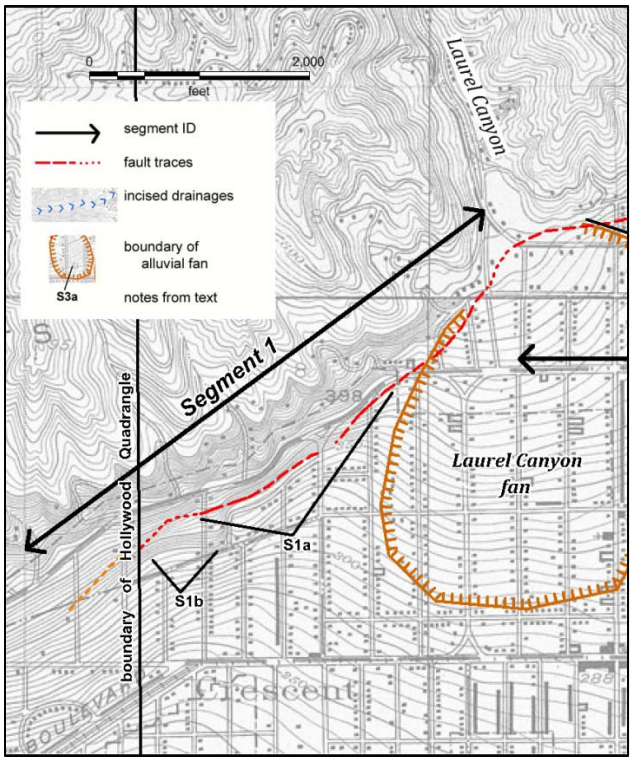

Figure 11 - Geomorphic features along Segment 1. Base map from 1926 Hollywood and Burbank 6' quadrangles.

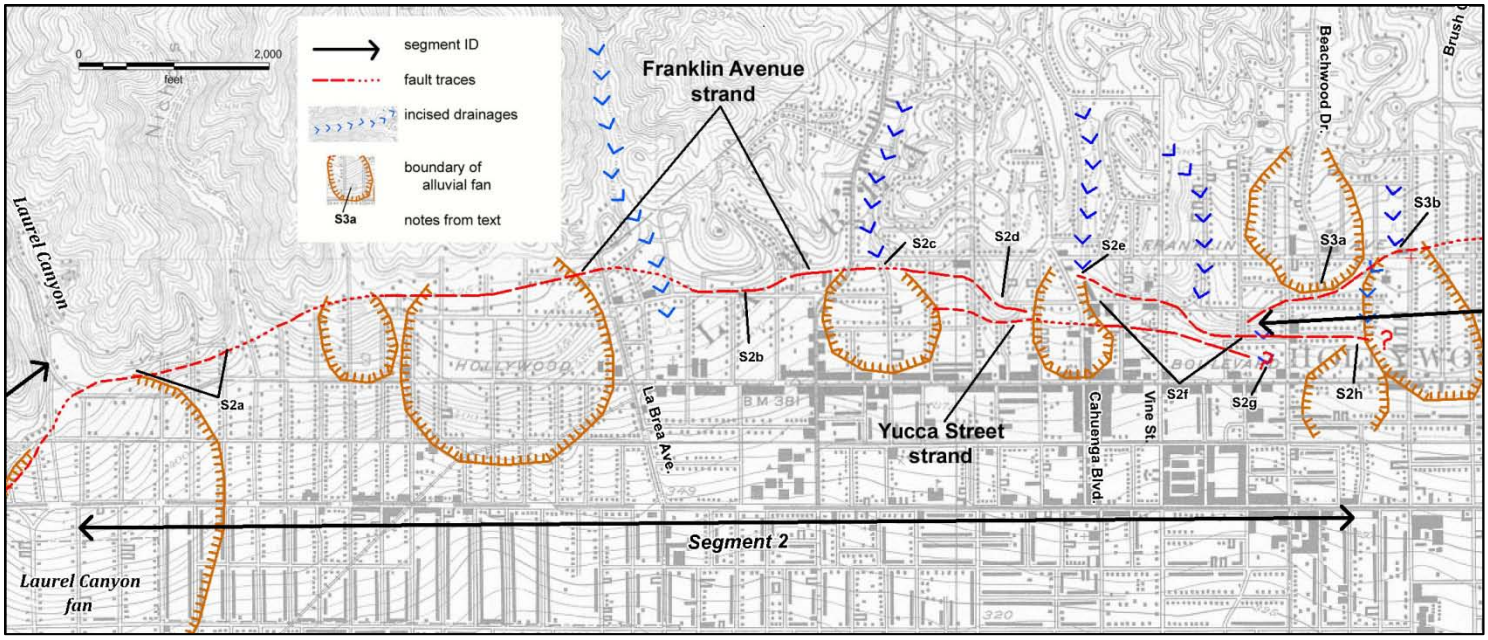

Figure 12 - Geomorphic features along Segment 2. Base map from 1926 Hollywood and Burbank 6' quadrangles.

Segment 2 trends east-west from Laurel Canyon to Beachwood Drive (Figure 12). The western portion is distinguished by a slightly sinuous mountain front with small fans emanating from small to medium-sized canyons. The mouths of these canyons are in rough alignment as far east as La Brea Avenue, suggesting some linear structural control, but the fault may be buried and overlapped by fan deposition so that the fault trace would be somewhat south of the current slope break. Oversteepened and eroded slopes at the south end of several intervening ridges are interpreted to be related to faulting. More subtle breaks in slope gradient to the south are possibly related to the distal edges of the small alluvial fans and cannot be ascribed with any certainty to faulting (Plate 2, site A2). The south end of the first ridge to the east of Laurel Canyon (S2a) appears oversteepened and is likely a fault scarp. Dolan *et al.* (1997) also noted the scarp in this area. A break in slope also veers away from this scarp and across a local fan coming off of the slopes, suggesting young displacement. Subtle tonal lineaments (Plate 2) suggest the fault location to the east across the Nichols Canyon drainage.

East of La Brea Avenue the fault bends or steps southward to create the steep southern front of a prominent knoll (S2b) and several other ridges to the east. Dolan *et al.* (1997) found this Franklin Avenue strand to be the most prominent south-facing scarp in the downtown area. The Yucca Street strand, which exhibits a 5-6 m high scarp, also acts as a groundwater barrier west of the alluvial fan at Cahuenga Blvd.

The drainage from Cahuenga Pass, as it crosses this trend, appears as if it is deflected in a left-lateral sense (S2c) and very shortly changes from an incised channel to a depositional fan, suggesting a change in base level at this point. Another southward step is suggested by the south-trending ridge west of Cahuenga Boulevard (S2d) and then expression is lost across the drainage descending from the Hollywood Reservoir area. However, the channel from that canyon appears to have been incised above the mouth of the canyon (S2e), switching to a depositional mode to the south, which suggests a base level change at a fault at that location. The fault location eastward is indicated by a very steep south margin to the hillslopes (S2f). A distinct change in slope gradient is also visible across several north-south streets in this area in both site reconnaissance and air photo interpretation, including Vine and adjacent streets (Plate

2, site A3). The eastern extension of this fault coincides with the initiation of a small depositional fan indicated in the vintage topographic map (S2h), with an incised drainage visible just to the north in the 1927 and 1928 aerial images. A southern fault splay, indicated to the west from geotechnical studies (adjacent to Vine Street), is supported by the upstream incision of another small drainage near the projected crossing of that fault (S2g).

The Hollywood Bowl Fault is mapped north of Segment 2. Trending northeast, it is discontinuously marked by erosional fault line features, such as topographic saddles and some degraded slope facets (see features identified by Dolan *et al.*, 1997, depicted herein on Plate 2, site A4). These geomorphic features closely follow the mapped fault contact between granitic bedrock to the north and Cretaceous and Tertiary sediments to the south.

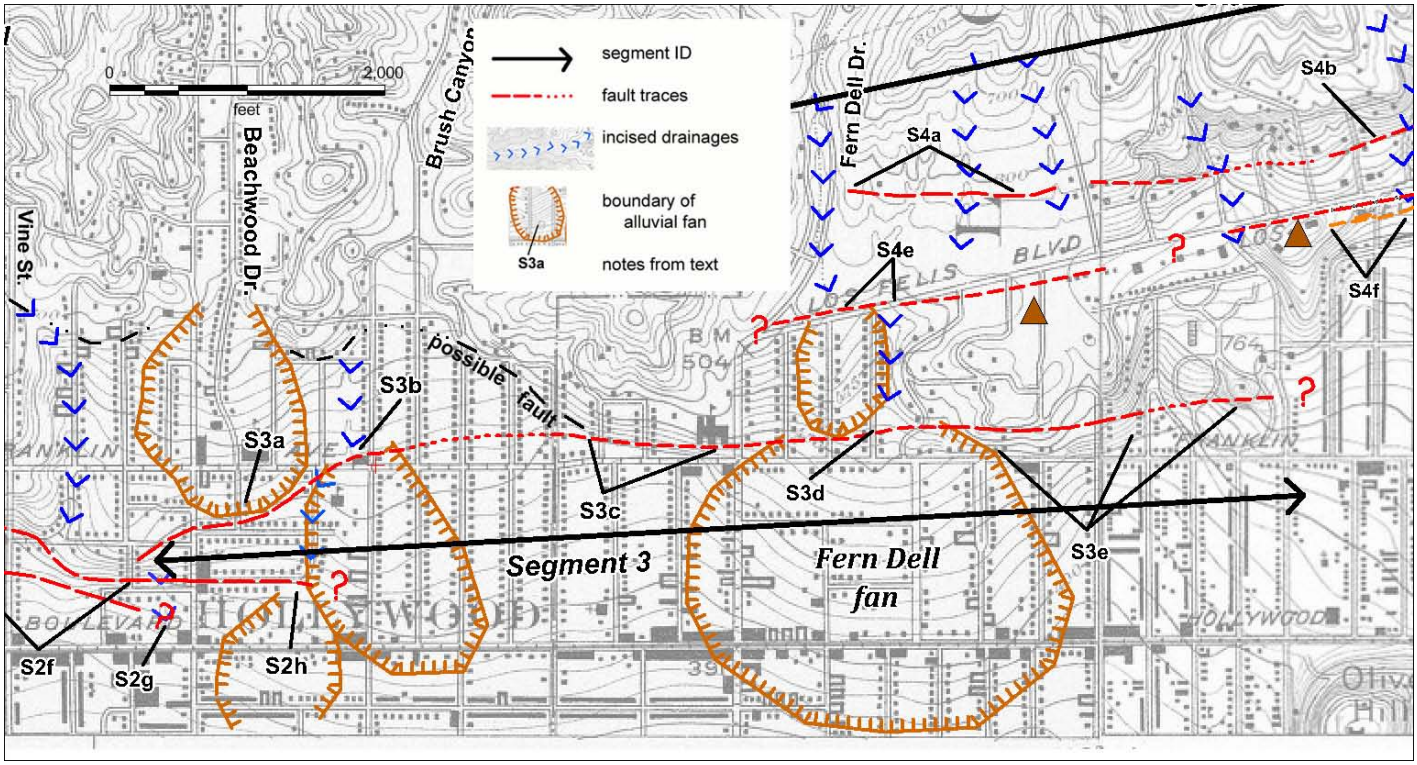

Figure 13 - Geomorphic features along Segment 3. (brown triangles indicate saddles discussed in Segment 4) Base map from 1926 Burbank and 1928 Glendale 6' quadrangles.

Segment 3 overlaps Segment 2 at its west end and Segment 4 at its east end (Figure 13). It appears to function as a transition in the stepover between those two segments. The western end is suggested by a slight steepening of the fan gradient below Beachwood Drive and Franklin Avenue (S3a), and an incision to deposition transition just to the east (S3b). The main alluvial fan of Brush Canyon conceals the trace for a short distance and then the approximate fault location is indicated by the abrupt slopes just north of Franklin Avenue (S3c, S3e). This prominent scarp is also marked by the initiation of fan deposition from the Fern Dell drainage (S3d) as well as a break in the fan gradients. Geomorphic expression of this fault segment dies out about 0.5 km west of Vermont Avenue.

There is another line of subdued and discontinuous scarps, mapped by Dolan *et al.* (1997; also see Figure 6), that splays west-northwest from the main fault trace. This possible fault appears to die out with no expression across Brush Canyon or at the Hollywood Reservoir

drainage, although the Beachwood fan might be observed to begin at the postulated fault. Based on aerial photo and field reconnaissance we suggest that these features may be merely related to the break in slope along the mountain front, and not directly related to Holocene faulting.

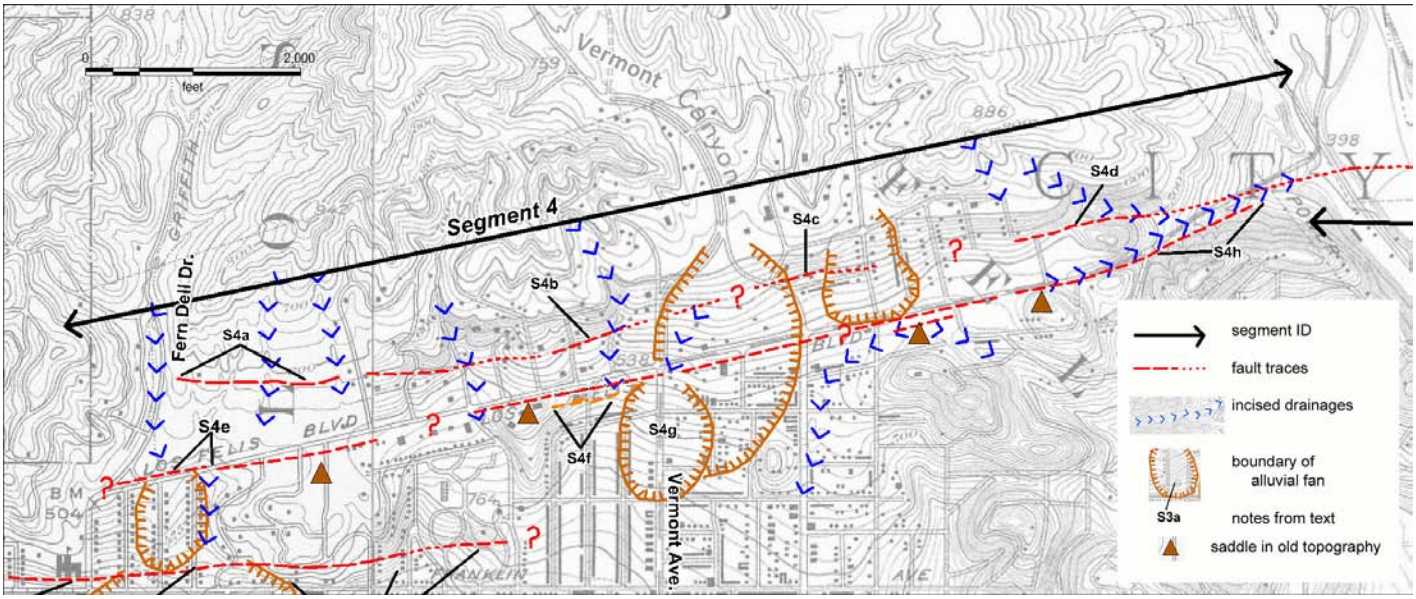

Figure 14 - Geomorphic features along Segment 4. Brown triangles locate prominent saddles along the Los Feliz Boulevard fault strand. Base map from 1926 Burbank and 1928 Glendale 6' quadrangles.

Segment 4 overlaps Segment 3 at its western end and there are geomorphic indications of at least two parallel faults in this segment (Figure 14). This segment is grossly indicated by an east-northeast trending trough that has been breached by erosion. Los Feliz Boulevard follows this trough.

A northern strand is defined at its western end by an offset fan surface (Plate 2, site A5) that is observable in vintage aerial photography as shown on Figure 15. There is at least one principal fault indicated by the steepest drop in the surface (S4a) and possible secondary faults between the principal strand and Los Feliz Boulevard indicated by additional local breaks in the slope gradient. Further east, this fault, as a single strand, is intermittently expressed by steepened slopes along trend (S4b, S4c); the fault is locally overlain by younger fans, such as that emanating from Vermont Canyon. At its eastern end it passes through a local topographic saddle (S4d) and then appears to join the Los Feliz Boulevard fault strand.

What we consider the principal active fault strand has few sharply defined indicators but is taken as the axis of the geomorphic trough that is followed by Los Feliz Boulevard. The general nature of this trough is indicated by several remnants of its eroded south margin with prominent saddles (Figure 14, brown triangles) along the fault trace, and is further confirmed by several profiles constructed from the LiDAR DEM.

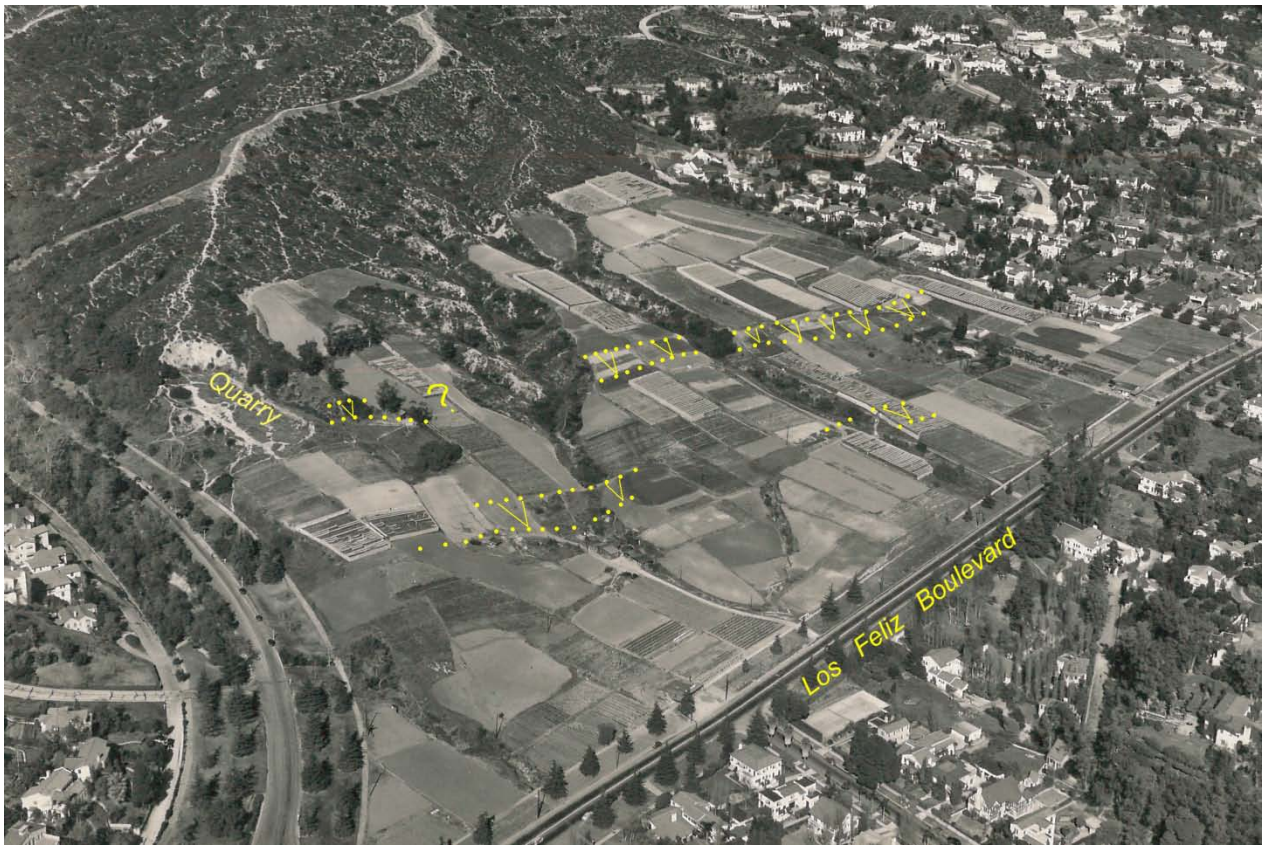

Figure 15 - Oblique aerial view of the Mead Estate from 1928, showing principal and minor scarps (Yellow dotted lines) extending across the property. Site is located at the west end of Los Feliz Boulevard (Plate 2, site 5). (Photo by Fairchild Aerial Surveys, 2/25/1938, from UCLA Geography Department).

There are several additional detailed observations that provide better location control and interpretive confidence for this fault. At locality S4e there is an apparent left-lateral offset of the Fern Dell drainage that is on the order of 130 m. A small, steep and inferentially young fan had, prior to modern development, started to build below the cut-off segment of this drainage that lies upstream. Further east, just west of Vermont Avenue, an oblique aerial photo from 1921 reveals some lineaments in a then-recently graded slope below Los Feliz Boulevard (S4f; Figure 16). These lineaments, parallel to the road, may be faults. At Vermont Avenue there is a small young fan that appears to be forming just south of the fault (S4g). Contours on the 1928 topographic map suggest a subtle swale may have been evolving just upstream of the fault at this point across an older, now abandoned, fan that drained Vermont Canyon. The fault location is suggested at the east end of this segment by a linear eroded drainage (S4h) and a coincident tonal lineament visible in the vertical aerial imagery.

A third fault strand, still farther south, may be an eastern extension of Segment 3 but it lacks any youthful expression in this area. Although this strand was previously mapped by others, as shown on Plate 1, field checking and vintage air photo review noted only gentle fan slopes and granitic bedrock outcrops with no indication of any youthful fault-related features along the trace.

Figure 16 - Oblique aerial photo near the intersection of Vermont Ave. and Los Feliz Blvd. showing fresh grading south of Los Feliz. Blvd. Lineaments (highlighted with red) are possible fault traces. (Photo by Spence Aerial Photos, circa 1921; from UCLA Spence collection).

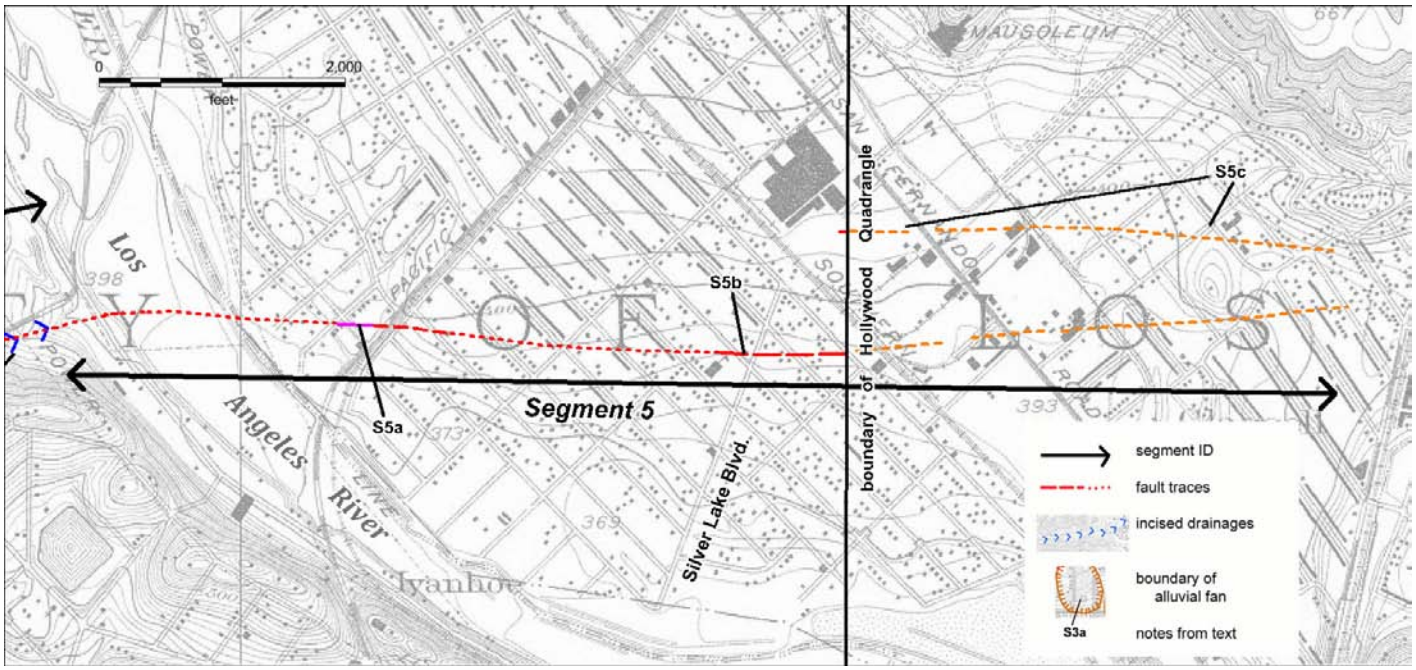

Figure 17 - Geomorphic features along Segment 5. Base map from 1928 Glendale 6' quadrangle.

Segment 5 continues eastward across the abandoned flood plain of the Los Angeles River in the Atwater area (Figure 17). An elongate knoll, just east of the river, has its southern terminus at the inferred fault location (S5a) where there are also some faint tonal lineaments and a possible scarp along the fault. Farther east the Hollywood Fault is expressed as a series of low, discontinuous breaks in the flood plain surface with south side down orientation, as previously observed by Weber (1979; 1980). At the eastern edge of the quadrangle the drop is as much as 2-3 m (Plate 2, site A6). There is a possible pressure ridge where the fault crosses Silver Lake Boulevard (S5b); it is visible in the elevation of several residential lots in spite of the roads having been graded level. Although scarps are noticeable in several of the streets, some of the previously mapped features (scarps and lineaments) have been obscured by development.

East of the map boundary there are additional features to support the location of the fault as it steps northward, including aligned tonal and vegetation lineaments (S5c). The pair of faults appear to define a knoll evident in the older topographic map; the knoll is separated from the adjacent hills by the northern strand.

DISCUSSION and CONCLUSIONS

Segment 1

The trace of the Hollywood Fault has historically been mapped very close to the mountain front in this area (Hoots, 1930; Dibblee, 1991; Dolan *et al.*, 1997). Recent geotechnical studies within the city of West Hollywood have located the principal active trace of the fault at several sites (see Plate 1; figure 3). These studies have also shown that, although the fault is concealed by young sediment in many areas, the Holocene deposits are quite thick and have been displaced by recent faulting (Harza, 1998; ECI, 2001a; LAW/Crandall, 2001; WLA, 2004)). Some scarps, north of the principal fault trace, have been shown to be related to an ancient shoreline and these are not associated with any evidence of active faulting. Several subtle slope breaks further out from the mountain front are ambiguous in origin and not directly attributable to faulting.

Segment 2

This segment of the fault zone is generally located by relatively abrupt, though intermittent, scarps. The fault location has been confirmed by several studies, including those by Dolan *et al.* (1997, 2000), Geopentech (2001 & 2013c) and LAW/Crandall (2000) and studies for the Los Angeles Metro Rail subway project (Earth Technology Corporation, 1993). Additional locations are inferred from subsurface data generated in other geotechnical investigations (Langan 2012 a, b; Group Delta, 2006; Geotechnologies, 2006, 2013). Holocene activity has been documented by Dolan *et al*. (2000) and is also suggested by the interpreted fault effects on young fan development.

The Hollywood Bowl Fault, although identified in bedrock mapping (Dibblee, 1991), and possible scarps mapped by Dolan *et al.* (2000), has only very subdued geomorphic expression that is likely erosional in origin or at least erosionally modified.

Segment 3

Segment 3 partly follows the mapping of Dolan *et al.* (2000), but we have made some different associations across the Brush Canyon fan, connecting those traces that seem to have the strongest influence on recent fan deposition and incision. The fan incision/deposition transitions provide some of our fault location evidence, in addition to interpreted scarps at the base of the hills.

The effects on the fans, as well as an inferred role in transferring slip between segments 2 and 4 suggest Holocene activity on this segment. This fault has been mapped to continue eastward, to join with a bedrock fault mapped just west of the Los Angeles River (Dibblee, 1991; Dolan *et al.,* 1997), but we see little evidence of activity on this eastern extent and, instead, infer that slip is being transferred to the faults of Segment 4. The northern trace of Dolan *et al.* (2000), which cuts across the mouth of Brush Canyon and Beachwood Drive, does not appear as youthful and dies out to the west with little evidence of fault displacement.

Segment 4

This is a somewhat enigmatic fault segment, having at the same time the least geotechnical evidence and little detail in the way of previously mapped fault traces but having some of the strongest geomorphology to indicate the presence of the fault zone.

The northern fault trace was shown by Dibblee (1991) as entirely concealed. Dolan *et al.* (1997, 2000) mapped the fault on the basis of the steepened slopes to the north. Weber showed a less continuous surface expression. We could verify discontinuous weak scarp segments approximately as shown by Weber, but the best evidence of this fault is in the scarps and offset fan surface visible in the vintage images at the west end of the fault (e.g. Figure 15). However, no corresponding features could be seen on further projection to the west. We judge this fault as likely Holocene based on the prominent scarps and its association with other elements of the fault zone.

What we infer to be the principal trace of the fault, roughly followed by Los Feliz Boulevard, had not been previously identified except for a short lineament mapped by Weber. We note that this lineament defines a subtle geomorphic trough indicated by a few eroded remnants of its south margin. Additional evidence comes from the apparent effect on the Fern Glen and Vermont Canyon drainages.

A southern fault, shown by both Dibblee (1991) and Dolan *et al.* (1997, 2000) about 1/3 of a kilometer south of Los Feliz Boulevard, is well expressed geomorphically to the west (part of Segment 3) and in the bedrock to the east (from Lamar, 1970). There may well be a buried continuous fault here but it lacks geomorphic evidence of recency in the central and eastern portions. It is also possible that the eastern bedrock segment of this fault connects to the zone of differential subsidence and the hypothetical Santa Monica Fault extension of Hill *et al.* (1979), discussed below, but there is no surface or subsurface data to support this connection.

Segment 5

The eastward continuation of the Hollywood Fault across the Los Angeles River valley, and possible connection with the Raymond Fault, has been shown in various locations by Dibblee (1991), Hill *et al.* (1979), and Weber *et al.* (1980). Most of these fault representations are shown as concealed and have been poorly constrained. The trace that we have mapped is based on borings and seismic studies along the west side of the Los Angeles River for the City of Los Angeles Northeast Interceptor Sewer Project (NEIS) by AMEC (2012 & 2013) and Advanced Geoscience, Inc. (2013), and geomorphic features mapped by Weber *et al.,* (1980), and is further supported by several groundwater studies and groundwater data (Converse, Davis and Associates, 1970; State Water Rights Board, 1962; Williams and Wilder, 1971).

Activity of this strand is based on detailed subsurface investigations from the NEIS project, tonal lineaments and breaks in slope observed in vintage air photo review and field reconnaissance, and analysis of subsurface clay layers within the groundwater well data (Converse, Davis and Associates, 1970).

Other Faults

The southern fault zone ("Santa Monica Fault") mapped by Hill *et al.* (1979) (or alternately the North Salt Lake Fault by Hildenbrand *et al.*, 2001), does not have any clear evidence as a surface fault. The zone of differential subsidence identified by Hill *et al.* (1979) is from 130 to as much as 400 meters wide and may be attributed to causes other than active fault displacement. There is no indication in the literature, or in our observations, of Holocene surface rupture along this fault projection.

RECOMMENDATIONS

Recommendations for encompassing faults in Alquist-Priolo Earthquake Fault Zones are based on the criteria of "sufficiently active" and "well-defined" (Bryant and Hart, 2007). The principal traces of the **Hollywood Fault** as shown on Plate 3 are recommended for zoning as they are mostly well-defined and believed to be active. The Hollywood Bowl Fault does not have any indication of recent activity and is not recommended for zoning. The southern strand of segments 3 and 4, south of Los Feliz Boulevard, is only well expressed within segment 3 and the remainder of that trace is not recommended for zoning.

Janis L. Hernandez
PG 7237, CEG 2260
February 14, 2014

Jerome A. Treiman
PG 3532, CEG 1035
February 14, 2014

I have reviewed and concur with the recommendations in this report.

CEG 1649
2/14/2014

AIR PHOTOS AND DIGITAL IMAGERY REVIEWED

Fairchild Aerial Surveys	Flight 113	1927 b/w Stereo-pair	scale 1:18,000 vertical	Frames:74 – 75, 121 – 123, 161 – 164, 188 – 190, 226 – 229, 262 – 264
Fairchild Aerial Surveys	Flight C-300	1928 b/w Stereo-pair	scale 1:18,000 vertical	Frames: K20 – K23, K43 – K47, K72 – K74, K89 – K90, K115 – K118, K141 – K144, K163 – K164, K184 – K187, K200 – K203
Spence Aerial Photography	114, Sec 14	1921	Oblique	Western Ave & Los Feliz Blvd
"	115	1921	Oblique	Vermont & Franklin
"	115	1921	Oblique	Vermont & Franklin – Janss Investment
"	#6126 Sec. 7	06-1924	Oblique	Anthony's Home – Hollywood, Los Feliz Blvd.
"	#6069	unk.	Oblique	Los Feliz Heights
"	#5750	unk.	Oblique	Los Feliz Blvd. near Vermont, Hollywood
"	#2993	unk.	Oblique	Hollywood north of Avenue between Vermont & Commonwealth
Fairchild Aerial Surveys	Group 31B	2-21-1938	Oblique	0-5476: Mead Estate – looking NE along Los Feliz from Western – Glendale in background
"	Group 31B	2-25-1938	Oblique	0-5497: Mead Estate – looking N from Los Feliz & Western
"	Group 31B	2-25-1938	Oblique	0-5500: Mead Estate – looking E on Los Feliz from Western
"	Group 31B	2-25-1938	Oblique	0-5499: Mead Estate – Los Feliz & Western, looking NE

Additional Imagery:

NAIP (National Agriculture Imagery Program): NAIP imagery from 2009 was used as a reference for interpretation of fault-related lineaments and topography. We used a county-wide image of Los Angeles to locate features identified in historical imagery and rectify geotechnical report maps. The images were viewed within the GIS platform (ArcGIS) and interpretation done directly on screen.

Los Angeles Region Imagery Acquisition Consortium: proprietary dataset, LiDAR data acquired 2006. (1.7 m DEM) http://planning.lacounty.gov/lariac

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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 9

330D

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 10

From:	Mindy Nguyen <Mindy.Nguyen@lacity.org>
Sent time:	04/08/2020 12:47:22 PM
To:	Administration Gabrieleno Indians <admin@gabrielenoindians.org>
Subject:	Hollywood Center AB 52 Consultation Conclusion
Attachments:	AB 52 Conclusion of Consultation for Gabrieleno - Kizh Nation_4 8 20.pdf

Chairman Salas,

Attached please find the City of Los Angeles Department of City Planning's AB 52 Completion of Consultation Letter for the Hollywood Center Project, located at 1720-1770 North Vine Street; 1746-1760 North Ivar Avenue; 1733 and 1741 Argyle Avenue; and 6236, 6270, and 6334 West Yucca Street.

A hard copy has been sent in the mail to your attention.

Thank you,

--

LOS ANGELES CITY PLANNING

Mindy Nguyen
City Planner
Los Angeles City Planning
221 N. Figueroa St., Suite 1350
Los Angeles, CA 90012
Planning4LA.org
T: (213) 847-3674

E-NEWS

AB 52 Conclusion of Consultation for Gabrielen.pdf

DEPARTMENT OF CITY PLANNING

COMMISSION OFFICE
(213) 978-1300

CITY PLANNING COMMISSION

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PRESIDENT

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CITY OF LOS ANGELES
CALIFORNIA

ERIC GARCETTI
MAYOR

EXECUTIVE OFFICES
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DIRECTOR

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TRICIA KEANE
DEPUTY DIRECTOR

ARTHI L. VARMA, AICP
DEPUTY DIRECTOR

LISA M. WEBBER, AICP
DEPUTY DIRECTOR

April 8, 2020

Andrew Salas
Tribal Chairman
Gabrieleño Band of Mission Indians – Kizh Nation
PO Box 393
Covina, CA 91723

RE: AB 52 Completion of Consultation
Hollywood Center Project at 1720-1770 North Vine Street; 1746-1760 North Ivar Avenue; 1733 and 1741 Argyle Avenue; and 6236, 6270, and 6334 West Yucca Street, Los Angeles, California 90028
(Case No. ENV-2018-2116-EIR)("Proposed Project")

Dear Chairman Salas:

The purpose of this correspondence is to briefly summarize the City's combined efforts to engage in a meaningful and good faith consultation regarding potential impacts to tribal cultural resources as they relate to the above-named Project, and to document the conclusion of the tribal consultation process, pursuant to Public Resources Code (PRC) Section 21080.3.2. The following is a summary of the history of tribal consultation regarding the Proposed Project.

On September 4, 2018, the City mailed an AB 52 Notification Letter to the Gabrieleño Band of Mission Indians – Kizh Nation (Gabrieleño) and on September 10, 2018, the City received an email from an Administrative Specialist for the Gabrieleño, requesting tribal consultation. The email included, as attachments, a formal letter request from Andrew Salas, Tribal Chairman, and a map depicting the territories of original peoples in Southern California.

On September 11, 2018, City Planning staff confirmed receipt of the email and requested a date and time to initiate the AB 52 Consultation for the Proposed Project. The tribal consultation process commenced on December 5, 2018 via a conference call attended by Tribal Chairman Andrew Salas and Matt Teutimez of the Gabrieleño; and Mindy Nguyen, William Lamborn, May Sirinopwongsagon and Nuri Cho of the Los Angeles Department of City Planning. During the phone consultation, City Planning staff acknowledged the receipt of the Gabrieleño's request for consultation, described the Project scope, including the proposed excavation activities and existing soil conditions. In response, the Gabrieleño shared their knowledge of the Project Site. Specifically, the Gabrieleño described two existing trade routes that overlap the Project Site, and indicated that these routes are considered cultural resources.

On December 6, 2018, City Planning staff sent a follow-up email to the Gabrieleño, summarizing the details of the phone consultation, and requested that additional documentation and/or materials in the form of recorded maps demonstrating the presence of a tribal cultural resource

AB 52 Conclusion of Consultation for Gabrielen.pdf

located within 0.5 miles of the Project Site, identification of tribal cultural resources in the Project area, evidence of human remains and artifacts in the surrounding area, and/or evidence of sacred land designated for trading routes be provided. On January 3, 2019, January 22, 2019 and again on March 4, 2019, the City sent a follow-up email to the Gabrieleño, requesting additional information and extending the deadline to provide substantial evidence.

To date, no evidence has been submitted that demonstrates that the specific location of the Project Site should be considered a tribal cultural resource pursuant to Public Resources Code Section 5024.1, such that monitoring for tribal cultural resources would be required to avoid significant and unavoidable impacts. Furthermore, review of the map originally provided with the consultation request did not demonstrate that there is an existing tribal cultural resource within the Project Site.

As a result of the information provided to the City by the Gabrieleño prior to, and during, the December 5, 2018 tribal consultation, in conjunction with the information provided in the Project's Tribal Cultural Resources Report, the City, after acting in good faith and with reasonable effort, has concluded that mutual agreement cannot be reached for purposes of AB 52. Based upon the record, the City has determined that no substantial evidence exists to support a conclusion that the Proposed Project may cause a significant impact on tribal cultural resources. Therefore, the City has no basis under CEQA to impose any related mitigation measures. However, as an additional protection, the City will add the attached Condition of Approval under its police powers to protect the inadvertent discovery of tribal cultural resources.

The City will soon release the Project's Draft Environmental Impact Report, which will commence a 60-day period, during which, any interested parties and agencies, including the Gabrieleño, may submit written comments on the adequacy of the EIR. In the meantime, please do not hesitate to contact me if you wish to share any additional information, comments, or concerns.

Respectfully,

Mindy Nguyen
City Planner
Department of City Planning –Major Projects

AB 52 Conclusion of Consultation for Gabrielen.pdf

Condition of Approval - Tribal Cultural Resource Inadvertent Discovery

In the event that objects or artifacts that may be tribal cultural resources are encountered during the course of any ground disturbance activities[1], all such activities shall temporarily cease on the project site until the potential tribal cultural resources are properly assessed and addressed pursuant to the process set forth below:

- Upon a discovery of a potential tribal cultural resource, the project Permittee shall immediately stop all ground disturbance activities and contact the following: (1) all California Native American tribes that have informed the City they are traditionally and culturally affiliated with the geographic area of the proposed project; (2) and the Department of City Planning.
- If the City determines, pursuant to Public Resources Code Section 21074 (a)(2), that the object or artifact appears to be tribal cultural resource, the City shall provide any effected tribe a reasonable period of time, not less than 14 days, to conduct a site visit and make recommendations to the Project Permittee and the City regarding the monitoring of future ground disturbance activities, as well as the treatment and disposition of any discovered tribal cultural resources.
- The project Permittee shall implement the tribe's recommendations if a qualified archaeologist, retained by the City and paid for by the project Permittee, reasonably concludes that the tribe's recommendations are reasonable and feasible.
- The project Permittee shall submit a tribal cultural resource monitoring plan to the City that includes all recommendations from the City and any effected tribes that have been reviewed and determined by the qualified archaeologist to be reasonable and feasible. The project Permittee shall not be allowed to recommence ground disturbance activities until this plan is approved by the City.
- If the project Permittee does not accept a particular recommendation determined to be reasonable and feasible by the qualified archaeologist, the project Permittee may request mediation by a mediator agreed to by the Permittee and the City who has the requisite professional qualifications and experience to mediate such a dispute. The project Permittee shall pay any costs associated with the mediation.
- The project Permittee may recommence ground disturbance activities outside of a specified radius of the discovery site, so long as this radius has been reviewed by the qualified archaeologist and determined to be reasonable and appropriate.
- Copies of any subsequent prehistoric archaeological study, tribal cultural resources study or report, detailing the nature of any significant tribal cultural resources, remedial actions taken, and disposition of any significant tribal cultural resources shall be submitted to the South Central Coastal Information Center (SCCIC) at California State University, Fullerton.
- Notwithstanding the above, any information determined to be confidential in nature, by the City Attorney's office, shall be excluded from submission to the SCCIC or the general public under the applicable provisions of the California Public Records Act, California Public Resources Code, and shall comply with the City's AB 52 Confidentiality Protocols.

[1] Ground disturbance activities shall include the following: excavating, digging, trenching, plowing, drilling, tunneling, quarrying, grading, leveling, removing peat, clearing, pounding posts, augering, backfilling, blasting, stripping topsoil or a similar activity

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 11

From:	Administration Gabrieleno Indians <admin@gabrielenoindians.org>
Sent time:	09/10/2018 11:32:04 AM
To:	Elva Nuno-O'Donnell <elva.nuno-odonnell@lacity.org>
Subject:	Hollywood Center Project
Attachments:	Original Peoples County Map.jpg Hollywood Center Project.pdf

Please see attachments

Sincerely,
Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

Original Peoples County Map.jpg

Original People of Los Angeles County

Map of territories of Orignal Peoples with county boundaries in Southern California.

Hollywood Center Project.pdf

GABRIELEÑO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The San Gabriel Band of Mission Indians /Gabrielino Tribal Council
recognized by the State of California as the aboriginal tribe of the Los Angeles basin

City of Los Angeles
6262 Van Nuys Boulevard, Room 351
Los Angeles, CA 91401

September 10, 2018

Re: AB52 Consultation request for Hollywood Center Project

Dear Vincent P. Bertoni,

Please find this letter as a written request for consultation regarding the above-mentioned project pursuant to Public Resources Code § 21080.3.1, subd. (d). Your project lies within our ancestral tribal territory, meaning belonging to or inherited from, which is a higher degree of kinship than traditional or cultural affiliation. Your project is located within a sensitive area and may cause a substantial adverse change in the significance of our tribal cultural resources. Most often, a records search for our tribal cultural resources will result in a "no records found" for the project area. The Native American Heritage Commission (NAHC), ethnographers, historians, and professional archaeologists can only provide limited information that has been previously documented about California Native Tribes. For this reason, the NAHC will always refer the lead agency to the respective Native American Tribe of the area. The NAHC is only aware of general information and are not the experts on each California Tribe. Our Elder Committee & tribal historians are the experts for our Tribe and can provide a more complete history (both written and oral) regarding the location of historic villages, trade routes, cemeteries and sacred/religious sites in the project area.

Additionally, CEQA now defines Tribal Cultural Resources (TCRs) as their own independent element separate from archaeological resources. Environmental documents shall now address a separate Tribal Cultural Resource section which includes a thorough analysis of the impacts to only Tribal Cultural Resources (TCRs) and includes independent mitigation measures created with Tribal input during AB-52 consultations. As a result, all mitigation measures, conditions of approval and agreements regarding TCRs (i.e. prehistoric resources) shall be handled solely with the Tribal Government and not through an Environmental/Archaeological firm.

In effort to avoid adverse effects to our tribal cultural resources, we would like to consult with you and your staff to provide you with a more complete understanding of the prehistoric use(s) of the project area and the potential risks for causing a substantial adverse change to the significance of our tribal cultural resources.

Consultation appointments are available on Wednesdays and Thursdays at our offices at 910 N. Citrus Ave. Covina, CA 91722 or over the phone. Please call toll free 1-844-390-0787 or email admin@gabrielenoindians.org to schedule an appointment.

*** Prior to the first consultation with our Tribe, we ask all those individuals participating in the consultation to view a video produced and provided by CalEPA and the NAHC for sensitivity and understanding of AB52. You can view their videos at: http://calepa.ca.gov/Tribal/Training/ or http://nahc.ca.gov/2015/12/ab-52-tribal-training/*

With Respect,

Andrew Salas, Chairman

Andrew Salas, Chairman | Nadine Salas, Vice-Chairman | Christina Swindall Martinez, secretary
Albert Perez, treasurer I | Martha Gonzalez Lemos, treasurer II | Richard Gradias, Chairman of the Council of Elders
PO Box 393, Covina, CA 91723 | www.gabrielenoindians.org | gabrielenoindians@yahoo.com

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 12

THE SILVERSTEIN LAW FIRM
A Professional Corporation

215 NORTH MARENGO AVENUE, 3RD FLOOR
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PHONE: (626) 449-4200 FAX: (626) 449-4205
ROBERT@ROBERTSILVERSTEINLAW.COM
WWW.ROBERTSILVERSTEINLAW.COM

June 1, 2018

VIA EMAIL California.Jobs@opr.ca.gov
Scott.Morgan@opr.ca.gov

Governor's Office of Planning and Research
State Clearing House
Scott Morgan, Director
1400 Tenth Street, Room 117
Sacramento, CA 95814

Re: Objections to ELDP Application by MCAF Vine, LLC
State Clearing House Tracking No. 2018051002; Hollywood Center Project

Dear Director Morgan:

Please accept these objections to the Environmental Leadership Development Project ("ELDP") application submitted by developer MCAF Vine, LLC for the "Hollywood Center Project" in Hollywood.

Since 2013, we have represented petitioners who successfully opposed a previous iteration of the project when it was called the Millennium Hollywood project. On April 30, 2015, we obtained a writ of mandate on multiple grounds invalidating the Los Angeles City Council's approvals of the prior project. (**Exhibit 1** [April 30, 2015 ruling by the Hon. James C. Chalfant].)

The prior project also faced grave concerns from two State agencies: the California Geological Survey and Caltrans. Both questioned the project's impacts on public health, safety and welfare, including because the 7.0 magnitude, surface rupture, active Hollywood Earthquake Fault runs directly through the site, as officially mapped in the State's Alquist-Priolo Earthquake Fault Zone Map (**Exhibit 2**, official map and State Fault Evaluation Report 253 and supplement ["FER 253]"), and because of deleterious impacts on the State Highway System, specifically the 101 Freeway's mainline and ramps. (**Exhibit 3**, Caltrans' repeated objection letters.)

Those concerns are even more well founded today given the current iteration of the project, which is basically the prior project, but more offensive. The current proposal would place even larger skyscrapers astride and adjacent to the earthquake fault. (See **Exhibit 4**, State-mapped Hollywood Earthquake Fault superimposed onto the developer's new site plan showing eastern skyscraper bisected by the earthquake fault, and further showing the ignoring of the required 50-foot setback areas with major portions of building footprints within the 50-foot restricted Alquist-Priolo setback zones.)

The State provided an administrative appeal period for anyone to challenge the new Alquist-Priolo Map's findings. Millennium did not appeal, which means it failed to exhaust its administrative remedies in seeking to argue for the active fault designation through the site to be changed. Accordingly, Millennium forfeited any ability to challenge that identification. Therefore, the official mapping by the California Geological Survey of the active Hollywood Earthquake Fault through the site is final, and it must be treated as final by all offices of the State, including as part of this ELDP process.

The developer, Millennium Partners, aka MCAF Vine, LLC, is also the same developer responsible for the Leaning Tower of San Francisco debacle. That travesty has been exhaustively exposed by the New York Times, The Wall Street Journal, and CBS TV's "60 Minutes." That alone should cause significant pause in your review of the ELDP application.

But it is the physical dangers presented by this latest project – which would imperil the lives of thousands who would live, work in and visit the site daily – that should render the ELDP application *void ab initio*.

By asking the State of California to grant the extraordinary financial benefits and legal privileges that ELDP status would confer – and in flagrant disregard of the State's official Alquist-Priolo Map – the applicant should instead be granted the *chutzpah* award. "[I]f this were the Federal Circuit, [the Millennium developer] would qualify for a 'chutzpah award.' [Citation.]" Thayer v. Wells Fargo Bank (2001) 92 Cal.App.4th 819, 845, citing Checkpoint Systems v. U.S. Intern. Trade Com'n (Fed.Cir. 1995) 54 F.3d 756, 763, fn. 7 (noting "chutzpah" describes "the behavior of a person who kills his parents and pleads for the court's mercy on the ground of being an orphan").

We respectfully submit that your review of Millennium's application should include soliciting the empirical input from the California Geological Survey and Caltrans. Please seek the opinions of your own expert agencies in reviewing this ELDP application.

Although certain special projects could be appropriate for ELDP status, this project does not merit such status. Rather, to grant ELDP status here would discredit the integrity of the process and sully the otherwise understandable goals of the ELDP program.

If the developer actually moves forward with the project following its prior legal defeat, it should be required to do so with no special privileges, i.e., within the standard legal framework. It should be subjected to the fullest measure of transparency and the public's right to participate. As Justice Brandeis observed, "Sunlight is said to be the best of disinfectants; electric light the most efficient policeman." Buckley v. Valeo (1976) 424 U.S. 1, 67, quoting L. Brandeis, *Other People's Money*, 62, National Home Library Foundation, ed. 1933.) In this situation and with this developer, more light is needed, not less.

Just as Millennium in San Francisco grossly misrepresented its building safety and geological work (see, e.g., **Exhibit 5** [one of a number of lawsuits currently pending against the Millennium developer for fraudulent misrepresentation, fraud in the inducement, and other wrongful acts] & **Exhibit 6** [San Francisco City Attorney Dennis Herrera's September 20, 2016 cover letter to Millennium and its principal, Chris Jeffries, with administrative subpoena]), it has repeatedly made false and misleading statements about the alleged lack of an active earthquake fault through the Hollywood site – all in contravention of the State's Alquist-Priolo Map.

In that regard, we have learned that some Los Angeles City officials and project proponents are claiming that Judge Chalfant found there was no earthquake fault on the site. That is incorrect. To the contrary, in response to our request for judicial notice of the then recently-released Final Alquist-Priolo Map and FER 253 Study, Judge Chalfant found that those documents "corroborate Petitioners' position" regarding the dangers of the active fault running through the site. But he also found them inadmissible in the prior writ of mandamus case because "they did not exist at the time of the [City's] approval." (**Exhibit 1**, p. 11.) However, the Map and FER 253 Study most certainly exist now, and cannot be avoided.

Similarly, the Millennium developer's paid-for study claiming that no active fault crosses the site does not overcome the State's official conclusions and mapping in the final Alquist-Priolo Map. Indeed, as noted above, the Millennium developer waived any ability to challenge the State's conclusive finding of the 7.0 magnitude active Hollywood Earthquake Fault running through the site by the developer's failure to exhaust the administrative appeal process provided as to that issue.

To conclude, this is neither a corporate citizen nor a project that should receive or is legally entitled to receive the enormous benefits (with attendant harms to the public's health, safety and due process rights) of ELDP status.

Thank you for your consideration of this letter and attached exhibits. Please contact us if we can provide any further information.

Very truly yours,

ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
Attachments

EXHIBIT 1

FILED
Superior Court of California
County of Los Angeles
APR 30 2015
Sherri R. Carter, Executive Officer/Clerk
By Annette Fajardo Deputy
Annette Fajardo

Modified

StopTheMilleniumHollywood.com, et al. v. City of Los Angeles, et al.
BS 144606

Tentative Decision on Petition for Writ of Mandamus: granted in part

Petitioners StopTheMillenniumHollywood.com, Communities United for Reasonable Development, Beachwood Canyon Neighborhood Association, and George Abrahams seek a writ of administrative mandamus setting aside the actions of Respondent City of Los Angeles ("City") in approving a large, mixed-use development in Hollywood ("Project"), its supporting Environmental Impact Report ("EIR"), and its land-use entitlements.[1]

The court has read and considered the moving papers, opposition, and reply, and renders the following tentative decision.

A. Statement of the Case

Petitioners StopTheMillenniumHollywood.com ("STMH"), Communities United for Reasonable Development ("CURD"), Beachwood Canyon Neighborhood Association ("BCNA"), and George Abrahams ("Abrahams") commenced the instant proceeding on August 28, 2013 alleging claims for mandamus, declaratory relief, and injunction.

On September 5, 2014, Petitioners filed a First Amended Petition for Writ of Mandamus and Complaint for Declaratory and Injunctive Relief ("FAP"), which is the operative pleading. The FAP alleges in pertinent part as follows.

1. Petitioners and Real Party-in-Interest

Petitioner StopTheMillenniumHollywood.com ("STMH") is an unincorporated association comprised of community organizations and individuals who participated in the administrative proceedings before the City. FAP, ¶7. Petitioner CURD is another unincorporated association of community organizations and individuals who jointly filed land use appeals during the administrative hearing process before the City Planning Commission and the City Council. Id., ¶8. Petitioner BCNA is a corporation representing property owners and residents living in the areas near Beachwood Canyon in or immediately adjacent to Hollywood and the site of the Project. Id., ¶9. BCNA is the parent organization of STMH and CURD. Id. Petitioner Abrahams is a director of BCNA. Id., ¶1 0.

Real Party-in-Interest Millennium Hollywood, LLC ("Millennium") is the business entity seeking to construct the Project.

2. Procedural Summary

A Draft EIR for the Project was released on October 25, 2012 and circulated for 45 days. FAP ¶25. A joint public hearing on the Project was held before a Deputy Advisory Agency and Hearing Officer (sometimes "DAA") on February 19, 2013. Id., ¶26. On February 22, 2013, the DAA approved the vesting tentative tract map ("VTTM") for the Project. Id., ¶27. The DAA also adopted a Statement of Overriding Considerations at the hearing. Id. On March 4, BCNA, represented by Abrahams, appealed the VTTM and Final EIR ("FEIR") approvals as to the City

[1]The court has separately ruled on the parties' several motions to augment the Administrative Record.

05-08-2015

Planning Commission ("Planning Commission"). Id., ¶28. The hearing on BCNA's appeal of the VTTM and FEIR, as well as consideration of the entitlements and development agreement took place on March 28, 2013. Id., ¶30. On April 27, 2013, the Planning Commission issued a determination approving the entitlements and EIR, and recommending a zone change and a height district ordinance change. Id., ¶35. The same day the Planning Commission issued another determination letter denying BCNA's appeal of the DAA determinations. Id., ¶36.

On May 7, 2013, CURD filed an appeal of the Planning Commission's approval of a zone change, height district change and associated actions. Id., ¶37. CURD also appealed the Planning Commission's decision from its appeal of the VTTM approval. Id., ¶38.

On May 24, 2013, the City issued a notice of land use appeal public hearing before the City Council's Planning and Land Use Management Committee ("PLUM"). Id., ¶43. The hearing was initially set for June 4, 2013. Id. CURD was among the organizations whose appeal was to be heard at this hearing. Id., ¶44. At the scheduled PLUM hearing on June 4, it was announced that the matter was being postponed June 18, 2013 at Millennium's request. Id., ¶44. It was also announced that the matter would be heard by the full City Council on June 19, 2013. Id.

At the June 18, 2013 PLUM hearing, it was announced that the City Council hearing scheduled for the following day was postponed to July 24, 2013. Id., ¶ 53. PLUM also voted to (1) approve the Project, subject modified conditions, (2) deny all appeals, and (3) adopt the Final EIR and "Statement of Overriding Considerations." Id., ¶56.

Prior to the July 24, 2013 City Council hearing, PLUM released a "Recommendation Report" relating the actions that it had taken on June 18, 2013. Id., ¶62. Petitioners allege that this report misrepresented the June 18, 2013 actions. Id. Specifically, the report referred to a different ordinance than the one discussed at the hearing. Id. PLUM essentially set their initial proposed ordinance aside and adopted a new one instead. Id., ¶64.

The City Council's hearing was held on July 24, 2013. ¶ 71. The day before the hearing, Millennium submitted a last-minute 311-page report attacking Petitioners' arguments. Id., ¶68. Petitioners were deprived of an opportunity to rebut Millennium's evidence. Id. At the conclusion of the City Council's hearing, the councilmembers voted unanimously to approve the Project. Id., ¶85.

3. The Causes of Action

The FAP's first three causes of action are for violation of CEQA. The First Cause of Action alleges that the City violated CEQA and the CEQA Guidelines by abusing its discretion in: (1) failing to provide an accurate, stable and finite project description; (2) failing to address comments raising significant environmental issue in good faith, with reasoned responses; (3) failing to adequately disclose, analyze, mitigate or avoid the Project's significant impacts on the environment, including emergency service response times, seismic risks and traffic impacts; (4) failing to re-circulate the Draft EIR when significant new (seismic) information was added late or was requested to be added even after FEIR certification; (5) failing to adequately disclose, analyze, mitigate or avoid the Project's land use impacts associated with each Los Angeles Municipal Code ("LAMC") provision overridden in favor of development regulations and/or land use equivalency programs; and (6) failing to adequately analyze the impact of the invalidation of the 2012 Hollywood Community Plan Update. Id., ¶123. Petitioners further allege that the City abused its discretion by concluding that certain impacts would be less than significant without substantial evidence in support thereof. Id., ¶128.

The Second Cause of Action alleges that in disregarding the concerns of Caltrans, a responsible agency under CEQA, the City violated Pub. Res. Code sections 21080.4(a) and 21092.4, and Guidelines section 15096(b)(2). Id., ¶144.

The Third Cause of Action alleges that by failing to notify and consult with the California Geologic Survey ("CGS"), a responsible agency under CEQA, the City violated Pub. Res. Code section 21153 and Guidelines section 15086(a)(1). Id., ¶151. Millennium and the City "colluded to suppress critical information regarding seismic hazards at the Millennium Project Site, including information indicating that traces of the active Hollywood Earthquake Fault bisect the property, and further including suppression from the EIR of the California Department of Conservation, California Geological Survey's 2010 Fault Activity Map, which indicates the presence of the active Hollywood Earthquake Fault running directly through the Millennium Property." Id., ¶153.

The Fourth Cause of Action is for violation of due process rights and deprivation of a fair hearing under the United States Constitution, the California Constitution, and CCP section 1094.5(b). Petitioners allege that the City's failure to attach the precise versions of the Millennium Hollywood Development Regulations and Millennium Hollywood Land Use Equivalency Program ("LUEP") deprived them of the ability to know from the four corners of the letters of determination precisely what the Planning Commission decided. Id., ¶158. When confronted with this deficiency, the City refused to cure the defect, making it impossible for Petitioners to track changes made by the City during the City Council hearing process because Petitioners could not verify what the operative versions of these zoning documents were. Id. The City Council's failure to develop and publish procedural rules to assure fair and consistent hearings violates Govt. Code section 65804. Id.

The Fifth Cause of Action is for declaratory and injunctive relief based on deprivation of fair hearings in land use appeals. Petitioners allege that the City is presently engaged in a pattern of violating Govt. Code section 65804. Id., ¶174.

The Sixth Cause of Action is for violation of City Charter (sometimes "Charter") section 562 and LAMC section 12.27(D). Petitioners generally allege that the City has granted variances without making the legally mandated findings under the Charter and LAMC. Id., ¶¶ 177-78.

The Seventh Cause of Action is for violation of Charter section 562, LAMC sections 12.04 and 12.32, as well for an unconstitutional impairment of the City's police powers. Petitioners allege that the City is attempting to elevate development regulations into the position of a municipal ordinance, per LAMC section 12.04 and 12.32, in irreconcilable conflict with Charter section 562. Id., ¶181. In doing so, the City is attempting to override stricter LAMC provisions. Id., ¶182. The LUEP and development regulations are a grant of carte blanche authority which is *ultra vires* and *void ab initio* because they amount to the City's unconstitutional surrender of its police power to regulate land use. Id., ¶ 183.

Finally, the Eighth Cause of Action is for violation of an existing peremptory writ of mandate issued in La Mirada Avenue Neighborhood Association of Hollywood v. City of Los Angeles, et al., ("La Mirada") BS138369 invalidating the Hollywood Community Plan Update ("HCPU"). Id., ¶¶ 191-98. Per the writ, the City rescinded the HCPU and decertified its EIR. Id., ¶201. Accordingly, the FEIR's reliance on the invalidated HCPU warrants the FEIR's invalidation. Id., ¶203-04.

4. Relief Sought

On the First, Second, Third and Eighth Causes of Action, Petitioners seek: (1) a peremptory writ of mandamus directing the City and City Council to vacate and set aside the actions approving the FEIR, Project approvals, and all land use entitlements; (2) an injunction enjoining the City from granting any authority, permits, certificate of occupancy, or entitlements as part of the Project pursuant to the City's prior actions; and (3) an injunction enjoining Millennium from undertaking construction on the Project. Id., p. 62.

On the Fourth Cause of Action, Petitioners seek a declaration that their due process and fair hearing rights were violated. Id. They request mandamus directing the City to (1) vacate and set aside its actions in approving the FEIR, Project approvals, and entitlements, and (2) provide new and fair hearings that comply in all respects with due process of law. Id.

On the Fifth Cause of Action, Petitioners seek a judicial declaration that the City violated Govt. Code section 65804, as well as mandamus directing the City to develop proper fair hearing policies and procedures during land use appeals. Id., pp. 62-63.

Finally, on the Sixth, Seventh and Eighth Causes of Action, Petitioners seek a writ of mandamus directing the City vacate and set aside its actions approving the Project's land use entitlements. Id., p. 63. They further seek to have the City enjoined from granting any authority, permits, certificate of occupancy, or entitlements pursuant to the City's prior land use entitlement approvals. Id. Petitioners also seek to have Millenium enjoined from undertaking construction on the Project pursuant to the approved land use entitlements. Id.

B. Standard of Review

A party may seek to set aside an agency decision for failure to comply with CEQA by petitioning for either a writ of administrative mandamus (CCP §1094.5) or of traditional mandamus. CCP §1085.

CEQA review of quasi-adjudicatory agency actions in which a hearing is required, evidence taken, and the agency determines factual issues are governed by administrative mandamus under CCP section 1094.5, in which the court determines whether the agency's decision is supported by substantial evidence. Pub. Res. Code §21168. Examples of such actions include issuance of use permits (Neighborhood Action Group v. County of Calaveras, (1984) 156 Cal.App.3d 1176, 1186), planned use development permits (City of Fairfield v. Superior Court, (1975) 14 Cal.3d 768, 773), and zoning variances. Topanga Assn. For a Scenic Community v. County of Los Angeles, (1974) 11 Cal.3d 506, 517.

CEQA review of quasi-legislative agency actions is governed by traditional mandamus per CCP section 1085, in which the court determines whether the agency prejudicially abused its discretion by not proceeding in a manner required by law or by making a decision not supported by substantial evidence. Pub.Res. Code §21168.5. Examples of such actions include adoption of a general plan or rezoning property. O'Loane v. O'Rourke, (1965) 231 Cal.App.2d 774, 784-85 (general plan); San Diego Building Contractors Assn. v. City Council, (1974) 13 Cal.3d 205, 212-13).

There is no practical difference between the standards of review applied under traditional or administrative mandamus in CEQA cases. Friends of the Old Trees v. Dept. Of Forestry & Fire Protection, (1997) 52 Cal.App.4th 1383, 1389. Public entities abuse their discretion if their actions or decisions do not substantially comply with the requirements of CEQA. Sierra Club v. West Side Irrigation District, (2005) 128 Cal.App.4th 690, 698. Whether an agency abused its discretion requires "scrutiny of the alleged defect" depending on whether the claim is

predominately "improper procedure or dispute over the facts." Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova, ("Vineyard") (2007) 40 Cal.4th 412, 435. Abuse of discretion is established if the agency has not proceeded in a manner required by law or if the determination or decision is not supported by substantial evidence. Western States Petroleum Assn. v. Superior Court, (1995) 9 Cal.4th 559, 568.

Petitioners' first, second, and third causes of action alleges violation of CEQA in failing to proceed in the manner required by law, and to some extent the first cause of action challenges the sufficiency of the FEIR. Where an EIR fails to provide certain required information and/or was misleading is failing "to proceed in a manner required by CEQA" and an issue of law. Vineyard, *supra*, 40 Cal.4th at 435. Such issues require "a critical consideration, in a factual context, of legal principles and their underlying values." Harustak v. Wilkins, (2000) 84 Cal.App.4th 208, 212. However, the omission of information in an EIR is not presumed prejudicial, and will rise to the level of a failure to proceed in the manner required by law only if the analysis is clearly inadequate or unsupported. Citizens for a Sustainable Treasure Island v. City and County of San Francisco, ("Treasure Island) (2014) 227 Cal.App.4th 1036, 1046-47.

Whether an agency abused its discretion in an EIR's findings must be answered with reference to the existence of substantial evidence in the administrative record. "Substantial evidence," is defined as "enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached." Guidelines[2] §15384(a). The substantial evidence standard requires deference to the agency's factual and environmental conclusions based on conflicting evidence, but not to issues of law. Laurel Heights Improvement Assn. v. Regents of University of California, ("Laurel Heights") (1988) 47 Cal.3d 376, 393, 409. Argument, speculation, and unsubstantiated opinion or narrative will not suffice. Guidelines §15384(a), (b). Whether substantial evidence exists is a question of law. *See* California School Employees Association v. DMV, (1988) 203 Cal.App.3d 634, 644.

The challenges to violation of the LAMC and City Charter (sixth and seventh causes of action) are traditional mandamus claims. The City is entitled to great deference in interpreting its own ordinances, and the court evaluates as an issue of law whether development regulations are an unlawful delegation of police power. *See* County Mobilehome Positive Action Committtee, Inc. v. County of San Diego, (1998) 62 Cal.App.4th 727, 733. Petitioners have the burden of showing that the agency decision is unreasonable or invalid as a matter of law. City of Arcadia v. State Water Resources Control Board, (2006) 135 Cal.App.4th 1392, 1409. The court must uphold the agency's action unless it is "arbitrary and capricious, lacking in evidentiary support, or made without due regard for the petitioner's rights." Citizens for Improved Sorrento Access, Inc. v. City of San Diego, (2004) 118 Cal.App.4th 808, 814; Sequoia Union High School District v. Aurora Charter High School, (2003) 112 Cal.App.4th 185, 195.

[2]As an aid to carrying out the statute, the State Resources Agency has issued regulations called "Guidelines for the California Environmental Quality Act" ("Guidelines"), contained in Code of Regulations, Title 14, Division 6, Chapter 3, beginning at section 15000.

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For the constitutional challenges based on due process and fair hearing (fourth and fifth causes of action), the court independently reviews the proceedings to decide whether a party's rights were compromised. Sinaiko v. Superior Court, (2004) 122 Cal.App.4th 1133, 1140.

Finally, the challenge for a violation of the La Mirada judgment (eighth cause of action) is a traditional mandamus claim for abuse of discretion based on a failure to proceed in the manner required by law and/or based on a lack of substantial evidence. The underlying judgment is interpreted as an issue of law. Dow v. Lassen Irrigation Co., (2013) 216 Cal.App.4th 766, 780-81.

C. Statutory Framework

1. California Environmental Quality Act (CEQA)

The purpose of CEQA, (Pub. Res. Code §21000 *et seq.*,) is to maintain a quality environment for the people of California both now and in the future. Pub. Res. Code § 21000(a). "[T]he overriding purpose of CEQA is to ensure that agencies regulating activities that may affect the quality of the environment give primary consideration to preventing environmental damage." Save Our Peninsula Committee v. Monterey County Board of Supervisors, (2001) 87 Cal.App.4th 99, 117. CEQA must be interpreted "so as to afford the fullest, broadest protection to the environment within reasonable scope of the statutory language." Friends of Mammoth v. Board of Supervisors, (1972) 8 Cal.3d 247, 259.

The Legislature chose to accomplish its environmental goals through public environmental review processes designed to assist agencies in identifying and disclosing both environmental effects and feasible alternatives and mitigations. Pub. Res. Code §21002. Public agencies must regulate both public and private projects so that "major consideration is given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian." Pub. Res. Code §21000(g).

Under CEQA, a "project" is defined as any activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (1) undertaken directly by any public agency, (2) supported through contracts, grants, subsidies, loans or other public assistance, or (3) involving the issuance of a lease, permit, license, certificate, or other entitlement for use by a public agency. Pub. Res. Code §21065. The word "may" in this context means a reasonable possibility. Citizen Action to Serve All Students v. Thornley, (1990) 222 Cal.App.3d 748, 753. "Environment" means the physical conditions which exist within the area which will be affected by a proposed project, including land, air, water, minerals, flora, fauna, noise, objects of historic or aesthetic significance. Guidelines §21060.5.

The "project" is the whole of the action, not simply its constituent parts, which has the potential for resulting in either direct or reasonably foreseeable indirect physical change in the environment. Guidelines §15378. An indirect physical change must be considered if that change is a reasonably foreseeable impact which may be caused by the project. On the other hand, a change that is "speculative or unlikely to occur is not reasonably foreseeable." Guidelines §15064(d)(3). The term "project" may include several discretionary approvals by government agencies; it does not mean each separate government approval. Guidelines §15378(c).

An EIR must be prepared for a project if the agency concludes that "there is substantial evidence, in light of the whole record... that the project may have a significant effect on the environment." Pub. Res. Code §21080(d). The EIR is the "heart" of CEQA, providing agencies with in-depth review of projects with potentially significant environmental effects. Laurel

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Heights, *supra*, 6 Cal.4th at 1123. An EIR describes the project and its environmental setting, identifies the potential environmental impacts of the project, and identifies and analyzes mitigation measures and alternatives that may reduce significant environmental impacts. Id. Using the EIR's objective analysis, agencies "shall mitigate or avoid the significant effects on the environment... whenever it is feasible to do so. Pub. Res. Code §21002.1. The EIR serves to "demonstrate to an apprehensive citizenry that the agency has in fact analyzed and considered the ecological implications of its actions." No Oil, Inc. v. City of Los Angeles, (1974) 13 Cal.3d 68, 86. It is not required to be perfect, merely that it be a good faith effort at full disclosure. Kings County Farm Bureau v. City of Hanford, (1990) 221 Cal.App.3d 692, 711-12. A reviewing court passes only on its sufficiency as an informational document and not the correctness of its environmental conclusions. Laurel Heights, *supra*, 47 Cal.3d at 392.

All EIRs must cover the same general content. Guidelines §§ 15120-32. An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. The environmental effects need not be exhaustively reviewed, but the EIR's sufficiency is viewed in the light of what is reasonably feasible. Guidelines §15151. The level of specificity of an EIR is determined by the nature of the project and the "rule of reason." Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners, (1993) 18 Cal.App.4th 729, 741-42. The degree of specificity "will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." Guidelines §15146. The ultimate decision whether to approve a project is a nullity if based upon an EIR that does not provide decision-makers, and the public, with the information about the project required by CEQA. Santiago County Water District v. County of Orange, (1981) 118 Cal.App.3d 818, 829.

2. Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act ("Alquist-Priolo"), (Pub. Res. Code §2621 *et seq.*,) was enacted to prohibit the construction of buildings for human occupancy across the trace of active faults. California Oak Found. v. Regents of Univ. of California, (2010) 188 Cal.App.4th 227, 247; Better Alternatives for Neighborhoods v. Heyman, (1989) 212 Cal.App.3d 663, 670. Alquist-Priolo's purpose is in part to "provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults." Pub. Res. Code § 2621.5. It is also meant to "provide the citizens of the state with increased safety and to minimize the loss of life during and immediately following earthquakes by facilitating seismic retrofitting to strengthen buildings, including historical buildings, against ground shaking." Id.

Among other things, Alquist-Priolo requires the State Geologist to publish maps delineating appropriately wide earthquake fault zones, as well active and well-defined fault traces. Pub. Res. Code §2622(a). The State Geologist must "continually review new geologic and seismic data and... revise the earthquake fault zones or delineate additional earthquake fault zones when warranted by new information." Id., §2622(c). Prior to publication, the State Geologist revised maps must be submitted to the State Mining and Geology Board for review and comment. *See* id.; 14 CCR §3602(a).

3. LAMC and City Charter Provisions

a. Adoption of Land Use Ordinances

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Govt. Code section 65804(a) requires all city and county zoning agencies (including charter cities) to "develop and publish procedural rules for conduct of their hearings so that all interested parties shall have advance knowledge of procedures to be followed." Zoning agencies are required to create and preserve a record of their hearings, which must be made available (at a cost). Govt. Code §65804(b).

City Charter section 558 governs the adoption, amendment, and repeal of ordinances, orders and resolutions by the City Council which concern, among other things, land-use zones or districts, zoning or land-use regulations. City Charter §558(a).

LAMC section 12.32 governs the City's adoption of land use ordinances in accordance with Govt. Code section 65804 and City Charter section 558. The City Council, Planning Commission, or Director of Planning may initiate consideration of a proposed land use ordinance, the first two by a simple majority vote. LAMC §12.32(A). An owner of property may also apply for a land use ordinance for matters governed by subdivisions F through S. LAMC §12.32(B).

The Planning Commission is authorized to make an initial recommendation regarding the approval or disapproval of a proposed land use ordinance, which will then considered by the City Council. LAMC §12.32(C)(1). The City is required to provide at least 24 days' advance notice of the time, place and the public hearing on the proposed land use ordinance. LAMC §12.32(c)(4). Notice must either be in the form of publication, or in the form of mailings to owners within 500 feet of the affected property. Id. The applicant, if any, must also post notice in a conspicuous place at the affected property. Id.

Where the proposed land use ordinance concerns an amendment to zoning regulations, the Planning Commission is not required to comply with these strict notice requirements, nor must the matter be set for public hearing. *See* LAMC §12.32(E). Similarly, where the proposed land use ordinance involves a change in zone or height district, the Planning Commission may, without additional notice or hearing, recommend minor increases in affected areas or boundaries, provided that it determines that doing so is required by public necessity, convenience, general welfare or good zoning practice. LAMC §12.32(F)(1).

The Planning Commission hearing must be recorded or summarized. LAMC §12.32(C)(5)(a). If proceedings are recorded, the must be transcribed with copies made available to interested parties in exchange for a fee. Id. A copy of the transcript must be furnished to the Planning Commission and placed on file. Id. Additionally, after the hearing's conclusion, the Planning Commission's Director must submit a report setting forth his or her conclusions and recommendations, and the reasoning for them. LAMC §12.32(c)(5)(b).

Following the Planning Commission's decision to recommend approval or disapproval of a proposed land use ordinance, the City Council may approve or disapprove the ordinance. LAMC §12.32(c)(7). The City Council's decision must occur within 90 days of the recommendation. Id. If the proposed ordinance is approved by the City Council, it must make findings that its action is consistent with the General Plan and is in conformity with public necessity, convenience, general welfare and good zoning practice. Id.

The applicant may appeal the Planning Commission's recommendation to disapprove a proposed land use ordinance by filing an appeal with the City Clerk within 20 days of the decision. LAMC § 12.32(D)(1). If no appeal is filed, the Planning Commission's recommendation will be considered final. Id. At any time prior to the City Council's decision on the appeal, the Planning Department must submit any pertinent supplemental information that the City Council or its PLUM requests. LAMC §12.32(D)(2).

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b. Q Qualified Classification

LAMC section 12.32(G) provides a series of possible special zoning classifications, one of which is a "Q Qualified" classification. *See* LAMC §12.32(G)(2). Ordinarily, rezoning a property allows the occupant to maintain it for any use permitted by-right therein. *See, e.g.*, LAMC 12.14 (listing uses allowed by right in "C2" commercial zones). A Q Qualified classification allows the City Council to rezone a property to restrict its use from the full range of uses in that zone. *See* LAMC §12.32(G)(2)(a). The classification can also be used to impose certain standards (or conditions) on the intended redevelopment. Id. The express purpose of such classifications is to (1) protect a neighborhood's best interests and assure compatible development therein, (2) secure appropriate development in harmony with the objectives of the applicable General Plan, or (3) prevent or mitigate the potential environmental impact of a zone change. LAMC §12.32(G)(2)(a)(1)-(3).

Q Qualified classifications may be either permanent or temporary. *See* LAMC §12.32(G)(2)(a). If made on a temporary basis, the classification lasts for up to six years. *See* LAMC §12.32(G)(2)(b)(1), (f). Once a certificate of occupancy is issued for a development, the temporary Q Qualified classification becomes permanent. LAMC §12.32(G)(2)(e). Until that point, the six-year time limit can be extended if there is "substantial physical development" of the property for the classification's permitted uses. LAMC §12.32(G)(2)(f). Otherwise, the classification becomes null and void if the time limit expires. Id.

c. Variance Procedure

City Charter section 562 sets forth the minimum standards and procedures for the granting a zoning variance. All initial determinations on variances are made by the Zoning Administrator ("ZA"). Charter §562(a). ZA determinations are appealable to the appropriate Area Planning Commission, and then the City Planning Commission or City Council (as prescribed by ordinance). Charter §562(b). Even if an ordinance requires that the appeal be made to the City Planning Commission, the decision is nevertheless subject to the City Council's discretionary review pursuant to City Charter section 245. Id. In any event, variances may not be granted without the following findings being made:

(1) that the strict application of the provisions of the zoning ordinance would result in practical difficulties or unnecessary hardships inconsistent with the general purposes and intent of the zoning regulations;

(2) that there are special circumstances applicable to the subject property such as size, shape, topography, location or surroundings that do not apply generally to other property in the same zone and vicinity;

(3) that the variance is necessary for the preservation and enjoyment of a substantial property right or use generally possessed by other property in the same zone and vicinity but which, because of the special circumstances and practical difficulties or unnecessary hardships, is denied to the property in question;

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(4) that the granting of the variance will not be materially detrimental to the public welfare, or injurious to the property or improvements in the same zone or vicinity in which the property is located; and

(5) that the granting of the variance will not adversely affect any element of the General Plan. Charter §562(c).

LAMC section 12.27 generally implements City Charter section 562, and governs the adoption of ordinances. Consistent with Charter section 562(c), LAMC section 12.27(D) requires that the ZA make the same five findings in writing. The ZA's decision to approve or deny a variance is appealable to the appropriate Area Planning Commission, and then in turn to the City Council directly. *See* LAMC §12.27(G)-(O).

D. The Requests for Judicial Notice

Petitioners ask the court to judicially notice 13 documents (Exs. A-M). Exhibits B-M consist of LAMC and Charter provisions (Exs. B, I, J, K), court records from La Mirada, BS 138369 and South Central Farmers v. City of Los Angeles, BS117561 (Exs. E-G, L), a City Council action (Ex. H), and a State Attorney General opinion (Ex. M). These requests are unopposed and are granted. Ev. Code §452(b), (c), (d).

Exhibit A is a City printout from the City's Ethics Commission website showing payments made by Millenium to various entities. The joint Opposition argues that Exhibit A is not part of the Administrative Record, it is immaterial that Petitioners seek to add it via judicial notice rather than a motion to augment, and it should not be judicially noticed because it is irrelevant. The Opposition explains that the payments were made by Millenium to its lawyers, engineers and consultants working on this Project; they were not made to City officials. The payments were disclosed only because the City's broadly worded lobbying ordinance requires payments for providing advice or strategy to a client be disclosed as "lobbying activities." Opp. at 6-7. Petitioners respond that the payments are not offered under CEQA, but rather to show due process violations. Reply at 1.

Exhibit A is an official act subject to judicial notice. Ev. Code §452(c). It also is relevant to Petitioners' due process claim. The request is granted.

Exhibit C is a map released by CGS on November 6, 2014 depicting the location of Alquist-Priolo Earthquake Zones and Seismic Hazard Zones within the Hollywood Quadrange. Exhibit D is a Supplement to a Fault Investigation Report issued by CGS on November 5, 2014 to support its adoption of Exhibit C. CGS prepared Exhibits C and D to assist cities and counties in planning development. After the State adopts a map that delineates an Earthquake Fault Zone, the affected cities and counties regulated development within the Zone, including requiring the preparation of a geologic report discussing any hazard of surface fault rupture. Pub. Res. Code §2623(a).

The joint Opposition argues that the City did not have Exhibits C and D when it approved the Project, and they are irrelevant. In any event, the City treated the Project site as if it was within a Fault Zone. The mitigation conditions imposed on Millenium require it to conduct the same investigation and geologic report that would be required by placement in the Earthquake Fault Zone. Opp. at 8.

Petitioners contend that the City may have treated the Project Site as within an Earthquake Fault Zone, but that fact is insufficient for purposes of public information. The City

knew that CGS was studying the area, yet never changed the statements in the DEIR that the Project site was not in an Alquist-Priolo zone. The public should have been informed of this fact, and CGS's subsequent action reinforces that conclusion. Reply at 3.

Exhibits C and D did not exist at the time of approval, and they corroborate Petitioners' position. Nonetheless, they are inadmissible to challenge the City's approval of the FEIR and the Project entitlements. To the extent that Petitioners' CEQA challenge is quasi-legislative, extra-record evidence is completely inadmissible for the determination of whether the decision is supported by substantial evidence or the agency proceeded in the manner required by law. Western States Petroleum Assn. v. Superior Court, ((95) 9 Cal.4th 559, 573, 574-76. To the extent the challenge is quasi-adjudicative, the admission of extra-record evidence is governed by CCP section 1094.5(e). Petitioners do not discuss the requirements for the admission of extra-record evidence. The requests are denied.

In a "Second Supplemental Request for Judicial Notice" filed on April 14, 2015, Petitioners ask the court to judicially notice excerpts from an EIR dated November 2010 for the NBC/Universal Evolution Plan and the City Council's action approving and certifying the Plan (Ex. N). Petitioners argue that the excerpts are relevant to whether the Millenium FEIR adequately addressed cumulative impacts. Mot. at 2. While this may be true, Petitioners make no showing that the evidence was presented to the City before approval of the Project, or that the evidence meets the test for extra-record evidence. Petitioners also provide no reason why they waited to file the request with their reply, or give any indication that the evidence is properly responsive to a new issue raised by the Opposition. The City and Millenium have had no opportunity to object to the request, and it is denied.

The City and Real Party ask the court to judicially notice five documents (Exs A-E), including LAMC provisions (Exs. A, B, D), a Charter provision (Ex. E), and a court filing in La Mirada (Ex.C). The unopposed requests are granted. Ev. Code §452(b), (d).

E. Statement of Facts

1. The Project

The instant proceeding concerns a proposed 4.4 acre mix-use redevelopment project, spanning on two lots on the east and west sides of Vine Street south of Yucca in Hollywood ("Project"). AR 4211, 4215. The site is accessible from the Hollywood Freeway (US-101), with freeway on and off-ramps approximately one block north at Franklin and Vine, and Franklin and Argyle, respectively. AR 4217. In concept, the Project will include a mix of residential units, offices, a hotel, a health club, and retail spaces totally a developed floor area of approximately 1, 166,970 square feet, yielding a floor area ratio ("FAR") -- the total square footage of a building divided by the total square feet of the building's lot -- of 6:1. AR 4233.

2. Millennium's Initial Application

On August 18, 2008, Real Party Millennium filed a Master Land Use Permit Application with the City's Planning Department ("City Planning"). AR 21309-11. The Project was described as a mixed-use development consisting of approximately 492 residential units, a 200-unit luxury hotel, 100,000 feet of office space, an approximately 34,000 square foot sports club and spa, more than 11,000 square feet of commercial uses and approximately 34,000 square feet of food and beverage uses. AR 21321. The historic Capital Records Tower and Gogerty Buidling are located within the Project Site, and would be preserved as office and music recording buildings. Id. Thereafter, the City's Department of Building & Safety ("LADBS")

BS 150208

informed Millennium's attorney that the Project's enclosed balconies would render the building in excess of the maximum 6:1 FAR allowable under the City's General Plan, thus requiring a variance. AR 68250.

Millennium took time to review its plans and no further substantive progress occurred until 2011. *See* AR 68255-56.

3. The NOP and Caltrans' Concern

Millennium submitted another Master Land Use Permit Application with the City's Planning Department in April 2011. AR 10987-90. As part of its application, Millenium proposed (1) custom "Development Regulations" for the Project that would be incorporated in the Project approvals and contain standards for the Project's development that would prevail over zoning or land use regulations in the LAMC (AR 845-904, 853), and (2) a "Land Use Equivalency Program" ("LUEP") that would provide flexibility to Millenium to adjust the type and density of land uses for the Project, allowing Millennium to request and obtain a transfer of land uses before development of any Project phase so long as it stayed within the FAR and trip cap of 1498 new peak hour vehicle trips per day set forth in the EIR (AR 13789-90). AR 10987-90.

As the lead agency, the City issued a CEQA Notice of Preparation and Public Scoping Meeting for an EIR ("NOP") on April 28, 2011. AR 6225-31. The City's project description was for a maximum 1,166,970 square foot of floor space (6:1 FAR), preserving and maintaining the existing Capitol Records and Gogerty Building, a mix of residential, hotel, office, restaurant, health and fitness club, and retail uses, using the LUEP to provide development flexibility for future demands of the market and economy by allowing adjustment between land uses from several development scenarios, and Development Standards as embodied in a Development Agreement. AR 6226.

The Project would require entitlements of (1) a Development Agreement, (2) Vesting Tentative Tract Map ("VTTM") for the mixed use development, (3) zone change from C4 to C2, (4) height district change, (5) conditional use permit ("CUP") for alcohol and live entertainment, (6) Vesting CUP for hotel, (7) variance for sports club parking and for restaurants with outdoor eating areas above ground floor, (8) demolition and grading permits, (9) haul route approval, and (10) design review and approval to permit FAR above 4.5:1. AR 6227.

An Initial Study, also prepared on April 28, 2011, noted that the Project would develop a mix of land uses, including residential, luxury hotel, office, restaurant, health and fitness club, and retail. AR 30569. The LUEP would define a framework for permitted land uses and square footages which could be exchanged so long as the 1,166,970 square footage and 6:1 FAR were not exceeded and no additional environmental impacts occurred. Id. The Initial Study noted, *inter* alia, that the Project Site was not within a State-designated Alquist-Priolo Zone or other designated fault zone. However, a portion of the western portion of the Site is adjacent to the boundary of a City fault rupture study zone. The City zoning map (ZIMAS) shows the closest fault with a potential for rupture is the Santa Monica/Hollywood Fault which is 0.4 miles away. AR 30577. The Initial Study concluded that an EIR was required because the Project may have a significant environmental effect. AR 30570. The (now defunct) City of Los Angeles Community Redevelopment Agency ("CRA-LA"), South Coast Air Quality Management District ("SCAQMD") and Los Angeles Regional Water Quality Control Board ("LARWQCB") were designated as the "Responsible Agencies" under CEQA. AR 30569.

After the public scoping meeting was held, the California Department of Transportation ("Caltrans") expressed concern in a May 18, 2011 letter over the Project's traffic impact on the 101 Freeway. AR 31506. Caltrans had a specific concern about the possibility of vehicle queuing at the 101 Freeway on-ramps and off-ramps nearest to the Project. Id. Caltrans recommended that the City prepare a traffic study to determine whether the Project-related traffic, plus the cumulative traffic, would cause such issues. Id. Caltrans reminded the City that as a responsible agency under CEQA, it had the authority to determine the required freeway analysis for the Project and was responsible for off-setting Project vehicle trip generations that worsen the 101 Freeway. AR 31507. Caltrans noted that even the County's Congestion Management Plan ("CMP") standards provide that Caltrans should be consulted for the analysis of State facilities. AR 31507. Caltrans stated that trip generation, trip distribution, choice of travel mode, and assignments of trips to the 101 Freeway should be analyzed for all on/off ramps within five miles of the Project site, preferably using the Caltrans Traffic Impact Study Guide ("TISG"). AR 31506-07.

4. The DEIR

In October 2012, the City prepared a Draft Environmental Impact Report ("DEIR"). *See generally* AR 4082-5331. Per the DEIR, the Project was anticipated to encompass 492 residential units, 200 hotel units, 300 square feet of office, retail, restaurant, and fitness center/sports club space. AR 4234. The DEIR listed Caltrans as a responsible agency for its review of traffic impacts upon state highways and enforcement of any highway mitigation measures. AR 4260.

In analyzing potential traffic impacts, the DEIR applied the County's standard CMP methodology which requires that an EIR analyze traffic conditions at all CMP monitoring arterial intersections where the project would add 50 or more trips during the weekday peak hours, and at all mainline freeway monitoring locations where the project would add 150 or more trips during weekday peak hours. AR 4955, 4975. The DEIR analyzed 37 arterial intersections, including those directly adjacent to nearby 101 freeway ramps. AR 4927. The DEIR also studied cumulative traffic impacts applying both a 1% annual ambient growth factor for the Hollywood area and a list of 58 related projects. *See* AR 4317-20, 4980. The DEIR concluded that the Project would result in a less-than-significant impact in terms of trip generation, including trips using freeway segments. AR 4975.

The DEIR addressed the Project Site's subsurface geology, including seismic and fault rupture issues. AR 4589-602. The DEIR noted that the Project was not located within a designated Alquist-Priolo Earthquake Fault Zone. AR 4591. However, the Project's eastern portion was adjacent to the boundary of a fault rupture study zone included as part of the Safety Element of the City's 1996 General Plan. Id. The DEIR also noted that, according to CGS and ZIMAS, the closest earthquate fault with the potential for fault rupture was the Santa Monica Hollywood Fault (the "Hollywood Fault"), which was approximately 0.4 miles away. Id. The DEIR further included a Preliminary Geotechnical Study that analyzed subsurface borings performed on the property (*see* AR 8211-59), and seismic-geology mitigation measures, including a mitigation measure requiring substantial additional subsurface testing and monitoring prior to issuance of building or grading permits. AR 4136-37.

The DEIR addressed the Project's impact on fire protection services. AR 4804-24. The DEIR stated that response time relates directly to distance, and the preferred response time of the Los Angeles Fire Department ("LAFD") is to arrive at the scene of a call-out for all emergencies

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within five minutes 90% of the time. AR 4800. The DEIR acknowledged that a City Controller audit of LAFD in May 2012 concluded that there has been an increase in response times for medical first responders, but not the time standard for fires and non-medical incidents. The DFEIR stated that the Controller's audit was presented for informational purposes only, and relied on LAFD-supplied response times. AR 4800.

The DEIR noted that CEQA Guidelines, Appendix G, provides that a project could have a significant environmental impact if new government facilities are necessary in order to maintain acceptable response times for fire protection and the construction of the new facilities could cause significant environmental impacts. AR 4804. The City's CEQA Thresholds Guide also provides that, if a project requires the addition of a new fire station or expanded facility to maintain service, the determination of whether the new construction could cause a significant environmental impact will be determined through a case-by-case evaluation. AR 4804-05. The DEIR noted that the Project Site is only 0.7 miles from a LAFD fire station housing a truck company and 0.8 miles from a fire station housing an engine company. AR 4807. Both the truck and engine companies are within the 1.5 mile maximum response distance required by Fire Code section 57.09.06 and applicable response times. Average response times for those two stations are less than five minutes, and the environmental impact was deemed less than significant. AR 4808.

The DEIR was circulated for 45 days, with a public hearing being held on February 19, 2013. *See* AR 21084-85.

5. Millennium's Fault Investigation Report

Pursuant to LAMC section 17.05(U), Millenium prepared and the City approved a preliminary soils report. AR 29810-11; Opp. RJN Ex.A.

Because a 2010 CGS map showed the Hollywood Fault as active, and it "appears to exist in the vicinity of the subject site," the City required a fault investigation report pursuant to Los Angeles Building Code section 1803.5.11. *See* AR 29813.

A Fault Investigation Report dated November 30, 2012 ("Fault Report") was prepared by Millenium's consultant, Langan Engineering. AR 29864-79 (without exhibits). The Fault Report stated that the Hollywood fault is active and has the potential for rupture. According to CGS and the City's ZIMAS mapping system, the Hollywood fault is located approximately 0.4 miles from the Project Site. AR 29870. The Fault Report explained that, although the Project Site is not located in a current State or City-mandated fault investigation zone, the City required a fault investigation anyway since the Project Site is within 500 feet of the Hollywood fault trace as mapped by CGS. AR 29867. The Fault Report concluded that "active faulting is not present within the limits of our investigation within the Site...." AR 29875.

6. Caltrans' DEIR Comment Letter

In a December 10, 2012 letter, Caltrans expressed a series of "major concerns" with the DEIR's traffic analysis, referencing its May 18, 2011 letter in response to the NOP. AR 31785-88. Caltrans' primary concern was that the City's June 2012 Traffic Impact Study ("Traffic Study") for the DEIR did not follow the procedures outlined in the TISG, and did not analyze impacts to the state highway system. AR 31785. Specifically, the Traffic Study only applied the CMP criteria and failed to provide adequate information for direct traffic impacts to the 101 Freeway's mainline segments and ramps. AR 31786. Additionally, the DEIR and Traffic Study omitted a cumulative traffic analysis for the 101 Freeway which would consider the impact of 58

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related projects, the proposed NBC-Universal project, and anticipated growth from the Hollywood Community Plan. Id.

Caltrans also took issue with the DEIR's conclusion that the Project (without mitigation) would not generate significant trip generation impacts at CMP locations and on 101 Freeway segments. Caltrans asserted that this conclusion was "not based on any credible analysis that could be found anywhere in the DEIR." To the contrary, Caltrans opined that the Project would *significantly impact* the state highway system. Id. The Traffic Study's projected trip generation figures appeared to be "unreasonably low," and Caltrans requested that the City verify them. AR 31786-87. Particularly questionable was the Traffic Study's high number of trip-reduction credits. AR 31867.

The Traffic Study also did not include a series of nearby 101 Freeway on-ramps and off-ramps (*e.g.*, the Vine Street off-ramp), the inclusion of which was necessary to show projected queuing and upstream buildup, which is a safety issue. Id. In order prevent queuing and backup, City intersections adjacent to the Project needed to be able to adequately absorb increased off-ramp volumes at the same time as serving local circulation. *See* id. A Highway Capacity Manual ("HCM") weaving analysis also needed to be performed. Id.

In sum, Caltrans was "concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering" for the 101 Freeway, where the Level of Service (sometimes "LOS") is "F". AR 31867, 31786. If the City did not address these concerns, Caltrans refused to "recognize the [Traffic Study] and DEIR as adequately identifying and mitigating the project's impact to the State highway facilities." AR 31867.

7. The FEIR

The FEIR was published on February 8, 2013. The FEIR included over 500 pages of responses to comments. *See* AR 151-661.[3]

In response to Caltrans' comments, the City stated that it consulted Caltrans and considered its concerns. AR 181. The City disputed Caltrans' concern that it did not analyze the Project's impact on the state highway system. Id. The DEIR's Traffic Study analyzed "key freeway ramps" using the City's own "level of service" methodology, and of freeway mainline segments using the County's CMP-recommended methodology. Id. Caltrans' TSIG was consulted, but it did not provide thresholds of significance which CMP, a state-mandated program, did. Id. The City neither confirmed nor denied Caltrans' status as a CEQA responsible agency. *See* id.

As for freeway segment analyses, the City asserted that the Traffic Study concluded that Project impacts to the 101 Freeway would be less than significant so no further analysis was necessary. AR 181. Support for that conclusion was provided by the recently certified EIR for the Hollywood Community Plan Update ("HCPU"). Id.

The City added that it performed a supplemental traffic study using methodologies developed by the Southern California Association of Governments ("SCAG"). Id. The supplemental traffic analysis verified the City's initial conclusions that the Project will not result in the addition of 150 trips or more to any freeway segment, and therefore traffic impacts on the freeway system will be less than significant. Id.

[3] The City received only a few seismic comments that generally did not address the FEIR's sufficiency or methodology. AR 23892, 23995, 24019. *But* see AR 23924.

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With respect to Caltrans' criticism of the Traffic Study's failure to include a cumulative traffic analysis for the 101 Freeway -- including from the 58-related projects in the DFEIR, the NBC-Universal project, and Hollywood Community Plan growth -- the City did not directly address the proposed NBC-Universal project. *See* id. However, the City referred to its extensive transit system in the Project's vicinity, stating that the Project would provide "in-fill uses" that would reduce regional trip demand. Id. The City's reliance on transit solutions was also consistent with the City's traffic study guidelines and the HCPU's objectives. Id.

As for the on-ramp/off-ramp issues, the City responded that its own procedures were selected as the most appropriate for use in the Traffic Study, and the ramps chosen were where impacts were expected to be the most significant and substantial. AR 183. The ramps listed by Caltrans were not expected to be a capacity restraint issue. Instead, the signalized intersections and mainline 101 Freeway sections present the capacity restraints, and the queues from those constraints determine the ramp conditions. AR 184. The queuing issue will depend on under-signaling at the intersections. Id.

The City's trip generation estimates -- 19,486 trips per day with 1064/1888 trips during the AM/PM peak hours -- were based on well-accepted guidelines. AR 184. Additionally, it is a common practice to reduce trips for transit trips, pass-by trips, and internal trips associated with mixed-use projects. Id.

The City stood by its use of the critical movement analysis ("CMA") methodology for congestion modeling as per the City's Department of Transportation ("LADOT") manual instead of Caltrans' preferred HCM methodology. AR 186. The CMA is a planning methodology, whereas HCM is an operations methodology. Id. The HCM also assumes *constant signal timing*, which is problematic given that the City employs instantaneous, computer-controlled signaling, the timing of which varies depending on traffic. Id.

8. Caltrans' Supplemental Comment Letter

On February 13, 2013, Caltrans submitted a supplemental comment letter after reviewing the FEIR. AR 22840-44. Caltrans stood by its assertion that the City's use of the CMP methodology did not adequately study impacts to the freeway system. AR 22840. According to Caltrans, the City's Traffic Study analysis improperly focused on the Project's impact on the local CMP, rather than impacts to the existing state highway system, particularly for safety issues. AR 22840-41. The Traffic Study also did not provide sufficient traffic analysis for the reader to review its assumptions, analysis, and conclusions. AR 22841.

Caltrans asserted that the CMP does not capture the same data for analysis that the HCM does. AR 22841. For example, the CMP does not analyze off-ramps or freeway impacts with fewer than 150 trip assignments, even where the existing LOS is F. Id. It also uses a "flawed percentage ratio to determine the significance of impacts," and incorrectly analyzes cumulative traffic impacts. Id. Caltrans again faulted the City for failing to undertake a queuing analysis. Id.

After receiving no response from the City, Caltrans sent a fourth letter dated May 7, 2013 to then-Councilmember Eric Garcetti. *See* AR 11853-54. In the May 7 letter, Caltrans generally repeated its grievances about why it felt the FEIR was inadequate. *See* id.

9. The Initial Hearing on the Vesting Tentative Tract Map and FEIR

Under the Subdivision Map Act, Millenium processed a VTTM for a 41-lot subdivision of the property. On February 19, 2013, 11 days after the FEIR's release, an initial hearing was

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held by the City's Deputy Advisory Agency on the proposed VTTM and the FEIR. AR 21084-85. Although the parties do not cite to the decision, the DAA apparently approved the Project's VTTM and supporting FEIR.

10. The Planning Commission Hearing

On March 28, 2013, the Planning Commission heard the appeals from the Deputy Advisory Agency's approval of the VTTM and FEIR. AR 2. At the outset of the hearing, Deputy City Attorney Adrienne Khorasanee (the "City Attorney") announced that due to a financial conflict of interest by one of its commissioners, the Planning Commission was disqualified from considering approval of the Development Agreement for the Project. AR 74812. As a result, Millenium decided to withdraw the Development Agreement, which was removed from the agenda. AR 74812. The City Attorney advised the Planning Commission that it could nevertheless consider the other items concerning the Project. Id.

The Project opponents were given 30 minutes to speak at the Planning Commission hearing. *See* AR 74882. Petitioners' attorney, Daniel Wright, Esq., spoke on behalf of Mr. and Mrs. Jim Geoghan, who represented the neighborhood associations appealing the initial determination. *See* AR 74883-95. Mr. Wright argued that the commissioner's conflict of interest meant that the entire Planning Commission should be disqualified from the matter and that the hearing should be terminated. AR 74885-86. Mr. Wright also made a due process objection based on his belief that the exhibits he filed were neither accepted nor considered. AR 74886. Commissioner Perlman responded that the Planning Commission had received the exhibits, which were in the record, as was Mr. Wright's last minute two-page letter. AR 74886-87.

After the appellants spoke, several prepared statements were read by City representatives. *See* AR 74918-19. Next was a 90 minute public comment period, with time split evenly between supporters and opponents. See AR 74927.

At the conclusion of the hearing, the commissioners voted to deny the appeals from the approval of the VTTM and FEIR. AR 21149. Thereafter, the commissioners voted to adopt the Planning Commission staff's recommended actions, including approval of various CUPs, variances, and changes to the Development Regulations. *See* AR 4-7, 21149, 75168-72. The Planning Commission also voted to recommend that the City Council (1) adopt an ordinance authorizing the execution of a Development Agreement; (2) adopt a zone change and height district change; and (3) certify the FEIR and Statement of Overriding Considerations. Id.

11. The PLUM Hearing

On June 18, 2013, the matter was heard before the City Council's Planning and Land Use Management Committee ("PLUM"). AR 29-33, 75300-79. Petitioners' attorney, Robert Silverstein, Esq., spoke on behalf of appellant CURD. *See* AR 75178. He requested at least ten minutes to make his objections. AR 75177-78. The Chairperson responded; "Well, why don't you start, and let's see how far you get?" AR 75178. Mr. Silverstein offered a letter with 27 exhibits for PLUM's consideration. *See* AR 75178. In addition to arguing about the dangers posed by the Hollywood Fault (AR 75178-90,) Mr. Silverstein argued that the Planning

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Commissioner's disqualifying conflict of interest should have resulted in the withdrawal of all items concerning the Project. AR 75190-92.[4]

After a presentation by Millennium, the PLUM gave 20 minutes of general public comment to each side. AR 75224. Anne Geoghan, a member of CURD, was one of the speakers during this period. AR 75251-52. At the conclusion of the hearing, the PLUM voted to take all actions recommended by the staff report. *See* AR 29-33, 75295-97. The changes to the Development Regulations and Q conditions requested by Millennium and the Planning Department were adopted by reference. AR 31. Therefore, the PLUM implicitly denied the appeal. *See* id.

12. The State Geologist's Letter

On July 20, 2013, State Geologist John Parrish sent Councilmember Wesson a letter indicating that CGS was commencing a study of the Hollywood Fault, pursuant to Alquist-Priolo for possible zoning as "Active." AR 19063-64. The State Geologist mentioned the Project, which he stated may fall within an Earthquake Zone. Id. He advised that the study's outcome would provide the City with new information for its consideration of current and future developments along the Hollywood Fault, and indicated that the investigation and resultant maps were scheduled for completion by late 2013 or early 2014. Id.[5]

13. The City Council Hearing

The City Council's hearing for the Project took place on July 24, 2013. AR 105, 113-16. The day before the hearing, Millennium submitted a 311-page letter and supporting evidence responding to CURD's arguments and evidence on appeal. AR 19086-393.[6]

Mr. Silverstein again represented CURD and other Project appellants. See AR 75331. At the outset of the hearing, the Chairman gave ten minutes for each of the two appellants, ten minutes for the applicant, and ten minutes each for all supporters and opponents. AR 75301. Mr. Silverstein requested more time to make his case, but the Chairman refused to give him the other appellant's ten minutes. AR 75330-31.

Mr. Silverstein objected to Millenium's last-minute letter as an attempt to sneak in new studies and data, and a violation of due process. AR 75332-33. He addressed the letter written by the State Geologist on the Hollywood Fault issue, and argued that the Project Site is within an earthquake fault zone. AR 75336.

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[4] Prior to the PLUM hearing, Millennium sent a May 31, 2013 letter requesting a series of changes to the Q Conditions for approval and to the Development Regulations. *See* AR 18466-70. The City's Planning Department also made a recommended modification to Q Condition No. 2 and corrections to the Development Regulations. *See* AR 19038-42. These requested changes were not addressed by Mr. Silverstein at the PLUM hearing. *See* AR 75178-92.

[5] Petitioners attempt to present the results of this study showing that the Project is in fact within the Hollywood fault zone (RJN Exs C, D), but the court has denied this request.

[6] In a letter to the City Council dated the day of the hearing, LADBS noted the State Geologist's July 23, 2013 letter stating that investigation may show that the Project lies within an Earthquake Zone, and responded that LADBS already treats the Project Site as if it is located in an Earthquake Zone. It was for this reason that Millenium was required to prepare the Fault Report. AR 13791-92.

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A typed amending motion was announced as circulated by the City Clerk, which was unanimously approved by the City Council. AR 75301, 75378-79. The City Council then denied all appeals and approved the Project in full. AR 125, 133-37. Thus, the City Council: (1) certified the FEIR; (2) adopted the Statement of Overriding Considerations; and (3) granted a series of land use entitlements, including a vesting CUP for a hotel within 500 feet of a residential zone, a master CUP to sell an dispense alcohol for on and off-site consumption and live entertainment, zone variances for outdoor eating above the ground floor and to permit reduced parking for a sports club facility, reduced on-site parking, and the VTTM. *See* AR 11643 (Council Amending Motion), 125-50, (City Council Action).

The Project's vested land use entitlements include Ordinance No. 182636 (the "Ordinance"), which effectuates for the Project property a zone change from a C4 zone with a 3:1 FAR and no height limitation to a C2 zone with height limitation and 6:1 FAR. AR 11644-95. The Ordinance also includes the Development Regulations, (AR 18574-635) and the LUEP (AR 13789-90), which define and restrict the Project's mix of uses, design, height, scale, and massing, and any future change in the mix of uses. AR 13789, 18586. The Ordinance further contains a Mitigation Monitoring and Reporting Plan ("MMRP"), which contains all of the mitigation measures listed in the EIR. These entitlements and conditions thereto were recorded with the County Recorder's Office. *See* AR 11656.

14. Invalidation of the Hollywood Community Plan Update

On February 11, 2014, the Honorable Ann J. Jones rendered judgment in La Mirada, LASC Case No. BS 138580. *See* Pet. Pet. RJN Ex. F. Pursuant to the court's judgment, a peremptory writ of mandate was issued invalidating and setting aside the HPCU and the EIR certified for the HCPU. Id., p. 1. The La Mirada judgment also set aside and vacated the related approvals issued in furtherance of the HCPU. Id., pp. 1-2. The judgment stated that its provisions were not intended to order the City to rescind "those adjudicatory approvals not challenged which the City may have made under the HCPU after its adoption by the City." Id., p. 2.

The City accepted the La Mirada judgment without appeal, and it is now final. The original 1988 Hollywood Community Plan ("HCP") became operative again after the City rescinded the HCPU. *See* AR 24045.

F. Analysis

Petitioners argue that the City violated CEQA by (1) refusing Caltrans' direction as a responsible agency to study impacts to the 101 Freeway, (2) failing to notify and consult with CGS as an agency with jurisdiction, (3) failing to provide a fixed and stable Project description, (4) failing to advise the public of seismic issues, (5) failing to properly analyze traffic impacts, (6) failing to properly analyze fire/safety service impacts and (7) relying on the HCPU which was later set aside by the La Mirada judgment. In their non-CEQA claims, Petitioners argue that (1) the La Mirada judgment requires rescission of all HCPU-related approvals such as the Project, (2) the City's approval of the Development Regulations and elevation of them over all other LAMC provisions was illegal, and (3) the City Council's unfair hearings violated due process.

1. The City Was Required to Follow Caltrans' Preferred Traffic Study Methodology

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Caltrans contended that the City's traffic figures for the Project of 20,000 vehicle trips and 1064/1888 peak period AM/PM vehicle trips – which Caltrans described as low and not based on credible analysis (AR 11859) -- required a Traffic Impact Study using Caltrans' TISG. Concerned about queuing and upstream freeway buildup, Caltrans wanted a study of 101 Freeway on/off ramps near the Project. Caltrans also wanted a weaving analysis pursuant to its Highway Capacity Manual ("HCM"). Caltrans further stated that the FEIR omitted a cumulative traffic analysis for the 101 Freeway which included the NBC-Universal project, which was necessary whether or not the City was correct about only 150 additional trips generated. Thus, Caltrans concluded that the FEIR did not adequately analyze the Project's impact to the state highway system. Mot. at 6-8.

In response to Caltrans, the City relied on the traffic analysis required by the CMP, which is the standard methodology for traffic studies in the County, and analyzed key freeway ramps as well as freeway mainline segments, finding a less than significant traffic impact. A supplemental traffic study using SCAG methodologies confirmed this conclusion. The City did not expect the ramps listed by Caltrans to be a capacity restraint issue. The City contended that Caltrans' allegation about its low trip estimates was unwarranted as the estimates were based on well-accepted guidelines. Finally, the City preferred its congestion modeling to Caltrans' HCM methodology which is inapplicable to planning issues.

Thus, there was a clear dispute between the City and Caltrans over the adequacy of the FEIR's Traffic Study analysis for impacts to the 101 Freeway.

The lead agency under CEQA is the agency that carries out a project or has primary authority for approving a project. Pub. Res. Code 121067; Guidelines §15051. Where the project is local, such as land use decisions, the agency that has general governmental power over a project is almost always the lead agency. *See* Guidelines §15051(a).

If the lead agency determines that an EIR is required, it must send notice to each responsible agency. Pub. Res. Code §21080.4(a). A "responsible agency" means an agency which has some discretionary responsibility for carrying out or approving a project. Pub. Res. Code §21069; Guidelines §15381. Upon receipt of the notice, each responsible agency "shall specify to the lead agency the scope and content of the environmental information that is germane to the statutory responsibilities of that responsible agency...and which, pursuant to the requirements of this division, shall be included in the environmental impact report." Pub. Res. Code §21080.4(a); Guidelines §15082(b) (responsible agency shall provide detail about the scope and content of environmental information that "must be included in the draft EIR").

The lead agency shall include the responsible agency's information in the EIR. Guidelines §15096(b)(2). The lead agency may begin work on the draft EIR without waiting for responses, but the draft "may need to be revised or expanded to conform to" the responsible agency responses. Guidelines §15082(a)(4). *See* Save San Francisco Bay Association v. San Francisco Bay Conservation and Development Commission, (1992) 10 Cal.App.4th 908 (city as lead agency complied with its duty to produce comprehensive document which responsible agency could rely upon in its discretionary approval).

A responsible agency complies with CEQA by reaching its own conclusions on whether and how to approve the project. Guidelines §15096(a). The responsible agency consults with the lead agency and comments on draft EIRs for projects which the responsible agency would later be asked to approve. Guidelines §15096(b), (d). If the responsible agency deems the lead agency's final EIR to be inadequate for use by the responsible agency, it must either sue, be

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deemed to have waived objection, prepare a subsequent EIR if permissible, or assume the lead agency role. Guidelines §15096(e).

The City is the lead agency for the Project. If Caltrans is a responsible agency, then the City was required to include in the FEIR the information required by Caltrans. The joint Opposition argues otherwise, contending that Pub. Res. Code section 21080.4(a) and Guidelines section 15096(b)(2) provide only that the lead agency shall include "this information" in the EIR, and "this information" means the comments of responsible agencies. According to the Opposition, the City was not required to follow Caltrans' direction as a responsible agency if it included the comments in the FEIR. Opp. at 11.

This position is incorrect. As Petitioners argue (Reply at 7), Pub. Res. Code section 21080.4(a)'s plain language requires that the responsible agency "specify" to the lead agency the "scope and content of the environmental information" within the responsible agency's purview, and that is the information which "shall be included" in the EIR. There is no reason for the statute to use the word "specify" if a lead agency could ignore it. This conclusion is underscored by the remedies available to the responsible agency should the lead agency fails to follow the responsible agency's direction, which include a lawsuit, preparation of a subsequent EIR if permissible, or assumption of the lead agency role. Guidelines §15096(e). There would be no need for the responsible agency to have this list of remedies – particularly the remedy of taking over as lead agency -- if it only had a right to comment on a draft EIR. Thus, a lead agency fails to follow a responsible agency's direction at its own peril. *See* Remy, Thomas, Moose, & Manley, Guide to CEQA: California Environmental Quality Act, (11th ed. 2007) p. 45 ("[L]ead agencies *must* include in their EIRs information related to the environmental impacts that are anticipated by responsible agencies and trustee agencies as to matters within their expertise or jurisdiction.").[7]

The issue becomes whether Caltrans is a responsible agency under CEQA whose direction the City was required to follow for analysis of the Project's impact on the state freeway system. Petitioners argue that Caltrans is a responsible agency for the Project, pointing out that the City identified Caltrans as a responsible agency in the draft EIR. Mot. at 6. Specifically, the DEIR stated that Caltrans had authority to review traffic impacts on the 101 Freeway and enforce any Project mitigation measures. AR 4260.

The Opposition admits that the City treated Caltrans as a responsible agency, but contends that treatment does not make it so. The Opposition argues that the definition of a "responsible agency" requires that the agency have some discretionary responsibility for carrying out or approving a project, and Caltrans has no approval authority over the Project. *See* Pub. Res. Code §21069; Guidelines §15381. Even if Caltrans has a role in implementing mitigation measures for the Project, that does not make it a responsible agency. *See* Rominger v. County of Colusa, (2014) 229 Cal.App.4th 690, 700-01 (county's environmental review did not bar it from contending that the project was exempt from CEQA because court decides whether agency required with procedure required by law). Opp. at 11-12.

[7] The Opposition cites to Citizens for East Shore Parks v. State Lands Commission, (2011) 202 Cal.App. 4th 549, 567-68. Opp. at 11. That case holds only that a lead agency may rely on a responsible agency's failure to provide comments after receiving notice to mean that the responsible agency had no comments to make. It does not hold that a lead agency may ignore a responsible agency's direction.

Contrary to Petitioners' position (Pet. Reply for Supp. Mot. To Augment, pp. 5-7), the City is not judicially estopped from contending that Caltrans is not a responsible agency simply because it said so in the DEIR, or in a September 9, 2013 email from Deputy City Attorney Siegmund Shyu providing Petitioners with notice of the responsible agencies so that Petitioners could notify them about their lawsuit. *See* Pub. Res. Code §21167.6.5(b), (c). Judicial estoppel is an equitable doctrine that prevents "the use of intentional self-contradiction as a means of obtaining unfair advantage in a forum provided for suitors seeking justice." The primary purpose of the doctrine is not to protect the litigants, but to protect the integrity of the judiciary. Thomas v. Gordon, (2000) 85 Cal.App.4th 113 (citations omitted). The focus is on whether a party has taken totally inconsistent positions in judicial proceedings where the prior position was successfully asserted, and the inconsistency is not the result of ignorance, fraud or mistake. Aguilar v. Lerner, (2004) 32 Cal.4th 974, 986-97. The doctrine should apply when: (1) the same party has taken two positions; (2) the positions were taken in judicial or *quasi*-judicial administrative proceedings; (3) the party was successful in asserting the first position (i.e., the tribunal adopted the position or accepted it as true); (4) the two positions are totally inconsistent; and (5) the first position was not taken as a result of ignorance, fraud or mistake. International Engine Parts, Inc. v. Feddersen & Co. (1998) 64 Cal.App.4th 345, 350-351. The City was not "successful" in asserting that Caltrans is a responsible agency in the DFEIR or other documents, and judicial estoppel does not apply.[8]

Moreover, Caltrans does not become a responsible agency simply because it will enforce mitigation measures created by the City. *See* Lexington Hills Assn. v. State, (1988) 200 Cal.App.3d 415, 433 (issuance by Caltrans of "encroachment permits" was not integral to timber harvesting project, merely occurred during performance of mitigation measure, and Caltrans did not have authority or duty to approve project under CEQA). *Compare* Citizens Assn. for Sensible Development of Bishop Area v. County of Inyo, (1985) 172 Cal.App.3d 151, 174-75 (Caltrans was responsible agency because it must issue encroachment permit for construction of the project, and permit was discretionary because Caltrans can control the location and manner of encroachment).

However, there is more to Caltrans' involvement than mere enforcement of mitigations. Caltrans contended that it is a responsible agency for the Project, and the City agreed with that contention in the DFEIR through the outset of this lawsuit. This is not an issue of judicial estoppel or admission, but rather that the City agreed upon a legal framework which included Caltrans as a responsible agency for purposes of CEQA. The City cannot now deny Caltrans the role of responsible agency after extensive colloquy between the two agencies in which Caltrans played that very role. At some point in the CEQA process, the City becomes bound by the CEQA framework it adopts. *See* Genry v. City of Murrieta, (1995) 36 Cal.App.4th 1359, 1404-05 (city never considered whether to prepare supplemental EIR and consequently was bound by election to prepare only mitigated negative declaration). To conclude otherwise would impermissibly enable the City to manipulate the Project's design so as to avoid allocating discretionary decisions to Caltrans and its demands for freeway and on/off ramp traffic study.

[8] Nor does the City Attorney's September 9 email that Caltrans is a responsible agency constitute a judicial admission. Judicial admissions apply to facts, not conclusions of law. Stroud v. Tunzi, (2008) 160 Cal.App.4th 377, 384.

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Apart from the fact that the City is bound by the CEQA framework it adopted, Caltrans is a responsible agency because it does perform a discretionary function for the Project. Both the DEIR and the Project Conditions of Approval state that Caltrans and LADOT will jointly design and approve the mitigations measures for the intersection at Argyle/Franklin Avenue and the northbound onramp to the 101 Freeway. AR 4194-95, 11685; *see* AR 22879. This design feature makes Caltrans an agency with discretionary authority for approval of an integral part of the Project (design of an onramp mitigation measure), not just the implementation of mitigation measures. Caltrans is a responsible agency for the Project.[9] [10]

The Opposition contends that the City, as lead agency, was entitled to consider and reject criticism by Caltrans so long as its reasons are supported by substantial evidence. North Coast Rivers Alliance v. Marin Municipal Water District, (2013) 216 Cal.App.4th 614, 627, 642 (lead agency could reject other agency recommendations so long as lead agency decision was supported by substantial evidence). According to the Opposition, the City considered and fully responded to Caltrans' comments, including the preparation of a second traffic impact analysis using SCAG's traffic model. This second study is substantial evidence supporting the FEIR's conclusions. Unlike the City's threshold of 150 peak-hour trips in one direction, the SCAG analysis used a more conservative threshold of 150 trips during peak hours in both directions and it still found no significant impact on freeway segments. Opp. at 9-10.

The Opposition defends the City's use of CMP rather than the HCM level of service methodology preferred by Caltrans, which measures level of service based on travel speed and duration of congestion. AR 56127. The CMP chose a LOS methodology called Intersection Capacity Utilization ("ICU") due to the need for a consistent means of measuring congestion across the County. ICU has been determined to be consistent with HCM for this purpose, and CMP does not preclude the use of different methodologies for a purpose outside the CMP. AR 56127-28. The City did not use Caltrans' TISG because it does not include thresholds of significance, and the absence of significance thresholds is an appropriate basis to evaluate environmental impacts. *See* Sierra Club v. City of Orange, (2008) 163 Cal.App.4th 523, 541 (level of service standard used in EIR). Opp. at 10. The City also studied system constraints for freeway ramps by studying the immediately adjacent intersections to numerous 101 Freeway on/off ramps. The City used LADOT methodology for this purpose, and there is no evidence that this methodology was inaccurate. Id.

The City's choice of methodology did not comply with the substance of what Caltrans required, and the City was not free to ignore it. Even the CMP expressly states that Caltrans must be consulted to identify specific locations on the freeway system for analysis. AR 11863. The City relied on the CMP for thresholds of significance, but Caltrans told the City that the congested conditions of the 101 Freeway meant that even trips below the arbitrary CMP threshold of 150 could be significant and should be analyzed using its TISG. AR 11864. The CMP also states that at a minimum the geographic area examined in the traffic study must

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[9] Petitioners also argue that Caltrans has authority for enforcing a stormwater runoff management permit that protects water quality in Ballona Creek (AR 4284), but this enforcement authority does not make Caltrans a responsible agency for traffic impacts on the Project. *See* Reply at 2.

[10] The Opposition does not argue the scope of Caltrans' authority as responsible agency, and the court need not decide whether the traffic study sought by Caltrans is outside the scope of its discretionary authority.

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include mainline freeway monitoring locations where the project will add 150 or more trips, in either direction, during peak hours; it does not say that a 150 trip threshold is always sufficient. The City was not free to reject Caltrans' instruction about threshholds. *See* AR 56281. *See* Mejia v. City of Los Angeles, (2005) 130 Cal.App.4th 322, 342 ("A threshold of significance is not conclusive...and does not relieve a public agency of the duty to consider the evidence...."); Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners, ("Berkeley Keep Jets") (2001) 91 Cal.App.4th 1344, 1380-82 (agency insufficiently considered site-specific characteristics of noise from airport in favor of standard for threshold of significance). The CMP also states that it chose ICU over HCM solely out of need for a consistent means of measuring congestion across the County. AR 56127-28. This justification – the need for a consistent measure of traffic on County streets -- is irrelevant to the evaluation of freeway traffic congestion and safety. Under these circumstances, there was no reason for the City to cling to the County's CMP to conduct its traffic analysis. The City wrongly used the CMP and its 150 trip threshold in the face of Caltrans' criticism and direction to the contrary.

Caltrans also wanted the City to use its HCM methodology to address safety issues, including queuing on off-ramps between Vermont and Highland where vehicles could back up into intersections, as well as performing a weaving analysis. Caltrans further wanted a cumulative analysis of the 101 Freeway traffic impacts from the Project, the 58 related projects in the DFEIR, and the NBC-Universal project. A freeway has three types of segments: (1) a merge/diverge segment, whether a stream of traffic combines or divides, (2) a weave segment, in which traffic streams travelling in the same direction cross paths, and (3) a basic freeway segment. AR 73441. Caltrans' HCM addresses safety issues with respect to all three types of segments (AR 22841, 11290), whereas the CMP addresses only traffic congestion. AR 56114 (CMP tracks and analyzes regional transit performance), 31503 (CMP evaluates "demand-to-capacity" for freeway impacts). The CMP has only one monitoring station between downtown and Coldwater Canyon (AR 56210) which is incapable of evaluating queuing and weaving. The City did not perform the requested analyses, merely finding that the 101 Freeway was exempt because the CMP's 150 trip threshold had not been met.[11]

The FEIR fails to analyze traffic impacts to the 101 Freeway as Caltrans directed in its role as responsible agency. As Petitioners contend (Reply at 3-4), the City's disagreement with Caltrans is a failure to proceed in the manner required by law. The City was not entitled to disagree with Caltrans, perform a study more limited than sought by Caltrans, and then rely on substantial evidence of what it did. Rather, the City was obligated to provide the information and analysis which Caltrans specified as a responsible agency should be performed. Compliance with the requirements of CEQA is "scrupulously enforced.' Citizens of Goleta Valley v. Board of Supervisors, (1990) 52 Cal.3d 553, 564.

2. The FEIR's Assessment of Traffic Impacts Was Inadequate

Apart from its failure to follow Caltrans' direction for methodology and 101 Freeway impacts analysis, the City did not adequately analysis traffic impacts. As stated *ante*, the City relied on the CMP to conclude that the Project would not generate more than 150 additional trips

[11] Finally, the Opposition contends that Caltrans waived its objections to the FEIR when it failed to file suit under Guidelines §15096(e). Opp. at 12. True, but Petitioners did not waive their right to assert the City's failure. *See* Citizens for Open Government v. City of Lodik, (2006) 144 Cal.App.4th 865, 875.

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per day for the 101 Freeway, and this was not a significant traffic impact. AR 182. The FEIR also concluded that the freeway ramps, including the meters and weave sections on the ramps, are not the limiting factor for the roadway in the Hollywood area. AR 184.

The FEIR's mere conclusion that the ramps -- and the weaving sections on the ramps -- are not a limiting factor in Hollywood is not substantial evidence. Caltrans pointed out that ramp queuing can lead to safety issues and "without a queuing analysis neither Caltrans nor the City can determine whether traffic from the off-ramps will back up, creating an unsafe condition. AR 22843. Similarly, without a weaving analysis for both the northbound and southbound mainline segments between the nearby on/off ramps the difficulty of drivers in maneuvering could not be assessed. AR 22844. The City's only response was that its standard CMA analysis did not require these analyses. AR 186. This response did not meet CEQA's requirement of a good faith reasoned analysis in response to comment. *See* Berkely Keep Jets, *supra*, 91 Cal.App.4th at 1367; Guidelines §15151. The omission of a freeway weaving and queuing analysis was an abuse of discretion.

When Caltrans contended that the 101 Freeway's mainline segments should be analyzed, the City responded that its CMP analysis showed a less than significant 150 Freeway trips per day, and no further analysis was necessary. AR 181-82, 31791. As discussed *ante*, the use of a threshold of 150 daily trips failed to recognize Caltrans' concern that the greater the congestion, the lower the threshold of traffic needed to create an impact. AR 22848. According to Caltrans' TISG, fewer than 50 trips may have a significant impact on a freeway which operates at LOS E or F, and a full traffic study or some lesser analysis is required in that situation. AR 55811. *See* AR 22848. The 101 Freeway operates at level of service F during peak hours and the City's 150 trip threshold does not take into account this congested LOS. The additional traffic volume of 150 vehicles on the freeway is particularly important in light of weaving, queuing, and diverging movements, issues which Petitioners' consultant said can be addressed by Caltrans' HCM and not CMP. AR 11290. The City did not have substantial evidence to support its mainline freeway segment analysis.

The FEIR also did not perform an analysis of the Project's cumulative traffic impact with other projects on the ramps and mainline. Caltrans noted that the 58 projects identified in the FEIR will also add peak hour trips to the 101 Freeway, and a cumulative impact analysis was required. AR 22848. The City's sole response for not doing so was that the direct impact on the Freeway of the Project's 150 trips per day was not significant. AR 181-82. But, as Petitioners point out (Mot. at 24), this response misses the point of a cumulative impacts analysis which is to evaluate the cumulative impact of projects whose incremental impact is small. Environmental damage often occurs incrementally from a variety of small sources, and the assessment of a project's cumulative impact on the environment is a critical feature of the EIR. Los Angeles Unified School District v. City of Los Angeles, (1997) 58 Cal.App.4th 1019, 1025. Understated cumulative impacts analysis impedes meaningful public discussion and skews the decision-maker's perspective. Citizens to Preserve the Ojai v. County of Ventura, (1994) 27 Cal.App.4th 713, 729-35.

The Opposition argues that the FEIR did perform a cumulative impacts analysis because the Guidelines expressly permit a cumulative impacts discussion through a list of projects producing related impacts or a summary of projections from an adopted general plan or planning document. The Opposition contends (Opp. at 12-13) that the City conservatively did both, using a 1% growth factor (AR 2732) and discussing 58 related projects within 1.5 mile radius. AR 2733-39.

There are several problems with the Opposition's argument. First, the FEIR did not conservatively wear a belt and suspenders as the Opposition implies. The Guidelines provide that as part of the cumulative impacts analysis the EIR may provide a list of "past, present, and future project producing related or cumulative impacts," or "a summary of projections contained in an adopted general plan or related planning document...." Guidelines §15130(b)(1). The FEIR listed 58 related existing projects for cumulative impacts analysis, and then used a growth factor of 1% to cover future unknown projects. AR 4980. Thus, the two did not overlap. Second, the 1% growth figure is not a projection in an adopted general plan or planning document; LADOT created it out of whole cloth. *See* id. This is not permissible under Guidelines section 15130(b)(1).[12] Third, the FEIR did not use the projections for a reasonable discussion of cumulative traffic impacts. *See* Guidelines §15130(b)(5).

The FEIR also did not include the NBC-Universal project in its list of related projects, even though Caltrans expressly noted that the NBC-Universal project itself will add traffic to the 101 Freeway. AR 22848. The City's sole response was that the CMP did not show more than 150 trips generated by the Project, which was below the threshold of significance. AR 181-82. This *non-sequitur* is woefully inadequate to constitute a good faith reasoned response to comment. *See* Berkely Keep Jets, *supra*, 91 Cal.App.4th at 1367.

The Opposition now argues that the FEIR was not required to include NBC-Universal as it is located 3.5 miles away from the Project, outside the 1.5 mile radius designated by the City. AR 2733. Opp. at 13.

Other projects must be included in an EIR's cumulative impacts analysis if it is "reasonable and practical" to do so. San Franciscans for Reasonable Growth v. City and County of San Francisco, (1984) 151 Cal.App.3d 61, 77. The agency may draw a geographical line for its cumulative impacts analysis if it provides a reasonable explanation for doing so. *See* Guidelines §15130(b)(3). The City provided no justification for its arbitrary 1.5 mile radius that excludes a major project from cumulative impact analysis. There appears to be no legitimate reason why the large NBC-Universal project should not have been included in a cumulative impacts analysis.[13] Exclusion of the NBC-Universal project solely because it is 3.5 miles away is unreasonable where it apparently is quite large and lies directly downstream from the Millennium Project with few on/off ramps in between.

The FEIR did not have substantial evidence to support its cumulative impacts analysis. The FEIR's traffic impacts analysis was inadequate and an abuse of discretion.

3. The City Was Not Required to Notify and Consult with CGS Prior to Circulating the DEIR

The lead agency "shall consult with, and obtain comments from, each responsible agency, trustee agency, any public agency that has jurisdiction by law with respect to the project...." Pub. Res. Code §21153(a).

Petitioners argue that CGS is a commenting agency under CEQA. Despite knowing that there was a real prospect that the Hollywood Fault crossed Project Site, the City did not notify

[12] The DFEIR stated that the summary of projections was validated by the HCPU, but the HCPU was invalided in La Mirada and cannot be relied upon. *See* AR 2732.

[13] Petitioners are, of course, correct in arguing that the mitigations proposed in the FEIR to alleviate traffic congestion are no substitute for analysis of the traffic impacts from the Project. *See* AR 182. Mot. at 26.

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the Department of Conservation or its CGS as either a responsible agency or an agency that has jurisdiction over the Project. The State Geologist is required to delineate active earthquake fault zones, which are identified on maps. Pub. Res. Code §§ 2621.5(b), 2622. The CGS's 2010 Fault Activity map showed the Hollywood Fault across the Project site. AR 49493. The City knew seven months before the DEIR was circulated that a Hollywood Fault trace mapped by the CGS might cross the Project Site. AR 68319. When a State Geologist found out that the City Council was considering the Project, he called to express concern and wrote to explain that CGS was mapping the Hollywood Fault and its maps and reports would be completed by year-end 2013 or early 2014. AR 68408, 11885. Yet, CGS was not named as a responsible agency. Mot. at 9.

CGS is not a responsible agency because it has no discretionary authority to approve or carry out the Project. *See* Guidelines §15831. Nor is it a trustee agency over natural resources held in trust for the People. *See* Guidelines §15386. Although Petitioners principally contend that CGS is an agency with jurisdiction by law for the Project, CGS in fact has no jurisdiction over the Project. CGS has no permitting or approval authority for the Project. Instead, CGS has jurisdiction over a fact that is relevant to the Project – the investigation and mapping of earthquake zones. But jurisdiction over a relevant fact does not make CGS an agency which must be notified under CEQA. To hold otherwise would, as the Opposition points out, give CGS jurisdiction over every project in the State. Opp. at 21.

Nor do Petitioners point to any specific prejudice from the City's failure to notify CGS. The agency's environmental decision must be set aside only if the manner in which the agency failed to follow the law is prejudicial. Sierra Club v. State Board of Forestry, (1994) 7 Cal.4th 1215, 1236. While the failure to give notice to a responsible or trustee agency is presumed to be prejudicial, if a department appears at the hearing and voices no concerns there would be no prejudice. Fall River Wild Trout Foundation v. County of Shasta, (1999) 70 Cal.App.4th 482, 492. In this case, CGS did not appear at the City Council hearing, but its State Geologist did explain that CGS' forthcoming determination of the Hollywood Fault could bear on the Project. It is not clear what more CGS would have said.

The City was not required to give notice to CGS.

4. The Ambiguity of the FEIR's Project Description

a. Governing Law

The EIR must describe the project, including (a) a map of the project's precise location and boundaries, (b) a statement of objections sought by the proposed project (c) a general description of its technical, economic, and environmental characteristics, (d) a statement of the intended uses of the EIR. Guidelines §15124.

Only the four listed items are mandatory. California Oak Foundation v. Regents of the University of California, ("California Oak") (2010) 188 Cal.App.4th 227, 269-70. The project description should not "supply extensive detail beyond that needed for evaluation and review of the [project's] environmental impact." Guidelines 15124; California Oak, *supra*, 188 Cal.App.4th at 269-70. The critical inquiry is whether the EIR' s project description "contains sufficient detail to permit reasonable and meaningful environmental review...." California Oak, *supra*, at 272. CEQA also does not require the project description to properly assess environmental impacts -- only generally to describe the project's own environmental characteristics. *See* Dray Creek Citizens v. County of Tulare, ("Dray Creek") (1999) 70 Cal.App. 4th 20, 28 ("general" means only the main features and not details or particulars).

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An accurate, stable, and consistent project description is the *sina qua non* of an informative and legally sufficient EIR." County of Inyo v. City of Los Angeles, (1977) 71 Cal.App.3d 185, 193. A shifting project description may confuse the public and agency decision-makers, vitiating the EIR's usefulness as a vehicle for intelligent public participation. County of Inyo, *supra*, 71 Cal.App.3d at 197. The description should be sufficiently detailed to provide a foundation for a complete analysis of environmental impacts. Id. at 192-3. The description should include all project components. *See* Santiago County Water District v. County of Orange, (1981) 118 Cal.App.3d 818, 829-30 (EIR for mining operation should have included extension of waterlines to serve the mine). It must apprise the parties of the true scope of the project. *See* San Joaquin Raptor/Wildlife Rescue Center v. County of Stanislaus, (1994) 27 Cal.App.4th 713, 731-32 (EIR's project description failed to include sewer expansion which the EIR acknowledged would be required as part of the development); San Joaquin Raptor Rescue Center v. County of Merced, (2007) 149 Cal.App.4th 645, 672-83 (EIR's project description of a mining expansion project was inadequate because it inconsistently stated that no increase in mine production was being sought, yet also stated that the real party would be permitted to increase production).

An "EIR cannot be faulted for not providing detail that, due to the nature of the project, simply does not now exist.. .Nor have the courts required resolution of all hypothetical details prior to approval of an EIR." Citizens for a Sustainable Treasure Island v. City and County of San Francisco, ("Treasure Island") (2014) 227 Cal.App.4th 1036, 1054.

In Treasure Island, the court rejected claims that the EIR for the redevelopment of a former Naval base in the San Francisco Bay lacked sufficient detail about the project and should have been a program EIR, not a project-level EIR. 227 Cal.App.4th at 1043. The project description was for a mixed-use community with up to 8,000 residential units, 140,000 square feet of commercial and retail space, 100,000 square feet of office space, 500 hotel rooms, 300 acres of parks, playground and open space, and a school. The construction and build out would be phased over a 20-year period. Id. at 1044. The court noted that the level of detail required for an EIR is driven by the nature of the project and what is reasonably feasible; an EIR on a construction project will necessarily be more detailed in the specifics of the project than adoption of a local general plan. Id. at 1051 (citing Guidelines §15146).

The court held that the project description was accurate and stable, and not merely a "conceptual land use map" as argued by the petitioners. The EIR made an extensive effort to provide meaningful information about the project while providing flexibility to deal with changing conditions affecting final design over a 20 year period. Id. at 1053. The project provided for new zoning that identified permitted uses and development standards within each district and also a set of binding design standards that included both fixed elements, such as street layouts, and conceptual elements, such as shapes of new buildings or specific landscape designs. Id. The court noted that many project features necessarily would be subject to future revision and quite likely would be the subjects of supplemental environmental review before the final project design was implemented. Id. at 1054. The petitioners claimed that "because the EIR does not anticipate every permutation or analyze every possibility, the project description is misleading, inaccurate and vague." Id. The court rejected this claim, finding that the basic characteristics of the project remained, accurate, stable, and finite throughout the EIR process.

Id. at 1055. As an informational document, the project description provided sufficient information for the public and reviewing agencies to evaluate the project's environmental impacts and also provided the required "main features" of the project. Id.

b. The Project Description

The City's FEIR is modeled after the EIR in Treasure Island. The Project Description states that the Project is for a mix of land uses, including "some combination" of residential units, hotel rooms, offices, restaurants, a health and fitness club, and retail. AR 4082. The DEIR describes a LUEP that would provide flexibility to Millenium to adjust the type and density of land uses for the Project, allowing Millennium to request and obtain a transfer of land uses before development of any Project phase so long as it stays within the FAR and trip cap of 1498 new peak hour vehicle trips per day stated in the EIR (AR 13789-90). AR 10987-90.

The DEIR provides for Development Regulations for the Project that are incorporated in the Project approvals with contain standards for the Project's development that would prevail over zoning or land use regulations in the LAMC. AR 845-904, 853. The Development Regulations require that final Project design meet mandatory standards for building heights (AR 859), towers (AR 879), density (FAR) (AR 858), building massing (AR 861), grade level (AR 875), storefronts (AR 877), yards (AR 873), open space (AR 884-86), street walls (871), passageways (AR 887-89), landscaping (AR 892-94), lighting (AR 895-96), parking (AR 897-98), bicycle parking (AR 899-900), and signage (AR 901). Conceptual design drawings depict maximum allowed development envelopes. AR 863-70.

The DEIR identifies three potential development scenarios: the Concept Plan, a Commercial Scenario, and a Residential Scenario. The Concept Plan represents one possible scenario in which Millennium would build approximately 492 residential units (700,000 square feet of floor area), 200 luxury hotel rooms (167,870 square feet), 215,000 square feet of office space (including the existing 114,303 square-foot Capitol Records), 34,000 square feet of food and beverage use, 35,100 square feet of fitness center/sports club, and 15,000 square feet of retail. AR 4106.

The Commercial Scenario describes the most environmental impactful development scenario possible for those resource areas where commercial uses dictate the severity of impacts: air quality, greenhouse gases, noise, water demand, wastewater flow, energy demand, police and fire services, and traffic. AR 4237. The Residential Scenario describes the most impactful development scenario possible for those resource areas where residential uses dictate the severity of impacts: population and housing, schools, parks, libraries, parking, and solid waste generation. AR 4238-39. The DEIR uses these two scenarios in determining the maximum environmental impacts in each area. The total amount of specific development – residential, hotel, office, retail/food and beverage, and fitness center/sports club -- may increase or decrease as long as long as the maximum impacts in each issue area are not exceeded and the total 6:1 FAR is not exceeded. AR 4239-41. *See also* Opp. at 26-27.

c. Merits

Petitioners contend that the Project Description is neither stable nor finite because the actual mix of features for the Project Site is unknown, precluding an accurate identification and analysis of all environmental impacts from the Project actually built. Mot. at 10-11. Petitioners

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describe the Project as an "amorphous envelope" of development parameters limited by a set of maximum environmental impacts. Nothing in CEQA permits the substitution of an impacts envelope for an actual project description, and a Project that does not provide an actual project but only "illustrative scenarios" pushes the flexibility permitted by CEQA for project descriptions beyond reasonable. Reply at 11-12.

The court agrees. An EIR should be prepared with sufficient information for the public and decision-makers to make an intelligent decision taking into account environmental consequences. The EIR's sufficiency depends on what is reasonably feasible. Guidelines §15151. The level of specificity of an EIR is determined by the nature of the project and the "rule of reason." Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners, (1993) 18 Cal.App.4th 729, 741-42. That degree of specificity "will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." Guidelines §15146. The ultimate decision whether to approve a project is a nullity if based upon an EIR that does not provide decision-makers, and the public, with the information about the project required by CEQA. Santiago County Water District v. County of Orange, ("Santiago County Water") (1981) 118 Cal.App.3d 818, 829.

The degree of specificity required in an EIR will correspond to the degree of specificity in the underlying project. Guidelines §15146. A construction project will necessarily have a more detailed EIR than that for a general plan or zoning ordinance because the effects of a construction project can be predicted with greater accuracy. Guidelines §15146(a). The use of new zoning that identifies permitted uses and also a set of binding design standards that includes both fixed elements and conceptual elements, such as shapes of new buildings or specific landscape designs, is permissible where necessary. Treasure Island. But an EIR serves both an informative and substantive purpose, and a developer must present an accurate and stable picture of the project so that the public and decision-makers can decide whether its environmental consequences are outweighed by its public benefits. City of Santee v. County of San Diego, (1989) 214 Cal.App.3d 1438, 1454.

The FEIR provides a blurred view of the Project, not the definite and stable view required under CEQA. The LUEP, Development Regulations, and Q Condition No. 1 collectively approve an envelope of potential residential, commercial, retail, and office projects which will not have more than a maximum design mass and height and that will create no more than maximum levels of air pollution and traffic impacts. CEQA requires the project description to describe the project's characteristics so that its environmental impacts may be assessed. Dray Creek, *supra*, 70 Cal.App. 4th at 28. Analyzing a set of environmental impact limits instead of analyzing the environmental impacts for a defined project is not consistent with CEQA, which demands that "the defined project and not some different project must be the EIR's bona fide subject." Burbank-Glendale-Pasadena Airport Authority v. Hensler, (1991) 233 Cal.App.3d 577, 592.

There are times when a project description setting forth only a project's physical parameters and setting out maximum permissible environmental impacts can be reasonable – most particularly where other conditions make specificity impossible. Thus, in Treasure Island, the developer had plans to build over a 20-year period a large-scale development on an island. The island was contaminated by hazardous material which required cleanup, and the developer

could not be sure when the island would be available for development. The Treasure Island court expressly cited Guidelines section 15146 for the proposition that the specificity required depends on the underlying project, and concluded that the existing conditions and long-term nature of the project prevented disclosure of detail that does not now exist. 227 Cal.App.4th at 1054. The court permitted an EIR based on new zoning that identified permitted uses and development standards that included both fixed elements, such as street layouts, and conceptual elements, such as shapes of new buildings or specific landscape designs. The court described the EIR as making an extensive effort to provide meaningful information about the project while providing flexibility. The court further noted that many of the project's features would be likely subjects of supplemental review before a final design was implemented. Id.

These circumstances have no application to Millennium's Project. There is no 20-year build out of a site containing hazardous substances or other external variables that makes the nature and timing of development unknown and unknowable. Nor is there any planned supplemental environmental review for the Project. Where a construction project is not limited by external conditions that create great uncertainty, there is no reason for a project developer not to be specific about project details. The public and decision-makers should know whether the project will contain any housing, any retail, any commercial, any restaurant, any health club, and if so, how much. They should also know whether it will have multiple tall buildings and the building footprint, all for purposes of environmental analysis. *See* Guidelines §15146(a).

The Millennium FEIR does not rely on an external condition -- such as a hazardous cleanup or a long-term development plan with many unknown variables outside Millennium's control -- to provide an ambiguous Project Description. Nor does the FEIR justify the ambiguity by anticipating further environmental review upon final Project design. Instead, the Opposition's sole excuse for not providing a clear and unambiguous Project Description are the "changing conditions and unforeseen events" that could possibly impact the Project. Opp. at 25. While CEQA does not require a project to be defined down to the last detail, Millennium's uncertainty about market conditions or the timing of its build-out is an insufficient ground for the ambiguous and blurred Project Description. The public and decision-makers for the Project are entitled to know what the Project will look like after Millennium makes that decision so that the Project's description can form the foundation of the environmental analysis. The EIR's project description must provide sufficient information about the project for the public and reviewing agencies to evaluate the project's environmental impacts. Treasure Island, *supra*, 227 Cal.App.4th at 1055. An EIR that does not provide decision-makers, and the public, with adequate information about the project fails as an informational document. Santiago County Water, *supra*, 118 Cal.App.3d at 829

Additionally, the Project essentially defers a portion of the environmental impacts analysis. The environmental assessment of the defined project must be performed at the earliest possible stage, and certainly in the EIR. *See* Sundstrom v. County of Mendicino, (1988) 202 Cal.App.3d 296, 306-08. As Petitioners argue, when a project faces uncertainty over several specific project alternatives, the EIR typically evaluates the environmental impacts of each specific project alternative. Deferred environmental evaluation generally is permitted only for mitigation measures, and even there only where obtaining more detailed useful information on the topic is meaningfully impossible at the time of the EIR, and the information is not of

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overriding importance to determining whether to proceed with the project. Riverwatch v County of San Diego, (1999) 76 Cal.App.4th 1428, 1448 (deferral of precise detail of mitigation measure dependent on yet-to-be performed Caltrans study did not undermine EIR's conclusion that the impact could be mitigated).

Although the FEIR limits the Project to a maximum environmental impact in each issue area, it does not explain how it will be determined that the maximum impacts will not be exceeded when the Project is finally designed and built. The LUEP permits Millennium to obtain a transfer or change of uses within the Project, and the Planning Director may approve that request if the submission reasonably demonstrates that the change is consistent with the trip cap and does not exceed the maximum environmental impacts identified in the EIR. AR 13789. But how will the Planning Director make that determination for changing the Project and using what criteria?[14] Since no additional CEQA review will be required to ensure that a change sought by Millennium is within maximum environmental issue limits, and no public input will be permitted, the FEIR essentially defers the environmental assessment of the Project and substantively fails to ensure that the finally designed Project will not be approved without all necessary mitigations of environmental harm.

Petitioners admit that a LUEP may be acceptable where it permits a developer to choose among specifically defined scenarios, each of which is fully analyzed in the EIR, the Millennium LUEP makes this impossible. Petitioners give an example of the FEIR's reliance on a reduction in traffic because some residents will enjoy Project facilities internally and defer making a trip outside (AR 4939-41, 3263-64), but there is no assurance that the facilities will be constructed in a manner that would result in the anticipated internal trip captures. *See* AR 31600. Petitioners provide a second example that the driveway locations are merely hypothetical since the Development Regulations permit "parking, open space, and related development" to be located anywhere within the Project Site. AR 858. As a consequence, traffic analysis of driveway locations and their impact is impossible. Mot. at 12.

The Opposition tries to rebut Petitioners' argument that the driveway locations are merely hypothetical, noting that the FEIR provides that the driveways specifically will be located along Ivar and Vine and placed pursuant to LADOT standards. AR 2724-25. The Opposition argues that the traffic study contains the specificity to assess traffic impacts of these locations. Opp. at 27. This fact does not undermine Petitioners' point that the driveway locations are subject to change.[15]

The CEQA process is intended to provide the fullest information reasonably available on which the decision-makers and the public can rely in determining whether to start a project.

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[14] Although Petitioners raised this issue (Mot. at 11, n.6), the Opposition does not address it.

[15] The Opposition also contends that Petitioners are mistaken about internal trip captures. The FEIR addresses trip capture and "pass-by" trip reductions based on the most traffic-intensive development scenario, meaning that fewer trips will be permitted than otherwise. The FEIR translates use-specific trip generation into general trip generation rates based on any use. Regardless of the final design, these general rates will apply to ensure the total trips remain below the cap. Opp. at 27-28. Petitioners do not reply to this confusing point.

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Natural Resources Defense Council v. City of Los Angeles, (2002) 103 Cal .App.4th 268, 271. An EIR furnishes both the road map and the environmental price tag for the project so that the decision maker and the public both know how much they and the environment will have to give up in order to take that journey. Id. By approving an EIR with an ambiguous Project description which defers some portion of the environmental analysis, the City failed to act in accordance with law. CEQA's informational and substantive requirements have been violated and the EIR and the entitlements it purports to support must therefore be vacated.

d. The Q Condition

Petitioners argue that the Project's Q Condition of Approval No. 1 provides Millennium even more latitude to redesign and reconfigure the development than yielded by the ambiguous Project Description.

Q Condition No. 1 provides:

> "The use of the subject property shall be limited to those uses permitted in the Land Use Equivalency Program, attached as Exhibit D **or** as permitted in the C2 Zone as defined in Section 12.16.A of the LAMC." AR 11651 (Emphasis added.)

Petitioners argue that, on its face, Q Condition No. 1 permits Millennium to choose from any of the long list of land uses expressly permitted in the C2 zone. None of these uses or their environmental impacts were disclosed and analyzed in the FEIR, and none had appropriate mitigation imposed. Petitioners specifically objected to this Q Condition on the grounds that Q Conditions are supposed to restrict uses on a project beyond those required by a particular zoning law and were created to address the situation where a developer obtains a zoning change and then switch plans to build a project also authorized by that zone. Yet, Q Condition No. 1 expands Millennium's right to develop for uses that have not been disclosed. AR 11168-69. Mot.at 13.

The Opposition explains that the Project's central entitlement is the Ordinance, which rezoned the property from C4 to C2 commercial – a zone change that was necessary for the health club -- and imposed the Development Regulations. The Project is governed by the Development Regulations and the LUEP, both of which are incorporated into the Ordinance. The Q Conditions, which are zoning provisions enacted through the Ordinance, were added to restrict Millennium's use of the property within the C2 zone. *See* LAMC §12.32.G(2)(a). Opp. at 29.

The Opposition acknowledges the plain language of Q Condition No. 1, but argues that the City's intent in imposing Q Condition No. 1 was not to permit any use listed in the C2 zone. Instead, the LUEP defines the uses which Millennium is permitted to develop, if otherwise permitted on the C2 zone. Those uses must stay within the identified environmental maximum impacts and the Development Standards and Millenium's compliance will be verified and enforced by City Planning. Q Condition No. 1 must be read as a whole with the LUEP use restrictions and environmental impact caps (the LUEP is incorporated into Condition No. 1), and the requirements of the Development Regulations. Opp. at 29-31. Under familiar principles of statutory construction, Q Condition No. 1 must be interpreted with the LUEP and the

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Development Regulations to "impose use and development limitations on the Project." Opp. at 32.

The construction of ordinances is subject to the same standards applied to the judicial review of statutory enactments. Department of Health Services of County of Los Angeles v. Civil Service Commission, (1993) 17 Cal.App.4th 487, 494. In construing a legislative enactment, a court must ascertain the intent of the legislative body which enacted it so as to effectuate the purpose of the law. Brown v. Kelly Broadcasting Co., (1989) 48 Cal.3d 711, 724; Orange County Employees Assn. v. County of Orange, ("Orange County") (1991) 234 Cal.App.3d 833, 841. The court first looks to the language of the statute, attempting to give effect to the usual, ordinary import of the language. Brown v. Kelly Broadcasting Co., (1989) 48 Cal 3d 711, 724. Significance, if possible, is attributed to every word, phrase, sentence and part of an act in pursuance of the legislative purpose. Orange County, *supra*, 234 Cal.App.3d at 841. The various parts of a statute must be harmonized by considering each particular clause or section in the context of the statutory framework as a whole. Lungren v. Deukmejian, (1988) 45 Cal.3d 727, 735. If a statute is ambiguous, the construction given it by the agency charged with its enforcement is entitled to consideration if such construction has a reasonable basis. Ontario Community Foundations, Inc. v. State Bd. of Equalization, (1984) 35 Cal.3d 811, 816.

In effect, the Opposition contends that the language of Q Condition No. 1 should be interpreted to limit the uses of the property to those uses permitted by the LUEP **and** by C2 zone. If a use is not permitted by both, Millennium may not put the property to that use. The problem with the Opposition's interpretation is that it runs contrary to the plain meaning of the word "or" in Q Condition No. 1, which in context means "either A or B". There is no ambiguity on which the court can rely to justify the City's interpretation.

Even if *arguendo* Condition No. 1, the LUEP, and the Development Standards collectively constitute a statutory scheme which should be collectively harmonized, that harmonization is easily done. Q Condition No. 1 addresses property use. The Development Standards concern building design, and do not address the use to which the property is placed. The LUEP contains use limitations, but Condition No. 1 places those use limitations in the alternative with uses in the C2 zone. Thus, the three elements are easily harmonized.

Petitioners objected to the language of Q Condition No. 1, and the City ignored their objection. The court cannot rewrite the Q Condition No. 1 now. It means what it says, and it provides Millennium greater latitude to redesign and reconfigure the Project in areas that have not been subjected to environmental analysis. This is a failure to act in accordance with the requirements of law.

5. Seismic Review

a. Petitioners' Argument

Petitioners acknowledge that the FEIR adequately analyzed seismic issues, and argue that the City failed to disclose pertinent environmental information, failing to meet CEQA's mandate that the public be equally informed as the agency. *See* Laurel Heights, *supra*, 47 Cal.3d at 404. Mot. at 14; Reply at 18.

Petitioners point out that the Hollywood Fault is considered active, and therefore a potential hazard for catastrophic rupture. Petitioners' consulting geologists identified, and the 2010 CGS Map showed, the Hollywood Fault crossing through both sides of the Project Site.

EXHIBIT 2

AR 11542-43; RL 33497-98. Although the City's ZIMAS mapping did not show the Hollywood Fault as crossing the Project Site, LADBS staff noted that a City geologist met with Millennium and discussed the fact that the Fault potentially crossed the property. AR 68257. In recommending a Fault Report, the City geologist stated that the Hollywood Fault "appears to exist in the vicinity of the subject site." AR 65566-68.

The City's Initial Study noted the potential of a significant impact from rupture of a known earthquake fault, and stated that the EIR will provide additional analysis. AR 680-81. A November 2011 report was prepared as a technical appendix to the EIR (AR 29824), but was never included in the FEIR. The report claimed that the Project Site is not located in a Fault Rupture Study Area ("FRSA"), and site-specific fault studies were not performed or required. AR 29829. But Petitioners contend that Exhibit 4 to the November 2011 report shows the Project's eastern portion crossing through the red footprint of the FRSA. Wright Decl., Ex.1.

Petitioners note that in March 2012 LADBS acknowledged the need for a limited fault investigation based on a CGS Hollywood Fault trace map. AR 29988. LADBS and Millennium representatives agreed that this limited investigation would include only the Project's western portion, not the eastern portion identified in Exhibit 4, and would be deferred until the buildings were designed. RL 6677-78.

The Planning Department reviewed a proposed DEIR which did not have the November 2011 report, and instead included a May 2012 report prepared by Millennium's expert. The May 2012 report was identical to the November 2011 report except that Figure 4 now showed the entire Project Site outside the FRSA boundary and a bolded sentence was deleted. AR 1385. Petitioners conclude that the May 2012 report was deliberately rigged to avoid disclosure of the Project Site within the FRSA. Mot. at 18.

The May 2012 report was attached as a technical appendix to the DFEIR which was released by City Planning staff on October 25, 2012 without waiting for, or without knowing about, the limited Fault Report that Millennium's expert was preparing. As a result, the DFEIR stated that the Hollywood Fault was 0.4 miles away from the Project Site and included little seismic analysis.

Not until the November 2012 Fault Report did Millennium or the City change its position. The Fault Report repeated the statement that the Hollywood Fault was 0.4 miles away, but acknowledged that the City had required a limited investigation because the 2010 CGS map showed the Hollywood Fault to be within 500 feet of the Project Site. The Fault Report was never included in the FEIR and never released to the public. Although the City's information potentially showed that the Project Site crosses the Hollywood Fault, the FEIR does not disclose or discuss the 2010 CGS Map. Mot. at 15. The City should have recirculated the DEIR with the Fault Report because it constituted significant new information. Pub. Res. Code §21005(a); Guidelines §§ 15088.5, 15144.

Petitioners conclude that the failure to ensure that the public knew about the seismic issue was an abuse of discretion and the DFEIR's reliance on Figure 4 to show the Project as outside the FRSA was clearly erroneous. Mot. at 19-20.

b. Merits

The Opposition seeks to debunk Petitioners' conspiracy theory that the City and Millennium worked to suppress the fact that the Project is located in a state-designated fault zone and in a City-designated FRSA. Opp. at 18-20.

EXHIBIT 5

Even if the Opposition does not successfully do so, the court agrees that no further disclosure about the location of the Project Site's proximity to the Hollywood Fault was required. Petitioner's theory of non-disclosure is based upon (1) the FEIR's failure to include the Fault Report, which stated that the Hollywood Fault was 0.4 miles away from the Project Site, but acknowledged that the 2010 CGS map showed the Hollywood Fault to be within 500 feet, and (2) the fact that the May 2012 report, which was included in the DEIR, attached a Figure 4 which showed the entire Project Site outside the FRSA boundary and deleted a bolded sentence.

Figure 4, the 2010 CGS map on which Petitioners rely to show the Hollywood Fault traversing the Project Site, is not a reliable document. *Compare* Wright Decl., Ex.1 *and* AR 1385. First, it is not an official CGS fault map. The 2010 map is a "Fault Activity Map" prepared for CGS's 150th anniversary and expressly states that it is "not intended to replace or supersede the Official Maps of Earthquake Fault Zones -- the location of fault traces shown should not be substituted for site-specific fault rupture investigations[.]" AR 49493. Second, a cursory review of the 2010 CGS map reveals that it is a low-resolution, non-scalable, map of the entire state of California. Id. It is not something anyone can rely upon to show fault boundaries.[16]

As for the contention that the May 2012 report was deliberately rigged to avoid disclosure that the Project Site was within the FRSA, the Opposition contends that the exhibit in the May 2012 report differs from that in the November 2011 report only because of a cut and paste from a graphic in the City's 1996 Safety Element. AR 47303. Opp. at 20. Whether or not the accusation of a doctored exhibit is true, it is irrelevant. The Initial Study clearly states that the Project Site is adjacent to, but not within, a City-designated FRSA. The DEIR said that the Hollywood Fault is 0.4 miles away. AR 4591, 4595. A not-to-scale exhibit showing differently is immaterial. AR 680.

Petitioners nonetheless contend that the May 2012 report attached to the DEIR is misleading because at all times the public was told that the Hollywood Fault trace was 0.4 miles away when LADBS actually regarded it as within 500 feet. If LADBS required a fault investigation because of the 2010 CGS map, the public was entitled to know about this same information. The Fault Report continued the City's position that the Hollywood Fault was 0.4 miles away from the Project Site, but at least acknowledged that the 2010 CGS map showed the Hollywood Fault to be within 500 feet. This should have been disclosed. Mot. at 19.

The Opposition argues that the Fault Report was prepared by Millennium's consultant for purposes of the VTTM under LAMC section 17.05U. LADBS acted with care by requiring a limited fault investigation despite the fact that the Project Site was not in a fault zone or FRSA, and did so because the Hollywood fault trace was less than 500 feet away. AR 29876. The Fault Report concluded that "active faulting is not present within the limits of our investigation within the Site...." AR 29875. The Fault Report was approved by LADBS for purposes of the VTTM. AR 29810-11. Opp. at 15-16.

As Petitioners reply, the VTTM process cannot be separated from the CEQA process, and the City's approval of the VTTM by itself required CEQA compliance. Pub. Res. Code

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[16] Although the court has declined to judicially notice Petitioners' Exhibits C and D, which purport to show the Project Site within the Hollywood Fault, the Opposition correctly argues that if CGS released for the first time in November 2014 a map showing the Project Site in the Hollywood Fault Zone, how is it possible that CGS's 2010 map already placed the Project in a fault zone? Opp. at 19.

§21080(a); Govt. Code §66474.01. CEQA is essentially an environmental full disclosure statute and the City cannot silo information about seismic issues from the EIR. See Rural Landowners Assn. v. City Council, (1983) 143 Cal.App.3d 1013, 1020. Reply at 15-16.

Nonetheless, the FEIR adequately addressed seismic issues. The Opposition shows, and Petitioners do not dispute, that the City treated the Project as if it were in an earthquake zone. The DEIR included an adequate discussion of potential impacts from fault rupture (AR 4589-4602) and a 48-page Preliminary Geotechnical Engineering study which showed no evidence of faulting. AR 8212-59. Despite the fact that the Hollywood Fault was only proximate, the City adopted mitigation measures to ensure seismic safety, including construction of the Project in accordance with seismic standards and a requirement for final geotechnical engineering report prior to issuance of building or grading permits. *See* Oakland Heritage Alliance v. City of Oakland, (2011) 195 Cal.App.4th 884, 904 (upholding similar mitigation measures); California Oak, *supra*, 188 Cal.App.4th at 264 (upholding EIR for project in earthquake zone that required further testing before development of site).

Nothing in the Fault Report supports Petitioners' argument that it should have been included in the FEIR. As the Opposition argues, the DEIR already contained a May 2012 preliminary geotechnical study prepared by Millennium's expert claiming that the Project Site is not located in a FRSA, and that site-specific fault studies were not required. AR 29829. The Fault Report concluded that active faulting is not present at the Project Site, and this conclusion is consistent with the May 2012 report. The City treated the Site as if it was in a FRSA, and the FEIR contained a discussion of seismic issues, a preliminary geotechnical report, and mitigation measures. It did not have to include the Fault Report prepared for LADBS and the VTTM showing no active faulting. *See* California Oak, *supra*, 188 Cal.App.4th at 265 (seismic study prepared for compliance with Alquist-Priolo was not required to be included in EIR).

Petitioners argue that case law supports the exclusion of a particular document from the record where the discussion of an environmental impact is present in the EIR, but not where a crucial area of environmental impact has been omitted. Reply at 18.

Perhaps so, but the FEIR did not omit a crucial area of environmental impact. The City performed the proper environmental analysis, consistently stating that the Hollywood Fault was 0.4 miles away. The mere fact that the Fault Report acknowledged that the City required a limited investigation because the 2010 CGS map showed the Hollywood Fault to be within 500 feet of the Project Site, not 0.4 miles (2112 feet), does not mean the FEIR fails as an informational document. As the Opposition contends, the 2010 CGS map is unreliable and unofficial. The City required the Fault Report in order to be cautious and treat the Project Site as if it were in a FRSA, and the Fault Report confirmed a lack of active faulting. The mere fact that the FEIR did not disclose the reason why the City required a Fault Report is insufficient to cause the FEIR to fail as an informational document.

Because the Fault Report did not contain significant new information showing new or substantially more severe impacts, recirculation was not required. *See* Guidelines §15088.5(a).[17] Recirculation is not required where the new information merely clarifies or amplifies information

[17] Petitioners argue that the Opposition does not cite to any finding or evidence that recirculation is not required, but they bear the burden of showing that it was. *See* Mot. at 19.

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in the EIR. Guidelines §15088.5(b). *See* Treasure Island, *supra*, 227 Cal.App.4th at 1063-64 (court must defer to decision not to circulate where it is supported by substantial evidence).[18]

6. Fire and Protective Services

Petitioners contend that the FEIR relied on inaccurate data concerning the Project's impacts on fire safety and services. The FEIR acknowledged that under CEQA Guidelines Appendix G a significant environmental impact occurs where a project causes substantial adverse physical impacts associated with new or improved government facilities in order to maintain acceptable service rations, response times, or other performance objectives for fire protection. AR 4804. The Millennium Project's impacts would be significant "if the project requires the addition of a new fire station or the expansion, consolidation, or relocation of an existing facility to maintain service." AR 4805. The FEIR concluded that the Project would not require the addition or expansion of a fire station to maintain service, and therefore no significant impacts on this issue area. AR 4806.

LAFD's preferred response time threshold for emergencies is five minutes or better 90% of the time. AR 4800. The FEIR noted that Fire Station 27, which houses a truck company, is 0.7 miles from the Project Site and Fire Station 82, which houses an engine company, is 0.8 miles from the Project Site. AR 4807. Consistent with Fire Code section 57.09.06, this proximity was sufficient to meet the response time requirement. Additionally, the average response times for Fire Stations 27 and 82 are less than five minutes based on data supplied by LAFD for July 5, 2011-December 14, 2011. AR 4807-08.

Petitioners criticize this conclusion as repudiated by another City official. The City Controller's May 2012 audit revealed that over 1/3 of the 1.9 million reported emergency incidents either coded unclearly as either emergency or non-emergency at the discretion of dispatchers. Therefore, the audit was unable to verify that LAFD had met its 90% goal for emergency response times. Pet. Mot. to Augment, Ex. 2. The DEIR acknowledged the Controller's audit, mentioning it "for information purposes only." AR 4800. LAFD subsequently stated that its prior reporting data should not be relied upon until properly recalculated and verified. AR 11187. Consequently, Petitioners argue that the City wrongly relied on the inaccurate data. Reply at 20.

Petitioners ignore the proximity of Fire Stations 27 and 82 to the Project Site. Fire Code section 57.09.07 requires response distances in compliance with Table 9-C, which in turn permits a maximum response distance of 1 ½ miles for engine and truck companies in high density resident and commercial neighborhoods. Fire Stations 27 and 82 are within those distances. The FEIR also noted five other stations nearby, the Project would generate revenue that could be applied to new fire facilities, emergency access would be adequate, and LAFD has experience navigating these streets. AR 313, 4808. Under these circumstances, the Controller's audit discrediting LAFD community-wide response time data does not undermine the FEIR's

[18] The City Council clearly understood that LADBS treated the Project as if it was in an earthquake zone, and the City Council approved an amending motion which imposed a condition of a comprehensive geotechnical report prior to issuance of any grading or building permit. AR 13791-92, 11643.

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conclusion that response times to the Project area will meet the standard of five minutes or less 90% of the time.[19]

It is also true, as the Opposition argues and Petitioners admit, that Appendix G only requires analysis of whether new or modified facilities will be required, not response times.[20] The City concluded that no new facility will be required. AR 4806. Its decision that there is no significant impact from this environmental issue is supported by substantial evidence.

7. The Invalidated Hollywood Community Plan Update

a. The FEIR's Reliance on the HCPU

The HCPU governed the Project Site at the time of the City Council's approval. Like the City's other community plans, the HCPU was an integral part of the General Plan, and formed the General Plan's state law-mandated land use element for the Project area. Govt. Code §§ 65300, 65302(a). The City thus had to make, and did make, findings in the DEIR that the Project was consistent with the HCPU. AR 4689-4700. The FEIR's mitigations also relied on the HCPU.

Following the City Council's approval of the Project, the superior court in La Mirada invalidated the entire HCPU. Pet. RJN, Ex. G. The City elected not to appeal the decision, and rescinded its adoption of the HCPU. Pet. RJN, Ex. H. Since consistency with a general plan or one of its elements is required for any portion of local government land use, the absence of a valid general plan or its valid relevant elements precludes enactment of actions, including approval of entitlements. Neighborhood Action Group v. County of Calaveras, (1984) 156 Cal.App.3d 1176, 1184.

Petitioners argue that the City's land use consistency findings for the Project collapsed when the HCPU was invalidated and rescinded. Mot. at 29-30. The HCPU promoted high-intensity, mixed use development near transit stops, and had goals and policies custom-tailored for the Project. Because the Project approvals cannot be consistent with an invalid HCPU, the Project approvals are null and void. Mot. at 31.

This argument may be dealt with summarily. The FEIR acknowledged that the HCPU was subject to legal challenge, and therefore it analyzed the Project's consistency with both the HCPU and the original 1988 Hollywood Community Plan ("1988 HCP"), which became operative after the City rescinded the HCPU. *See* AR 24045, 24069-70. The Land Use Planning Section of the DEIR clearly states that the Project does not depend on the HCPU. AR 28213-78. This section provides the separate, parallel consistency analysis for both the 1988 HCP and the HCPU. Table 1V.G-3, analyzes the Project's consistency with the 1988 HCP. AR 28248. Table 1V.G-4 then analyzes the Project's consistency with the HCPU. AR 28249-60. The DEIR concludes that the Project is "consistent with the goal and policies of the 1988 Community Plan and the Community Plan Update and thus would not result in conflicts with local plans and policies." AR 28260. Because the Project is consistent with both plans, the FEIR finds land use consistency impacts to be less-than-significant under either plan. AR 28273.

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[19] Petitioners also argue that the FEIR's response time analysis does not include the additional 19,000 daily trips generated by the Project. Mot. at 28. Not so. This issue was addressed in the FEIR's discussion of cumulative impacts of increased residents, households, and employees on fire protection services in the Project area. AR 4813.

[20] Petitioners state that the issue of whether emergency response times are themselves an impact which must be assessed is currently before the California Supreme Court. Reply at 19.

EXHIBIT 5

A city council's determination that the project is consistent with its general plan carries a strong presumption of regularity. Sequoyah Hills Homeowners Assn. v. City of Oakland, (1993) 23 Cal. App. 4th 704, 717. The foregoing evidence satisfies CEQA's land use consistency requirement and state law.

Moreover, the court agrees with the Opposition (Opp. at 36) that Petitioners waived their land use consistency argument by failing to discuss the FEIR's reliance on the 1988 HCP. When a petitioner challenges an administrative decision as unsupported by substantial evidence, it is the petitioner's burden to demonstrate that the record does not contain sufficient evidence to support the agency's decision. State Water Resources Control Board Cases, (2006) 136 Cal.App.4th 674, 749. A recitation of only the part of the evidence that supports the petitioner's position is not the "demonstration" contemplated by this rule. If a petitioner contends that some issue of fact is not sustained, the failure to set forth in his brief all the material evidence on the point and note merely his own evidence constitutes a waiver. Id. (quoting Foreman & Clark Corp. v. Fallon, (1971) 3 Cal.3d 875, 881.

Petitioners have not met their heavy burden of proving that the City's land use consistency findings for HCP were arbitrary and capricious.

b. Compliance with the La Mirada Judgment

Petitioners further argue that the La Mirada judgment required the City to rescind not only all actions approving the HCPU, but also "all related approvals issued in furtherance of the HCPU", with the exception of "adjudicatory approvals not challenged which the City may have made under the HCPU after its adoption by the City." Pet. RJN, Ex. G. Petitioners contend that this final judgment and supporting writ created a mandatory duty to rescind all approvals for development projects in the Hollywood planning area that were made while the HCPU was in effect, except where no lawsuit was filed against the project. According to Petitioners, the Millennium Project is within the scope of the La Mirada judgment and writ and the City has a mandatory duty to rescind its approvals. Mot. at 31-32.

This argument requires interpretation of the La Mirada judgment. The rules for interpreting a court order or judgment are the same as in ascertaining the meaning of any other writing. Dow v. Lassen Irrigation Co. , (2013) 216 Cal.App.4th 766, 780; Los Angeles Local Board of Culinary Workers, etc. v. Stan's Drive-Ins, Inc., (1955) 136 Cal.App.2d 89, 94. Individual clauses or provisions are not considered separately but rather the entire document must be considered on its four corners and construed as a whole to effectuate its intentions. Id.

The Opposition is most certainly correct that the Project approvals are not "related approvals" under the La Mirada judgment. That judgment expressly states that related approvals "refers only to those quasi-legislative actions necessary to carry out the HCPU...." Pet. RJN, Ex. G (Emphasis added.) The Project approvals are independent of, and not necessary to carry out, the HCPU. The La Mirada judgment gives examples of what related approvals are, including the HCPU text and maps, the Resolution amending the 1988 HCP, the actions necessary to effect the HCPU, amendments to the General Plan made to reflect changes in the HCPU, and CEQA findings for the PCPU. The Project is not a related approval, and Petitioners are simply wrong arguing that any project that relied upon the HCPU is a related approval. Reply at 20-21.

Petitioners have not met their burden to show that the City is obligated to rescind the land use consistency findings as related approvals under La Mirada.

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8. Violation of the City Charter

Petitioners argue that the Development Regulations and Q Conditions are an unlawful blanket variance and/or an improper delegation of the City's police power. The Sixth Cause of Action alleges that the City granted variances for the Project without making the legally mandated findings under Charter section 562 and LAMC section 12.27(D), and the Seventh Cause of Action contends that the City has unconstitutionally impaired its police powers. Petitioners allege that the City is attempting to elevate the Development Regulations into the position of a municipal ordinance, per LAMC section 12.04 and 12.32, in irreconcilable conflict with Charter section 562. Id., ¶181. In doing so, the City is attempting to override other LAMC provisions. Id., ¶182. The LUEP and development regulations are a grant of carte blanche authority which is *ultra vires* and *void ab initio* because they amount to the City unconstitutionally surrendering its police power to regulate land use. Id., ¶183.

Petitioners present a history in which the City created the Development Regulations and LUEP to be adopted in conjunction with the Development Agreement. AR 4105-06. The Development Regulations would prevail over zoning or land use regulations in the LAMC. AR 4105, 18581. At the Planning Commission hearing, Millennium withdrew the Development Agreement when it was determined that the Commission would be disqualified from hearing it. AR 74811-12.[21] Instead of using the Development Agreement, the City claimed it had the authority to impose the Development Regulations and LUEP as Q Conditions of Approval. AR 74826. *See* LAMC §12.32(G).

Petitioner CURD then submitted evidence to the PLUM on appeal that Q Conditions authorized under LAMC section 12.32(G) must restrict a project, not increase a developer's rights to use property. AR 11169-1172. Implicitly accepting this argument, the City substituted the draft Ordinance for the original ordinance adopted by the Planning Commission. AR 11949-952. The draft Ordinance purported to enact the Development Regulations as Exhibit C. *See* AR 11644-95.

According to Petitioners, the substitution of the Ordinance for the original ordinance was accomplished through the creation of a false PLUM recommendation report that claimed PLUM had voted to recommend substituting the Ordinance for the original ordinance. This report recommended that the City Council "7. PRESENT and ADOPT the accompanying NEW ORDINANCE.... 8. NOT PRESENT and ORDER FILED the Ordinance approved by the [Planning Commission] on March 28, 2013." AR 11950. No such event ever happened, as reflected by the transcript of the PLUM hearing and the two documents approved by the PLUM. *See* AR 75174-299, 18466-470, 19738-42. The PLUM, or the City Clerk, created a false public record in violation of Charter section 281(c). CURD objected to this false record prior to the City Council hearing. AR 11731. Mot. at 35.

Petitioners argue that the Charter is the City's constitution and Charter section 562 protects the rights of residents by mandating that any variance from strict application of the zoning code proceed through a zoning administrator, who must make five affirmative findings. The City's attempt to enshrine the Development Regulations -- whether as the withdrawn Development Agreement, an *ultra vires* Q Condition, or a frantic enactment of City ordinance through a false public record -- cannot override Charter section 562 and is a void effort to grant

[21] The parties dispute whether the conflict was due to a conflict of interest by Planning Commission President William Roschen as a paid consultant to Millennium and that a City ethics investigation led to his rapid resignation. *Compare* Mot. at 34 *with* Opp. at 34, n.16.

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undisclosed variances. *See* Trancas Property Owners Assn. v. City of Malibu, (2006_ 138 Cal.App.4th 172, 181-82 (contract exempting development from zoning law is unenforceable as violation of public policy). Mot. at 35-36. The City cannot adopt a Q Condition that is more permissive than that permitted in the City's zoning code. LAMC section 12.32(G) authorizes the City to approve projects and restrict the land uses to those specified in the Q Condition, not expand a developer's right to override the zoning code. Mot. at 36.[22] Additionally, the combined effect of the Ordinance and the agreement signed by Millennium to make the Q Conditions enforceable against it (AR 11656) constitute an unconstitutional contracting away of the City's police power. Mot. at 36-37.

The creation of the Ordinance demonstrates unpalatable eagerness by the City. The Opposition defends the PLUM recommendation report claiming the PLUM had voted to recommend substituting the Ordinance for the original ordinance. AR 11950. The Opposition argues that the report is not false, as the PLUM did modify the original ordinance by adopting a City Planning memo of technical corrections and a letter from Millennium's counsel concerning the Conditions of Approval. AR 75294-95. Opp. at 34. However, the technical changes and changes to the Conditions of Approval submitted by Millennium's counsel and City Planning, they were not the new Ordinance described in the PLUM recommendation report. The PLUM report is false.

Although the brief history of the Ordinance is troublesome, the Opposition correctly argues that the Q Conditions are not a blanket variance. Opp. at 33. A "variance" is a "permit to build a structure or engage in an activity that would not otherwise be allowed under the zoning code." Neighbors in Support of Appropriate Land Use. v. City of Tuolumne, (2007) 157 Cal.App.4th 997, 1007. The City did not grant Millennium a variance to deviate from zoning requirements, although it tried to do so in the Development Agreement. Rather, the City made a legislative policy choice in the Ordinance to favorably zone the Project Site, and this zoning rests on equal footing with the other zoning in the City.[23] Charter section 562 does not prevent the adoption of the Ordinance and the Q Conditions in it.

The false trail concerning adoption of the Ordinance does not necessarily invalidate it, and Petitioners do not argue that it does. Instead, they contend that the Ordinance adopts the Development Regulations (Exhibit C), which expressly provide that they shall prevail over any more restriction zoning provision in the LAMC. AR 18581. According to Petitioners, this prevents the City from enacting in the future any zoning provision inconsistent with the Development Regulations and, as such, is an unconstitutional delegation of police power. Since Millennium has potentially 12 years to begin the Project (AR 75052), this is no small consideration. Reply at 22. On this point, Petitioners rely on Cotta v. City and County of San

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[22] The court agrees with this argument, which however is mooted by enactment of the Ordinance.

[23] This appears to be the converse of "spot zoning", which is a legislative zoning of a specific property in a discriminatory fashion such that it has lesser rights than surrounding properties. *See* Consaul v. City of San Diego, (1992) 6 Cal.App.4th 1781, 1801. Illegal spot zoning involving the unreasonable and arbitrary regulation of uses of property is an unconstitutional violation of due process. Echevarrieta v. City of Rancho Palos Verdes, (2001) 86 Cal.App.4th 472, 483. The City provided Millennium with favorable zoning, not more restrictive zoning.

Francisco, ("Cotta") 157 Cal.App.4th 1550, 1557-59 and 108 Holdings, Ltd. v. City of Rohert Park, ("108 Holdings") (2006) 136 Cal.App.4th 186, 194. Reply at 22.

A municipality may not contract away its legislative and governmental functions. 108 Holdings, 136 Cal.App.4th at 194. Such power may not be surrendered or impaired either by contract or ordinance. Id. The controlling consideration is whether the local entity has bargained away its police power or municipal function. Id. at 195.

In 108 Holdings, the city entered into a stipulated judgment that bound it to interpret and apply its general plan in the manner set forth. Id. at 191. The petitioner claimed that this was an unlawful surrender of police power, and the court disagreed. Nowhere in the stipulated judgment did the city agree to refrain from legislating in the future on matters that were subject to the stipulated judgment; the city could amend its general plan as it saw fit and future circumstances dictated. Id. at 195. The court distinguished County Mobilehome Positive Action Com., Inc. v. County of San Diego, (1998) 62 Cal.App.4th 727, in which a county had imposed a 15-year moratorium on the enactment of rent control legislation for mobilehome park owners who entered into an agreement with the county. The agreement specified that its provisions would prevail over any county action, and the county agreed not to adopt any ordinance that would regulate mobilehome rent the owner could charge. This action prevented the county from exercising its police power out of fear that a subsequent enactment would expose the count to a breach of contract action. Id. at 195-96. In contrast, the 108 Holdings stipulated judgment did not limit the city's ability to amend its general plan in the future. Reservation of police power is implicit in all government contracts and private parties take their rights subject to that reservation. Id. at 196.

In Cotta, the court addressed an exercise of police power after an airport commission entered into a contract granting certain benefits to taxi drivers of clean air taxis providing service at San Francisco Airport. The plaintiffs purchased compressed natural gas taxis and operated them. Then the commission adopted a new resolution that conferred fewer benefits. 157 Cal.App.4th at 1553. The court held that the commission's earlier resolution did not create a contract and was in fact a regulatory framework which involved no vested right. If construed as a contract, it would be unenforceable as an unlawful delegation of police power. Id. at 1563-64.

Petitioners point to nothing in the Ordinance and the Development Regulations which prevents the City from adopting a future ordinance changing the Project's zoning. To the contrary, Millennium had to sign an agreement that it is bound by the Conditions of Approval, which restrict its use of the property. AR 11656. The Development Regulations, which are part of the Ordinance, do state that they trump inconsistent zoning provisions. AR 18581. But this is merely one ordinance controlling the application of another existing ordinance of equal dignity. Petitioners point to no provision of the Ordinance or Development Regulations which prevents the City from changing the zoning at the Project Site, either before Millennium begins development or afterwards (when vested rights may occur).

It is worth noting that the now withdrawn Development Agreement expressly stated that the City accepted the Development Agreement's restrictions on its police powers only to the extent required to achieve the parties' mutual objectives and to obtain public benefits which go beyond those obtained by traditional city controls on projects. AR 23437. Otherwise, the City reserved all remaining police powers to itself. AR 23436. Presumably, the Ordinance, which was created to substitute for the Development Agreement, was intended to effectuate the same result.

The Ordinance is not an unconstitutional delegation of police power.

9. Violation of Due Process and Recirculation

Petitioners argue that the PLUM and City Council hearings violated due process and their right to a fair hearing.

Specifically, at the PLUM hearing Millennium's attorney was permitted to make new substantive claims that CURD was not permitted to rebut (AR 11735-39), and major changes were made to the Development Regulations as set forth in a May 31, 2013 letter from Millennium's counsel and in a June 18, 2013 Planning staff memo without providing a copy to the public (AR 18466079), 19038-42).

At the City Council hearing, (1) Millennium's attorney submitted a 311-page letter and supporting evidence, including a 120-page geological report, less than 18 hours before the hearing and the City Council provided no opportunity to refute these arguments, (2) the City Council required CURD and the public to testify before calling City staff to give new presentations and evidence, and (3) the City Clerk announced at the hearing that an amending motion had been circulated when in fact it had not.

Finally, persons who attended the PLUM and City Council hearings either had no opportunity to speak or were given an impossible one minute to present evidence. Petitioners argue that each of the 131 persons who asked and were denied the opportunity to be heard at the public hearing should have been heard. *See* Manufactured Home Communities, Inc. v. County of San Luis Obispo, (2008) 167 Cal.App.4th 705 (mobilehome park owner denied fair hearing where rent control board exercised judicial-like powers in deciding the parties' rights in their leases and relied on uncross-examined testimony of tenants). Mot. at 39-40. Petitioners contend that they were deprived of an opportunity to refute and explain as a result. Mot. At 38-39.

Due process is flexible and does not require any particular procedure, so long as there is notice and a reasonable opportunity to be heard. Horn v. County of Ventura, (1979) 24 Cal.3d 605, 612. Rather, these requirements vary according to the competing interests of the government and the citizen. Skelly v. State Personnel Board, (1975) 15 Cal.3d 194, 208. At a minimum, due process requires notice and an opportunity for a hearing. Id. When an agency conducts adjudicatory proceedings, the hearing must comply with principles of due process. Morongo Band of Mission Indians v. State Water Resources Control Board, (2009) 45 Cal.4th 731, 737. The tribunal must be free of bias, and an adjudicator is presumed impartial unless he or she has a financial interest in the outcome. Id. Where city council has authority to make final adjudications of fact, it may not rely on information of which the parties were not apprised and of which they had no opportunity to controvert. Clark v. City of Hermosa Beach, (1996) 48 Cal.App.4th 1152, 1171 (property owner was denied fair hearing on application to construct two-unit condominium).

Petitioners have not shown they have a due process right. Some of the City's actions (*e.g.*, the Ordinance) were legislative in nature. No person has a due process right for a body's legislative approvals; only governmental decisions which are adjudicative in nature are subject to procedural due process principles. Horn, *supra*, 24 Cal.3d at 612. For that portion of the City's approvals that were quasi-adjudicative, Petitioners must show that they a property right supporting a due process violation. Horn, *supra*, 24 Cal.3d at 615. This requires a protected property interest, which must be more than an abstract need or desire for an outcome. Smith v. Board of Quality Medical Assurance, (1988) 202 Cal.App.3d 316, 326. While Petitioners have shown they are property owners or community members, they have not shown that their property

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rights are protected because they are adversely affected by the Project. *See* Abrahams Decl., ¶'s 3-4, 8; Dodge Decl., ¶3-4; Schwartz Decl., ¶3-4.

Aware of this fact, Petitioners rely on a dignitary interest – which is an interest in being informed of government action and in being able to present his or her side. Reply at 24. But this is putting the cart before the horse. A dignitary interest in due process only applies once it is determined that the plaintiff has a constitutionally protected property interest; Petitioners cannot use a dignity interest to create a property interest. *See* Mohilef v. Janovici, ("Mohilef") (1996) 51 Cal.App.4th 285-87 (deciding existence of protected property interest before using dignitary interest to decide what process was due).[24]

Assuming that Petitioners have a due process interest, the hearings provided the notice and opportunity to be heard that are the basics of due process. It is undisputed that the City provided notice. The City also provided an opportunity to be heard, fairly dividing the presentation time. At the PLUM hearing, Petitioners were given ten minutes to present its case. Members of the public opposing and supporting the Project were given 20 minutes, respectively. At the City Council hearing, Petitioners' side (including another appellant) was given 20 minutes, twice as much time as Millennium. Members of the public were given ten minutes each. Petitioners individually and through their counsel also submitted many letters, reports, opinions, and emails to the City. Consequently, Petitioners certainly had an opportunity to be heard. As for the public at large, Petitioners cite no case holding that every person who attends a public hearing must be given a chance to speak; local government could never perform the people's business if that were true. The City Council was entitled to limit the number and time of speakers to avoid cumulative information.

There were aspects of the hearing process which appear unfair, including the PLUM's acceptance of changes to Q Conditions and the Development Regulations through a May 31, 2013 letter from Millennium's counsel and through a Planning staff memo without providing either to the public, the submission by Millennium's attorney of a 311-page letter rebutting Petitioners' arguments less than 18 hours before the City Council hearing, requiring CURD and the public testify before City staff gave its presentation, and the City Clerk's announcement at the City Council hearing that an amending motion had been circulated when one had not been circulated.

The court need not decide whether these errors individually or cumulatively denied a fair hearing because Petitioners have not discussed prejudice: why the City's procedural due process errors require a new hearing. Prejudice is required for public agency decisions on land use matters. Govt. Code §65010; Rialto Citizens for Responsible Growth v. City of Rialto, (2012)

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[24] Petitioners' reliance on American Tower Corp. v. City of San Diego, (9th Cir. 2014) 763 F.3d 1035, 1050-51 is not to the contrary. In that case, the Ninth Circuit interpreted Horn as relying on the broader due process principles of the California Constitution in holding that reasonable notice and an opportunity to be heard is required before an agency makes a land use decision that is a substantial deprivation of landowner property rights. Id. at 1051. Thus, American Tower concluded that adjacent and nearby property owners could make a due process objection to a city decision to permit dozens of antennas perched on hundred foot towers alongside sizable equipment shelters. Id. Whatever the correctness of American Tower's interpretation of Horn, Petitioners have made no such showing of significant impact from the Project. *See* Mohilef, *supra*, 51 Cal.4th at 285, n.16 (equating scope of federal and state due process for purposes of nuisance abatement case).

208 Cal.App.4th 899, 920-22. Petitioners argue that they are relying on constitutional, not statutory principles (Reply at 25), but due process does not mandate that all governmental decision-making comply with standards that assure perfect, error-free determinations. Machado v. State Water Resources Control Board, (2001) 90 Cal.App.4th 720, 725-26.[25]

The due process and fair hearing claims are denied.

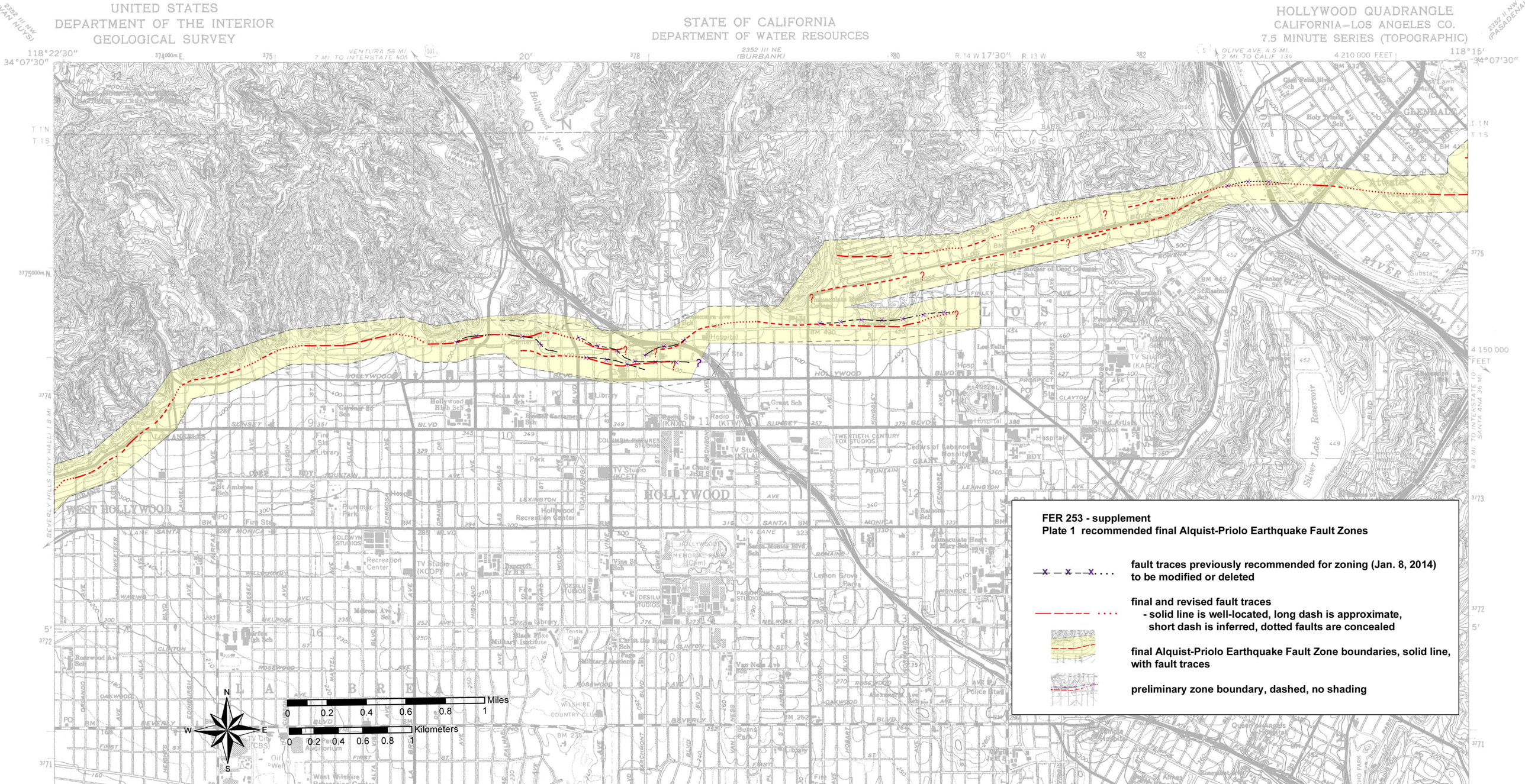
G. Conclusion

The Petition is granted in part. The First and Second causes of action under CEQA are granted. The Third Cause of Action under CEQA is denied. The Sixth, Seventh, and Eighth causes of action (violation of City Charter, delegation of police power, and violation of La Mirada are denied, as are the Fourth and Fifth causes of action (due process and fair hearing). A writ of mandamus shall issue directing the City and City Council to vacate and set aside the actions approving the FEIR, Project approvals, and all land use entitlements. An injunction shall issue enjoining the City from granting any authority, permits, certificate of occupancy, or entitlements for the Project pursuant to the City's prior actions, and enjoining Millennium from undertaking construction on the Project pursuant to the set aside approvals.

~~Petitioners' counsel is ordered to prepare a proposed judgment and writ of mandate, serve~~ them on counsel for the opposing parties for approval as to form, ~~wait 10 days~~ after service for any objections, meet and confer if there are objections, and then submit the proposed judgment and writ along with a declaration stating the existence/non-existence of any unresolved ~~objections. An OSC re: judgment is set for June 11, 2015 at 9:30 a.m.~~

[25] Petitioners also argue that recirculation of the DEIR was required under Guidelines section 15088.5, which provides for recirculation is required where significant new information is added after public notice is given for review of the DEIR. New information is not significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment. Id. Petitioners point to nearly 400 pages of new or revised tables and analysis, much of it related to traffic and noise analysis (AR 5824-6222) and to Millennium's 120-page geology report and other materials submitted 18 hours prior to the City Council hearing. Petitioners argue that disclosure of this information and analysis was mandatory in the DEIR, not later when the public could no longer officially comment on it. Mot. at 33. The Opposition does not respond to this issue which is mooted by the fact that a new EIR is required.

EXHIBIT 2


UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES
HOLLYWOOD QUADRANGLE
CALIFORNIA—LOS ANGELES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
FER 253 - supplement
Plate 1 recommended final Alquist-Priolo Earthquake Fault Zones
fault traces previously recommended for zoning (Jan. 8, 2014) to be modified or deleted
final and revised fault traces
- solid line is well-located, long dash is approximate, short dash is inferred, dotted faults are concealed
final Alquist-Priolo Earthquake Fault Zone boundaries, solid line, with fault traces
preliminary zone boundary, dashed, no shading
Miles
Kilometers
HOLLYWOOD
WEST HOLLYWOOD
LOS ANGELES
GLENDALE
SILVER LAKE
LA BREA

CALIFORNIA GEOLOGICAL SURVEY
FAULT EVALUATION REPORT FER 253

THE HOLLYWOOD FAULT
in the Hollywood 7.5' Quadrangle
Los Angeles County, California

by
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Engineering Geologist
and
Jerome A. Treiman
Senior Engineering Geologist
February 14, 2014

INTRODUCTION

The Hollywood Fault is within the central portion of the Santa Monica-Hollywood-Raymond Fault system, which is collectively part of a greater than 200-km long west-trending system of oblique, reverse and left-lateral faults that separate the Transverse Ranges geomorphic province of California on the north, from the Peninsular Ranges province on the south (Dolan *et al.*, 1997). The Hollywood Fault extends east-northeast for about 17 km through densely populated areas, including the cities of Beverly Hills, West Hollywood, and the community of Hollywood within the City of Los Angeles, trending eastward to the Los Angeles River Valley (Figure 1).

Recent detailed geologic and geotechnical studies for residential and commercial development in the cities of West Hollywood and Los Angeles have reported Holocene faulting at a number of sites along the Hollywood Fault. Infrastructure projects (sewer and subway) and groundwater studies, in addition to gravity data, also provide support that the Hollywood Fault is active and continues eastward toward the Raymond Fault. The majority of the Raymond Fault has been zoned as active, to within about 4 km east of the Los Angeles River at the eastern edge of the Santa Monica Mountains (see Figure 1).

Both the Santa Monica and Hollywood Faults were previously evaluated for Holocene active faulting as part of the 1977 study area of the 10-year program for fault evaluation (Smith, 1978). That study concluded there was insufficient evidence of Holocene faulting to recommend fault traces for zoning at that time. Subsequent geologic and geotechnical studies, paleoseismic studies, geomorphologic studies reported by Dolan *et al.* (1997), Dolan *et al*. (2000), and other published and unpublished research, have prompted CGS review of these recently available data to re-evaluate evidence for Holocene displacement along traces of the Hollywood Fault.

The purpose of this report is to assess the location and activity of fault strands associated with the Hollywood Fault within the Hollywood 7½-minute quadrangle. Those faults determined to be sufficiently active (Holocene) and well-defined are zoned by the State Geologist as directed by the Alquist-Priolo Earthquake Fault Zoning (AP) Act of 1972 (Bryant and Hart, 2007). This report does not attempt to reevaluate any strands of the Newport-Inglewood Fault zone.

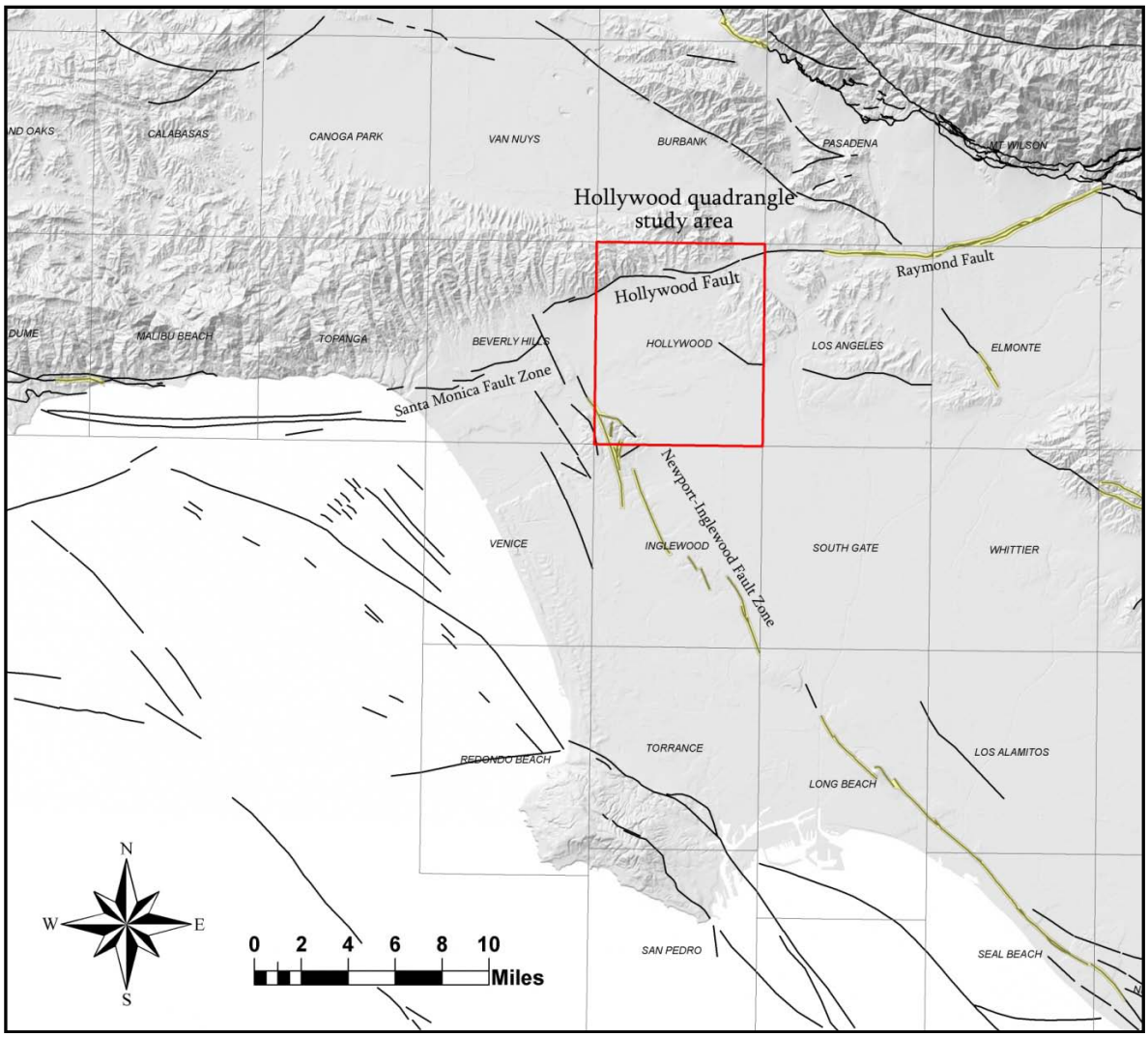

Figure 1- Study area of the Hollywood quadrangle and names of selected faults in the vicinity. Faults within existing Alquist-Priolo Earthquake Fault Zones are within yellow-shaded boundaries; other faults are indicated in black. Fault strands of the Newport-Inglewood Fault Zone are not a part of this evaluation. Source: USGS Quaternary Fault and Fold Database of the United States. (http://earthquake.usgs.gov/hazards/qfaults/)

GEOLOGIC SETTING AND PREVIOUSLY PUBLISHED WORK

The Hollywood Fault is located along the southern boundary of the Santa Monica Mountains, where Cretaceous granitic rocks; mainly quartz diorite, and Feliz biotite granodiorite (as reported in Lamar, 1970), are unconformably overlain by folded and faulted early to middle Miocene Topanga group marine siltstones, sandstones, and basaltic volcanic rocks, and late Miocene Puente Formation marine sandstones, siltstones and shales. Alluvial deposits flanking the mountain front consist of Pleistocene and Holocene alluvial fan deposits, colluvial sediments, and local slope wash.

The Hollywood Fault also defines the northern edge of the Hollywood basin, an asymmetric basin structure that is bound on the south by the North Salt Lake Fault (Figure 1a). Gravity data indicate the basin is deeper along the northern edge, next to the Hollywood Fault (Hildenbrand *et al.*, 2001). In the Los Angeles River floodplain (Figure 1), the Hollywood Fault is

defined by a steep gravity gradient (Chapman and Chase, 1979), and a steep drop in groundwater levels as the fault trends eastward toward the Raymond Fault (State Water Rights Board, 1962).

The Hollywood Fault was previously mapped by many workers including Hoots (1930); Lamar (1970); Weber *et al.* (1980); and Dibblee (1991), where they generally placed the fault at the steep break in slope along the southern edge of the Santa Monica Mountains. More recent mapping by Dolan *et al.* (1997) provided a more detailed view of the fault that takes into account geomorphic indicators as well as site-specific data (discussed later in this report).

Mapping by Hill *et al.* (1979) similarly reported the Hollywood Fault trace located at the base of the Santa Monica Mountains, however, they also mapped a southern trace, which they referred to as the Santa Monica Fault. This southern trace delineates the south margin of the Hollywood basin, defined by a zone of differential subsidence (shown on Plate 1). The identification of this zone is supported by their analysis of oil well data, groundwater data, and review of precise leveling surveys. A similar assessment of the structural boundary of the Hollywood Basin was made by Hildenbrand *et al.* (2001) based on gravity data, although they identified the southern bounding structure as the North Salt Lake Fault (Figure 1a).

At the eastern edge of the Santa Monica Mountains, the concealed trace of the Hollywood Fault was previously mapped in various configurations, generally extending east to northeast into the Atwater area. Originally believed to be a reverse fault, more recent research (e.g. Dolan *et al*.: 1997, 2000; Law/Crandall, 2001; William Lettis and Associates, 2004) suggests a dominant strike-slip component. Previous mapping is shown on Plate 1.

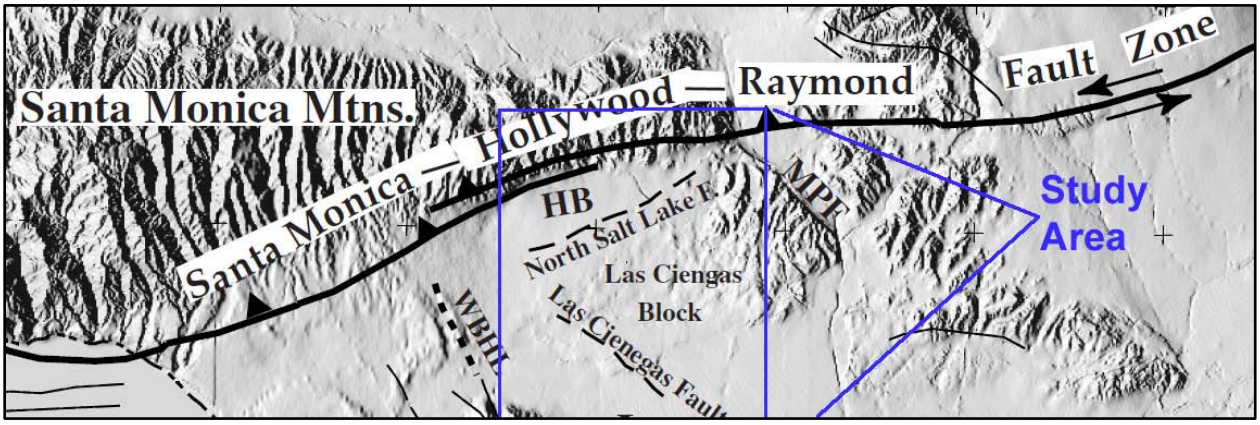

Figure 1a - location of Hollywood Basin (**HB**) with respect to the Hollywood Fault and the North Salt Lake Fault. (clipped/modified from Hildenbrand *et al.* (2001)

SEISMICITY

Regional seismicity records from Hauksson *et al.*, (2012), indicate there have not been any significant earthquake events within the past 30 years that might be confidently associated with the Hollywood Fault (Figure 2). In the Los Angeles region, several historical earthquakes have generated strong shaking in the vicinity of the Hollywood Fault, including: the 1971 M6.6 San Fernando, 1987 M5.9 Whittier Narrows, 1988 M5.0 Pasadena, 1991 M5.8 Sierra Madre, and the 1994 M6.7 Northridge event. The 1988 Pasadena earthquake occurred on the Raymond Fault. Seismic records from the 1988 event provided additional confirmation of left-lateral displacement along the Raymond Fault (Jones *et al.*, 1990).

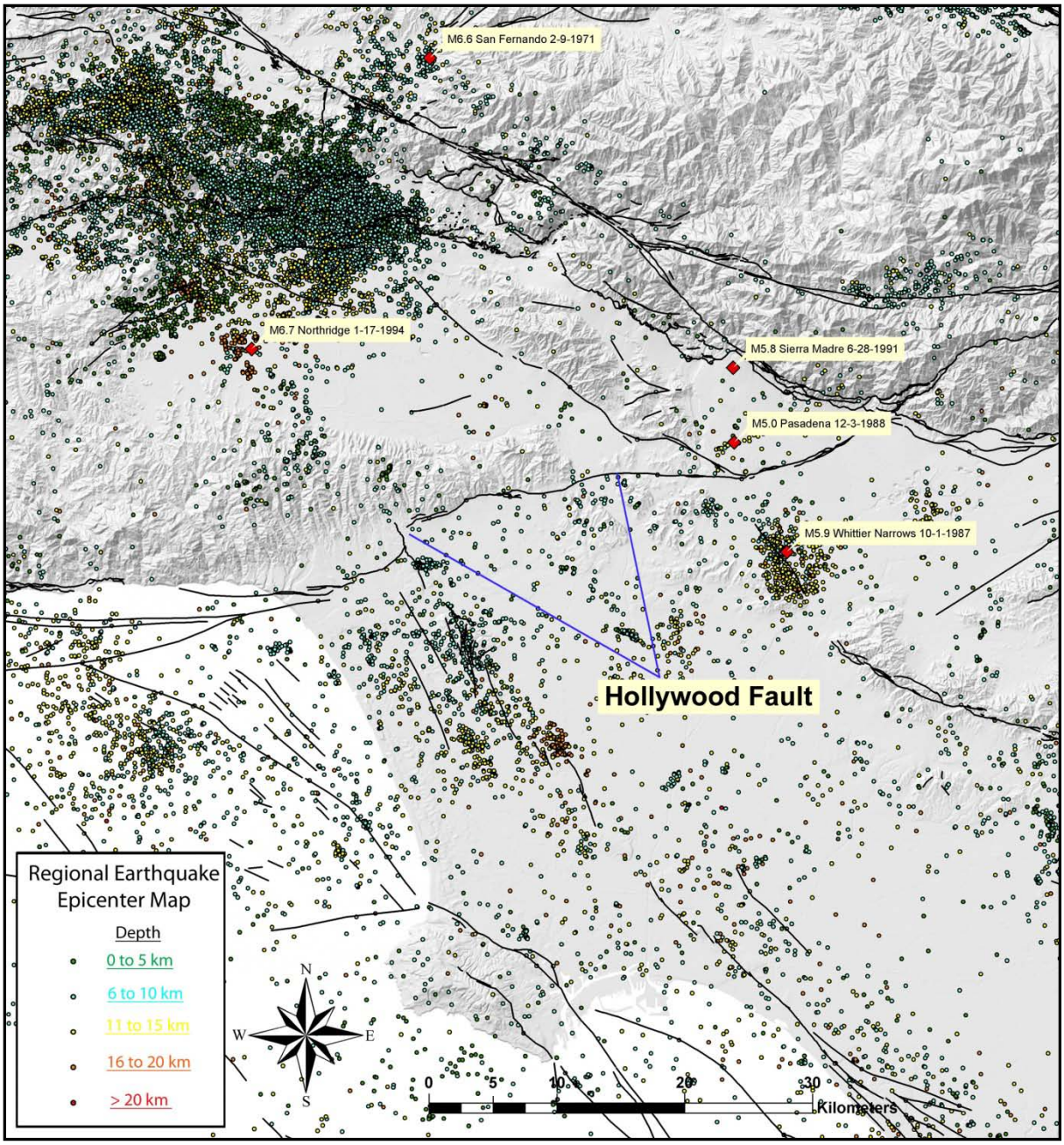

Figure 2 - Regional seismicity from 1981 to June 2011 (Hauksson et al, 2012), including significant faults within the greater Los Angeles basin area. Faults (in black) are from the U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database. (http://earthquake.usgs.gov/hazards/qfaults/)

SUMMARY OF AVAILABLE DATA

PALEOSEISMIC STUDIES AND CONSULTING REPORTS

(for referenced localities, see Plate 1 and related figures)

Critical studies that bear on the location and recency of faulting along the Hollywood Fault have come from three general areas: (1) geologic and geotechnical studies within the City of West Hollywood; (2) research, geologic, geotechnical and infrastructure studies in downtown Hollywood (Curson Avenue to Highway 101); and (3) groundwater and infrastructure studies in the Los Angeles River area. There has been very little site-specific data generated between Highway 101 and the Los Angeles River.

West Hollywood

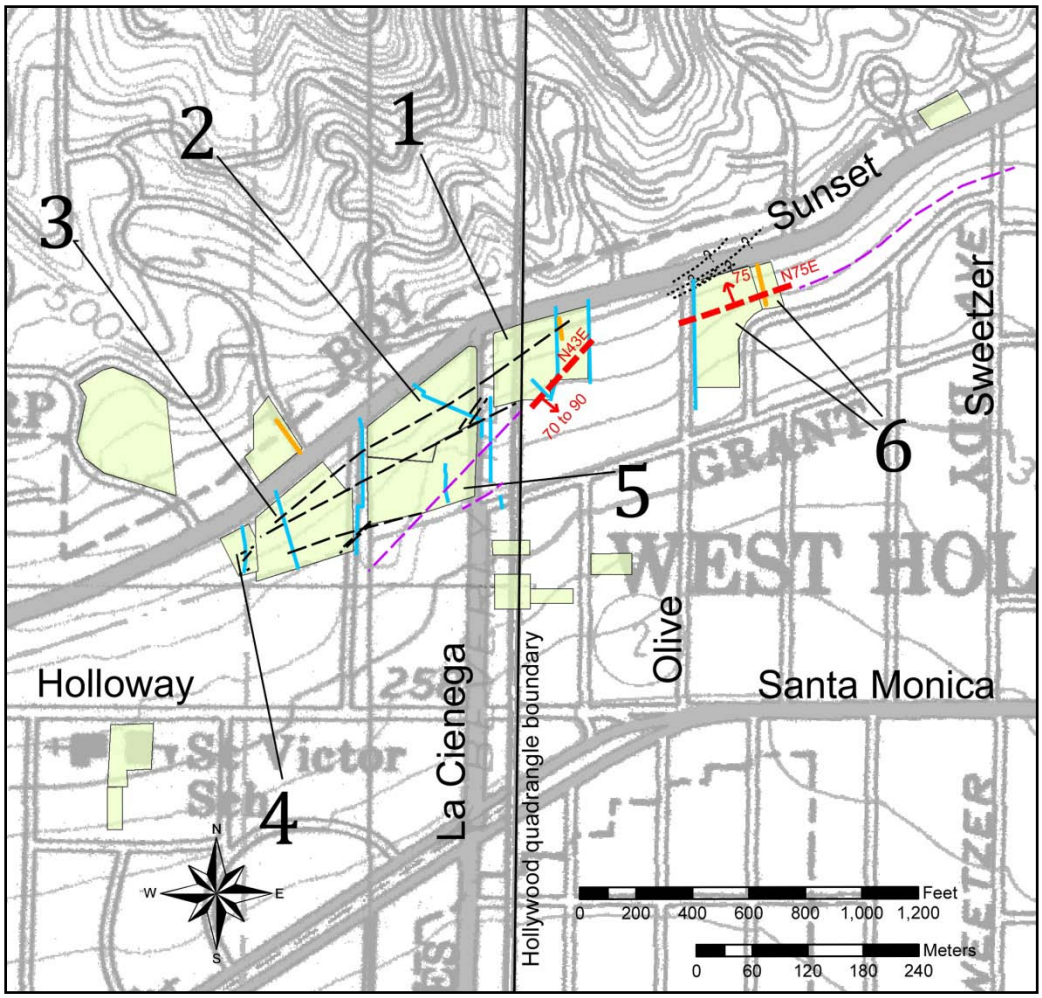

Figure 3- Study site boundaries (light green boxes) where fault studies have provided evidence of faulting (localities 1 through 6, discussed in text; these and other localities are also shown on Plate 1). Un-numbered sites found no evidence of faulting. Faults with evidence of Holocene displacement indicated in red; purple faults are potentially active; black faults are pre-Holocene. Short gold lines are trenches, and blue lines are boring transects. Note: not all exploratory boring transects are shown at this scale.

The City of West Hollywood Fault Precaution Zone Map, and Geologic and Seismic Hazard Technical Background Report, prepared by KFM Geoscience, Inc. (2010) is a crucial part of the City of West Hollywood General Plan. Included in the KFM report is a summary of Fault Rupture Hazard Studies from 29 sites that are on file with the City, collected from 1997 to 2013. Of these reports, 8 sites yielded data that active faulting exists within those sites or otherwise helped constrain the fault location near the western boundary of the Hollywood Quadrangle. Of these 8 sites, several studies were performed adjacent or in close proximity to one another; these are shown on Figure 3.

An investigation by Harza (1998, Figure 3, locality 1) was one of the earliest studies in this area that found two zones of faulting: a northern and a southern fault zone. Paleoseismic studies from borings and trenching at the site indicate these north-dipping faults of the northern fault zone do not offset an argillic soil horizon estimated to be over 120,000 years old based on degree of soil profile development. This northern fault zone includes several strands, which they report strike from N50°E to N70°E, dipping from 50° to 60° NW. Striae and slickensides measured in bucket auger borings provided evidence for north-side-down normal sense of displacement for these northern strands.

The southern fault zone (herein discussed as Fault 1) was reported as a northeast striking, southeast dipping fault that vertically offset Quaternary deposits at least 150 feet and acts as a groundwater barrier. Harza (1998) recommended a building setback zone for Fault 1 as a precautionary method until further studies could be made. Recent work, including observations from down-hole logged bucket auger borings and ^{14}C dating of the soils by WLA (2004) have determined this southern fault zone (Fault 1) is active. Figure 4 illustrates the upward terminations of three strands (D, E, and F) of Fault 1. Fault 1 is oriented N50° to 55°E, dipping 53° to 56° SE as reported from bucket auger down-hole observations. Charcoal samples from faulted soil horizons revealed dates about 9,910 to 10,190 ybp, and 15,250 to 16,650 ybp. WLA (2004) also reported an unfaulted soil horizon above fault strand D to be 8,590 to 8,990 ybp, suggesting a minimum age of faulting at fault strand D. They suggested that, because the fault tips of strands D, E, and F all occur at about the same stratigraphic position, these three closely spaced splays ruptured in the most recent earthquake. Based on the detrital charcoal samples, they concluded the most recent surface-rupturing earthquake on strands D, E, and F of Fault 1 occurred between ~8,500 and 10,000 years ago.

A report by WLA (1998c) at locality 2 finds that four faults underlie the site. They state that these faults are overlain by multiple unbroken Pleistocene soils and that the southernmost fault has displaced Pleistocene deposits and is overlain by unbroken Holocene deposits. Additional details gathered from exploratory borings provided insight that the northern fault zone is found to offset a marine wave-cut (abrasion) platform at depth. Evidence includes a gently dipping, planar surface of quartz diorite bedrock, overlain by a thin veneer of beach sand, and smooth, rounded, non-quartz diorite cobbles and pebbles. They reported the age of this marine wave-cut platform is constrained by the age of the overlying alluvial sediments, where they estimated this abrasion platform to be between 400,000 to 900,000 years old. Further, they report a significant amount of platform tilting is present between fault-bound blocks. However, measurable evidence of late Quaternary folding or tilting of the overlying sediments was not present at the site.

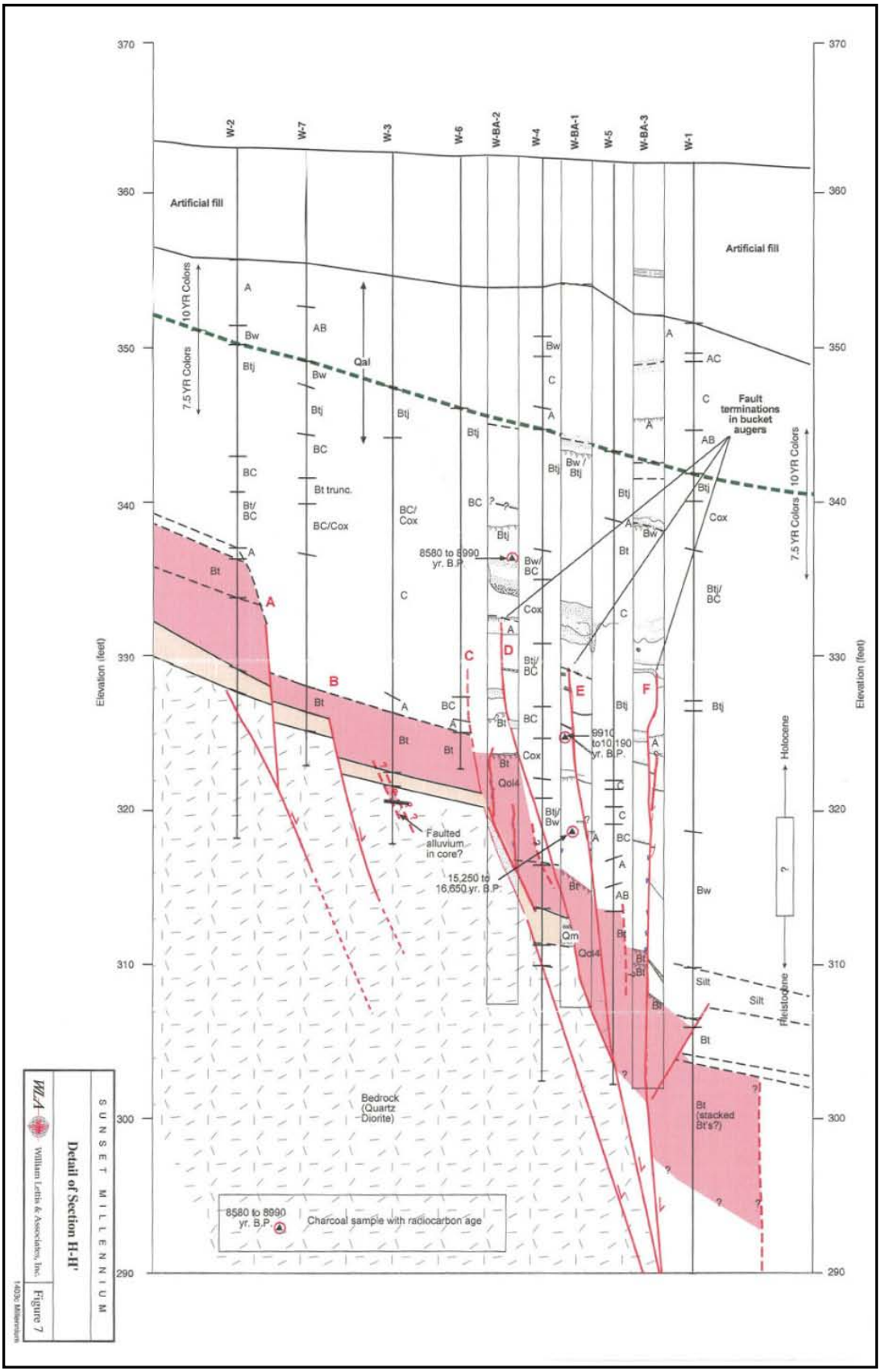

Figure 4 - Upward terminations of fault strands D, E, and F within Fault "1", Locality 1; modified from WLA, 2004.

A study by WLA (1998b), located southwest of Alta Loma Road at Sunset Boulevard (locality 3), mapped four faults across the site that are reported as inactive based on unfaulted late Pleistocene soils that overlie the faults. These faults were reported to be secondary faults and not the main trace of the Hollywood Fault. They report that similar to locality 2, these faults are part of the northern fault zone and are found within the marine wave-cut abrasion platform at depth. They infer the main trace to lie well south of Sunset Boulevard in this location.

An interesting detail about the Hollywood Fault as reported by WLA (1998c) and discussed by T. Rockwell (p.c., 2013), is that the gently sloping marine abrasion surface consists of one and possibly two paleo-marine terraces at depth in this area, with a terrace riser (or sea cliff) at the back of each terrace. Some of the escarpments observed along the base of the Santa Monica Mountains, previously thought to be the location of the Hollywood Fault, are now interpreted as paleo-sea cliffs.

Work completed by WLA (2007b) south of Sunset Boulevard at locality 4 found no active faults are present at the site. They encountered three inactive secondary faults at the site that were described to be part of the inactive northern fault zone, as noted at localities 1, 2 and 3]. They reported these faults are overlain by distinctive, continuous buried Pleistocene soils.

A study by ECI (1999a) at locality 5, found the northern fault zone and marine abrasion platform to be overlain by unbroken Pleistocene age soils in all of their borings, indicating Holocene faulting has not occurred at this location. Fault 1 underlying the site was also judged to be not active, based on apparent continuity of overlying pre-Holocene stratigraphy as interpreted from their borings. However, the correlated contacts are not clearly continuous and some Holocene offset cannot be precluded. Based on the relatively small offset of the quartz diorite basement terrain (relative to other sites) and the generally normal separation on the on-site faults, ECI (1999a) concluded that the principal trace of the Hollywood Fault must lie to the south of their site.

Studies located on the southeast corner of Sunset Boulevard and Olive Avenue at Locality 6 (Applied Earth Sciences, 1997; Johnson, 1999; Law/Crandall, 2001) found that a northern and southern set of faults crossed the site. The northern fault zone, as in studies to the west, was reported as not active based on unfaulted Pleistocene soils at the site. Additionally, these studies encountered the marine abrasion platform and associated cobble and boulder size clasts of well-rounded quartz diorite and other exotic clasts, with well-sorted, clean, fine- to medium-grained sand. They interpreted the northern fault zone as a minor, secondary fault zone that accommodated local extension in a left step of the Hollywood Fault zone. The active southern fault zone is steeply north-dipping, and extends into alluvial units of Holocene age up to within 15 feet of the ground surface (Figure 5). Law/Crandall (2001) determined this strand is active based on radiocarbon dating of detrital charcoal samples, indicating the faulted soils were approximately 9,000 to 10,000 years old. Both Law/Crandall (2001) and Applied Earth Sciences (1997) recommended structural setbacks from the fault. This southern strand vertically offsets bedrock by at least 150 feet of south-side down separation, and also forms a steep groundwater step. Unfaulted Pleistocene sediments were documented south of the southern fault zone.

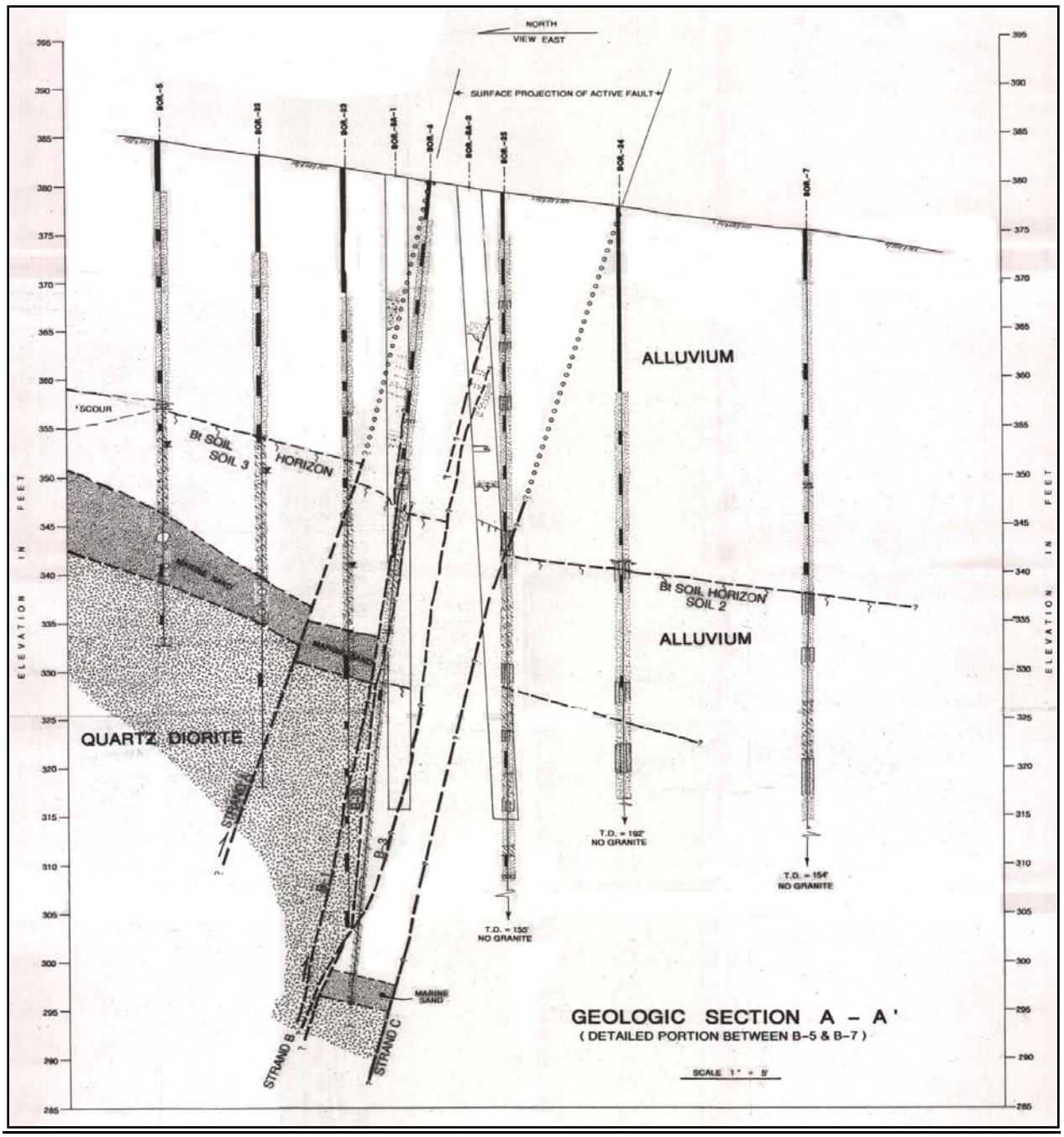

Figure 5 - Cross section showing south-side down offset on the southern fault zone at the southeast corner of Sunset Blvd. and Olive Drive, West Hollywood (site 6). Thickness of marine sand decreases to the south. Modified from Law/Crandall, 2001.

A study by Schell (1998) was performed for a site located south of Sunset Boulevard along Harper Avenue (locality 7, Plate 1). Boreholes were drilled for the site, and were extended north across Sunset Boulevard and a steep escarpment. Borings revealed a steep groundwater step, and an offset of quartz diorite bedrock in excess of 150 feet near Sunset Boulevard. Based on this data and geomorphic expression of the fault scarp, Schell interpreted that the main trace of the Hollywood Fault lies north of his site, along the south edge of Sunset Boulevard. He concluded that there were no significant faults to the south based on apparent

continuity of several sediment packages of increasing relative age with depth, with the lower units identified as pre-Holocene.

A study by ECI (2001a) was completed for a proposed development located south of Sunset Boulevard at Havenhurst Drive at locality 8 (shown on Plate 1). This site is adjacent to locality 7 and ECI included data from that work in their analysis (Schell, 1998) in addition to their own borings extending offsite toward Sunset Boulevard. After analysis of groundwater levels, topographic data, soil development characteristics, and stratigraphic correlation across the southern portion of ECI's site, they concluded the fault zone immediately south of Sunset Boulevard may be wider than originally mapped by Schell, where they mapped a second north-dipping active fault strand to the south of Schell's trace. Continuity of pre-Holocene stratigraphy beneath the site, based on borings, was used to preclude any additional young faulting. Ages of stratigraphic units were based on one radiocarbon date and relative soil development characteristics.

Downtown Hollywood

Much of the synthesis and reported details in the downtown Hollywood area go back to Dolan *et al.* (1997). Work by Dolan *et al.* (1997) included geomorphic analysis of tectonic landforms along the fault trace using historic topographic maps (1920s vintage) and field reconnaissance. They also presented and analyzed data from several geotechnical studies. They interpreted at least three major fault splays: the Franklin Avenue strand, the Yucca Street strand, and a northern strand as shown in Figure 6 (see also Plate 1). Details of individual parts of their study are discussed below.

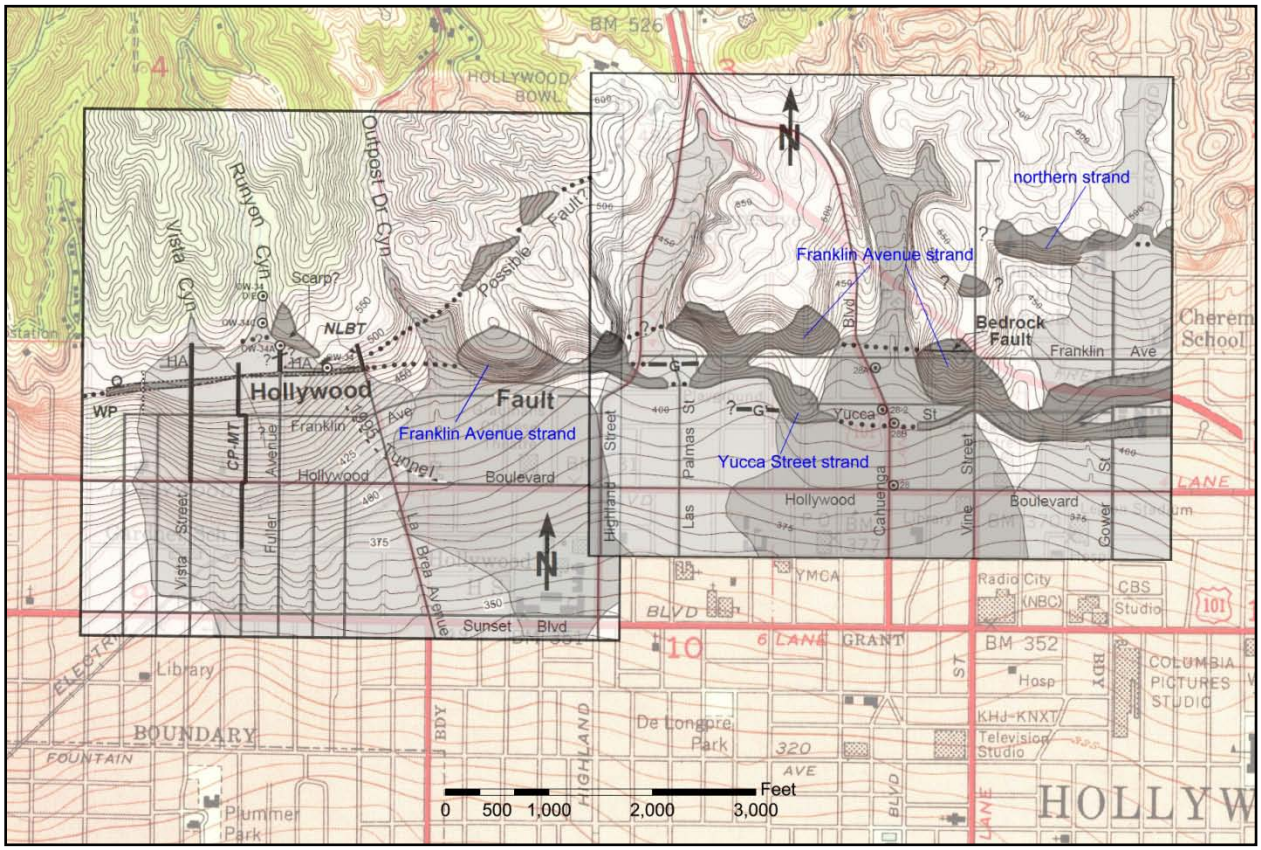

Figure 6 – Detailed mapping and investigations by Dolan *et al.* (1997, their figures 4 and 6), shown overlying a 1953 topographic map base of the Hollywood area. "G" indicates groundwater barrier. Dark shaded areas indicate fault scarps. This historic topographic map is composited from 1923-1925 plane table surveys, with a 5-foot contour interval up to the 500 foot elevation contour and is similar to the topographic data set used by Dolan *et al.* (1997).

Hollywood - Vicinity of La Brea Ave

Earlier work by Crook et al. (1983) and Crook and Proctor (1992) included trenching at a site within the Hollywood area at Wattles Garden Park at Franklin and Sierra Bonita Avenues (locality 9, Plate 1). They found several thin shallowly north-dipping gouge layers and a thicker (60+ cm) gouge mass that they assume to be part of the Hollywood Fault Zone. There were no datable materials. A second trench, further down the fan surface found no faulting but was likely too shallow to be conclusive.

At locality 10, detailed studies by Dolan *et al* (1997), and Earth Technology Corporation (1993) took place at three locations in conjunction with the 1993 MetroRail Boreholes/subway tunnel investigations along the Hollywood Fault Zone: Camino Palmero-Martel Avenue Transect; North La Brea Avenue Transect; and at Vista Street, as shown on Figure 7. Also included in this study were data from Los Angeles County storm drain trenches (Vista Street and Fuller Avenue), and the La Cienega and San Fernando Valley Sewer Relief Tunnel project (1953, as reported by Earth Technology Corp, 1993) west of Vista Street.

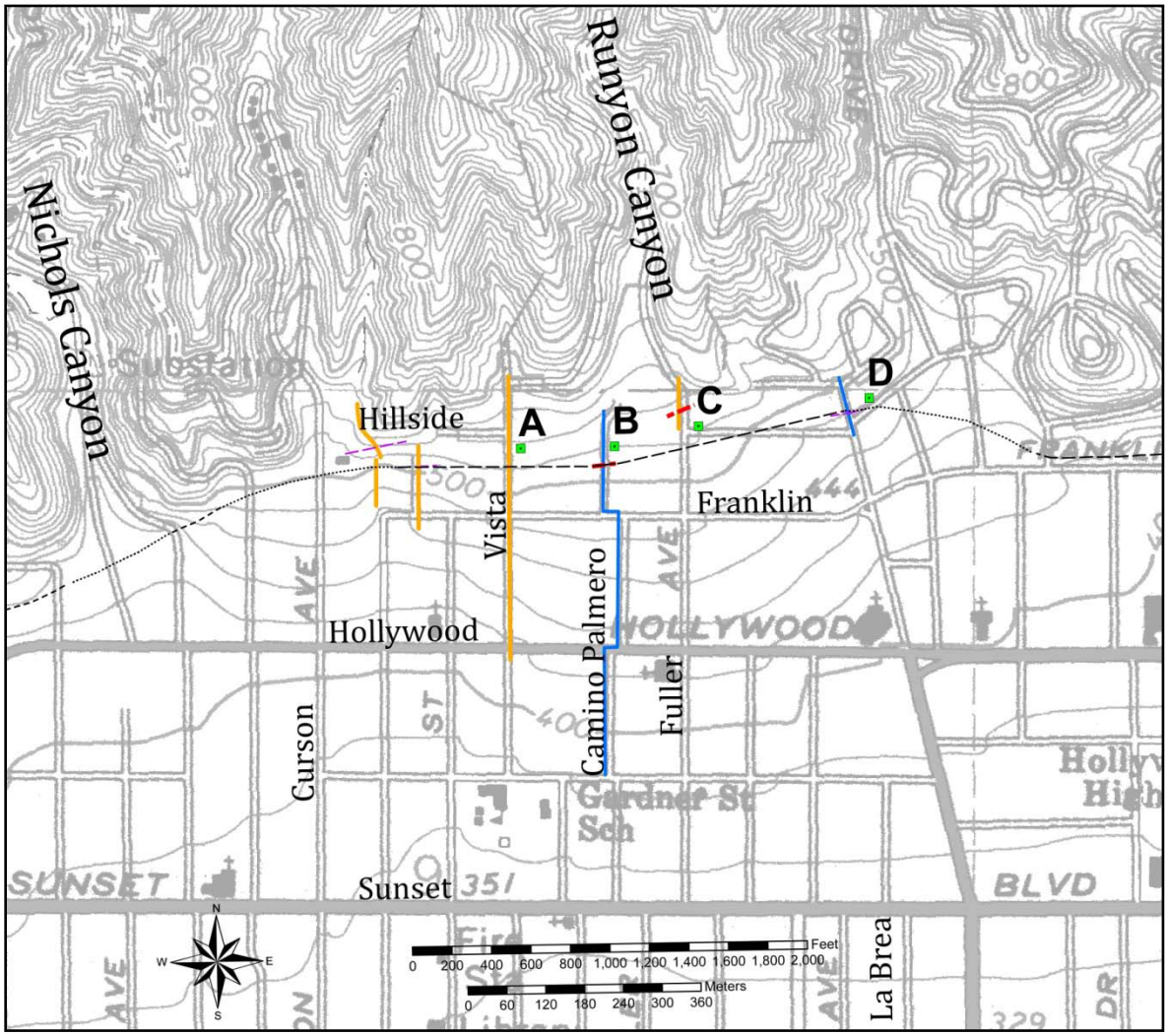

Figure 7 - North Hollywood area, locality 10, showing location of shallow trench data (gold lines) and borehole transects (blue lines) completed for the Metro Red Line study (Earth Technology Corporation (1993), sewer relief trenches and storm drain tunnel. Green squares indicate study localities: A - Vista Street storm drain transect; B - Camino Palmero-Martel Avenue Metro RedLine transect; C- Fuller Avenue storm drain trench; D - La Brea Avenue Metro RedLine transect. Dashed red line segments along transects indicate the active fault trace or projection based on supporting data from adjacent sites. Purple dashed lines represent fault strands of indeterminate age. Black lines are faults recommended herein for zoning.

Along the Vista Street storm drain transect (Figure 7, site A), the Hollywood Fault was not encountered in the ~1400 foot long trench, however (Dolan *et al.*, 1997) reported the depth of this trench was likely insufficient to observe the fault trace. The La Cienega and San Fernando Valley Sewer Relief Tunnel project (1953, as reported in Earth Technology Company, 1993) along Sierra Bonita west of site A, encountered faulted granite with gouge and breccia in test borings.

Along the Camino Palmero-Martel Avenue Metro RedLine transect (Figure 7, site B), evidence for faulting included groundwater barriers and quartz diorite bedrock faulted over alluvium, with average dips of ~77° to the north. Dolan *et al.* (1997) and Earth Technology Corporation (1993) reported up to four fault strands with apparent north side-up displacement of the granitic bedrock at depth (Figure 8), however the southern-most strand appears to be the youngest based on offset younger soils. Groundwater elevation changes were reported on the order of 40 or 50 feet across the fault as shown in Figure 8 (inset). This site was further explored (Dolan *et al.,* 2000) with successive bucket auger borings that revealed additional evidence that one, and possibly two surface ruptures had occurred within the past 20,000 years, the most recent event occurring about 7,000 to 9,500 years ago. Additionally, based on the downhole observations made within the boreholes for this study, Dolan *et al.* (2000) reported that all of the fault strands encountered were near vertical with a dip about 85° northward, and that the most recent surface rupture resulted in north-side down separation. This sense of near-surface separation contrasts with the reverse sense at depth, supporting the contention of Dolan *et al.* (1997) that there is a strong component of strike-slip displacement (presumed left-lateral).

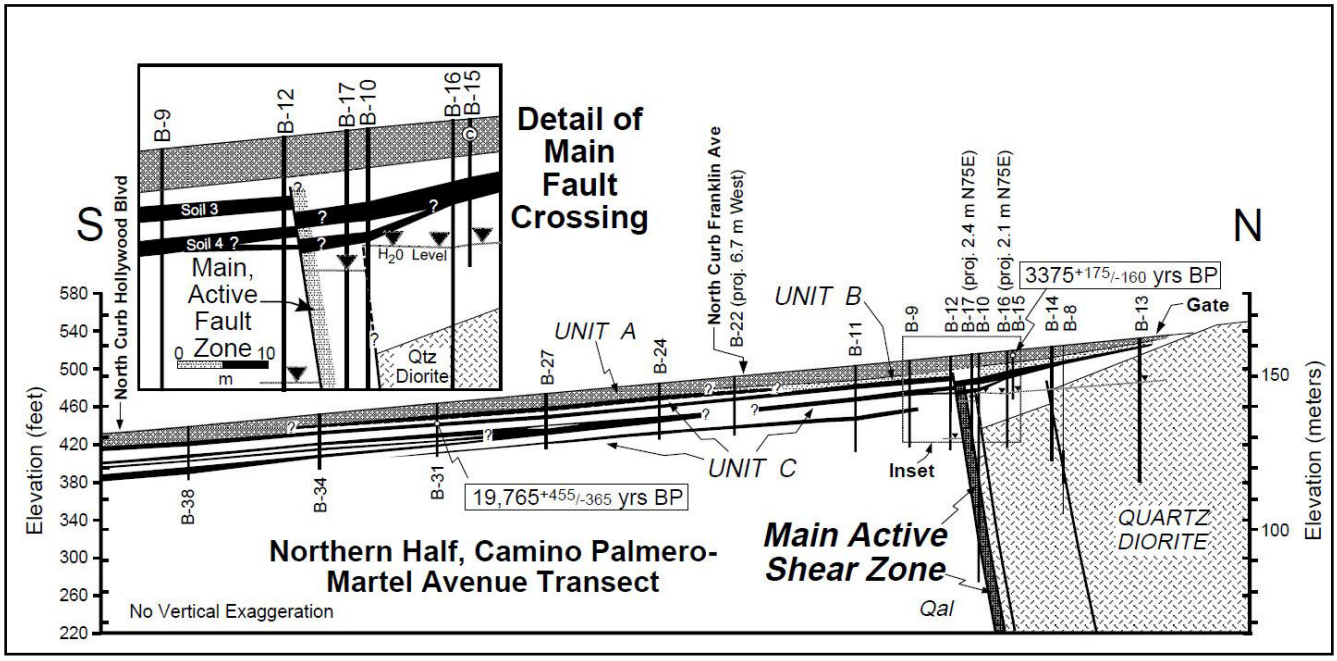

Figure 8 - Cross section of continuously cored boreholes along the northern half of Camino Palmero transect. Note down to the north soil profiles, particularly between B-10 and B-12, across the active fault strand. Depth to groundwater was encountered at about 55 feet on the north, and about 89 feet bgs to the south. Figure modified from Dolan *et al.* (1997).

Storm drain trench excavations by Los Angeles County Department of Public Works along Fuller Avenue (Figure 7, site C), revealed a secondary strand of the Hollywood Fault, oriented N59°E, 74°NW with north-side-up vertical separation (reported by Dolan *et al.*, 1997). This fault displaced the base of a possibly Holocene clayey sand.

At the La Brea Avenue Transect (Figure 7, site D) evidence for faulting includes quartz diorite apparently thrust over Quaternary alluvium, similar to the Camino Palmero site (Dolan *et al.*, 1997; Earth Technology Corporation, 1993). Shallow groundwater was encountered north of the fault at depths between about 10 feet to 43 feet, whereas south of the fault groundwater was not encountered within the upper 200 feet of borings. They reported the fault dip steepens with depth, ranging from 25° to 60° to the north.

Hollywood - Vicinity of Highland Avenue

A study by MTC Engineering (2012c), located on the southwest corner of Bonita Terrace and Orchid Avenue (locality 11, Plate 1) found no clear evidence of faulting, although a zone of steepening of the bedrock at depth between two bucket auger borings was noted in our review. They encountered basaltic volcanic bedrock, and they reported clean sandy gravel in each of the bucket auger borings was in sharp contact with the bedrock. Rounded cobbles up to about 10-inch diameter in a fine- to coarse-grained sand matrix, and clean sand layers were encountered directly overlying the bedrock. Our review of this data suggests the marine abrasion platform previously discussed for sites in West Hollywood (localities 1 through 6) may exist in this part of Hollywood.

In studies by Leighton Consulting (2011) and GeoPentech (2013a; 2013b) at 1805 Highland Avenue, evidence was reported for at least three faults at this site (locality 12). Groundwater steps and discontinuous stratigraphy across the site suggest several fault strands may exist within a broad zone of faulting at this site. Three fault strands appear to displace an earliest Holocene/late Pleistocene horizon (approximately 11-14 thousand years old) and at least one of the strands may displace late Holocene sediments (Geopentech, 2013b). Studies are on-going to further characterize the location and orientation of the fault strands, recency of activity, and how these features relate to faults mapped at the site directly to the east.

Studies performed at 1840 Highland Avenue (locality 13) by LAW/Crandall (2000) and GeoPentech (2001a, b; 2013c) found evidence of several well-constrained fault strands crossing the northern portion of the site. The faults in the northern and central portion of the site were judged to be active based on three distinct groundwater steps and offsets in stratigraphic units (including Holocene deposits) observed in continuous core borings and CPT transects. They reported faulting consisted of steeply north-dipping faults (about 80^0) for these northern strands, and have established a building setback zone. In the southern portion of the site, they reported continuous Holocene and Pleistocene soils and stratigraphic units underlie this portion of the site, precluding any additional young faulting. Just to the east of this site, at Las Palmas St., unpublished studies cited by Crook and Proctor (1992) found a 30-foot difference in groundwater levels between two borings on opposite sides of this fault zone.

A study for the Los Angeles MetroRail project (Converse *et al;* 1981, 1983) found evidence that the Hollywood Fault is located south of Yucca Street at Cahuenga Boulevard (locality 14). Their boring #28B, also described by Crook and Proctor (1992), encountered alluvium to a depth of 120 feet, followed by 10 feet of brecciated sandstone, alluvium and siltstone, which in turn overlies alluvium to the total depth at 205 feet. The location for this fault corresponds well with differences in groundwater reported at locality 15 to the east, and a groundwater barrier just south of Yucca Street to the west (F. Denison, 1991, p.c. *in* Dolan *et al*., 1997).

Hollywood - Vicinity of Hollywood Boulevard and Vine Street

Geotechnical studies were done by Langan and Associates (2012a; 2012b) for the proposed Millennium Hollywood development located south of Yucca Street, between Ivar Avenue and Argyle Avenue (locality 15). Although faulting was not specifically identified in these reports, our review of the subsurface data from several borings indicated groundwater depth differences across the site as well as significant differences in sub-surface materials that support the presence of a fault beneath the site.

Borings from an adjacent project by Group Delta (2006) located at the southwest corner of Argyle Avenue and Yucca Street (locality 16), revealed groundwater elevation differences across the site. Review of this data when compared to borings from the adjacent sites, also suggest a significant difference in groundwater elevation between this project and the Hollywood Millennium site to the south (locality 15).

Just east of Argyle Avenue and north of Hollywood Boulevard (locality 17) geotechnical studies were done for the Blvd6200 project (Geotechnologies, Inc., 2006 and 2013). Although faulting was not specifically identified in these reports, a strong break in slope existed across the northern portion of this parcel that has been interpreted as a fault scarp by previous researchers as well as in our review and field reconnaissance. Additionally, geotechnical borings drilled for the project encountered higher groundwater levels in the northern portion of the site, and deeper groundwater levels in the southern portion of the site with recommendations made for a dewatering system. A review of the boring logs and cross sectional analysis reveals the stratigraphy does not appear very continuous in this area, and the drop in groundwater level appears to correlate well with the break in slope at the surface. These two pieces of evidence suggest active faulting exists along a west-northwest trend at this location.

West Los Feliz area

Only one geotechnical study has come to our attention in this area which might bear on the presence of active faulting. A study was conducted by Pacific Soils Engineering (1961), for tract development located north of Los Feliz Boulevard, between Fern Dell Drive and Winona Boulevard at locality 18. They identified a northeast-trending bedrock fault at the northern end of the property, and although the fault appeared to juxtapose granitic basement rock against alluvium, the fault was judged to be not active. A water seep was noted after grading (Pacific Soils Engineering, 1962) that was not on the identified fault, but it did lie along an interpreted geomorphic scarp within the alluvial fan deposits, as noted in our review of vintage air photos (discussed later in this Fault Evaluation Report). Previous mapping by Neuerburg (1953) in this area indicates two roughly parallel fault traces that were mapped in the granitic bedrock northeast of the site and likely project toward this development. The lack of any geomorphic expression in crystalline rock, as well as their location and orientation, suggest that these two fault traces are not active.

Los Angeles River/Atwater Area

Along the west side of Riverside Drive near Los Feliz Boulevard (locality 19), two fault/geotechnical studies were completed by AMEC (2012, 2013) for the City of Los Angeles Northeast Interceptor Sewer (NEIS) project. The 2013 study included data from two seismic reflection surveys, performed by Advanced Geoscience, Inc. (2013). These seismic surveys

identified at least 6 fault traces which dip steeply (north and south) and are interpreted to include the north-dipping main trace of the Hollywood Fault Zone. Advanced Geoscience, Inc. (2013) reports that the main fault and several secondary faults appear to be trending to the east, based on two sets of seismic data. Evidence for faulting found in borings along the transect line includes: thickening of young alluvium across several borings within the fault zone, a thickening and offset of older alluvium deep within closely-spaced borings, and deeper offsets within sedimentary bedrock (Puente Formation) and quartz diorite. Artesian groundwater conditions are also reported within a narrow zone as noted in a cross-section prepared by the City of Los Angeles, included here as Figure 9.

In the Atwater area, well data as reported by State Water Rights Board (1962) indicate a steep drop in groundwater levels near the mapped fault trace. They reported shallow Puente Formation bedrock was encountered in borings drilled on the north side of a concealed fault trace, and also noted rising water levels in the area of Los Feliz Boulevard. Fault displacements were postulated to have affected the base of the valley fill within the Los Angeles River narrows area, notably where a small bedrock knob is present north of the fault and has “created a constriction in the water-bearing materials” and a depression in the groundwater level immediately to the south. Further, they reported fairly thick packages of clay-rich sediments predominate to the north, and gravelly sands to the south, generally near San Fernando Road and the northern projection of Silver Lake Boulevard.

Williams and Wilder (1971) reported a steep south-facing groundwater gradient exists about half way between the Forest Lawn wells (near Glendale Blvd and San Fernando Road), and the Pollock Field (near Garden Ave. and Fletcher Dr.). In their cross section, they indicated a gray organic clay layer is vertically offset by a steeply south-dipping fault, with down to the south displacement of the clay. Converse, Davis and Associates (1970) reported on the “top of clay” layers within groundwater wells in the Atwater area. Review of the well logs indicated a groundwater level differential and top of clay differential in the area near Fletcher Dr. and San Fernando Road. Our own review of several of the well logs from the Converse, Davis and Associates report, reveals thick clay zones at depth that appear to be discontinuous in the vicinity of Silver Lake Boulevard and La Clede Avenue. This location is similar to the groundwater differential reported by Williams and Wilder (1971).

Gravity data from Chapman and Chase (1979) reveals a steep gravity gradient along the fault that coincides at depth with the eastern projection of the Hollywood Fault Zone.

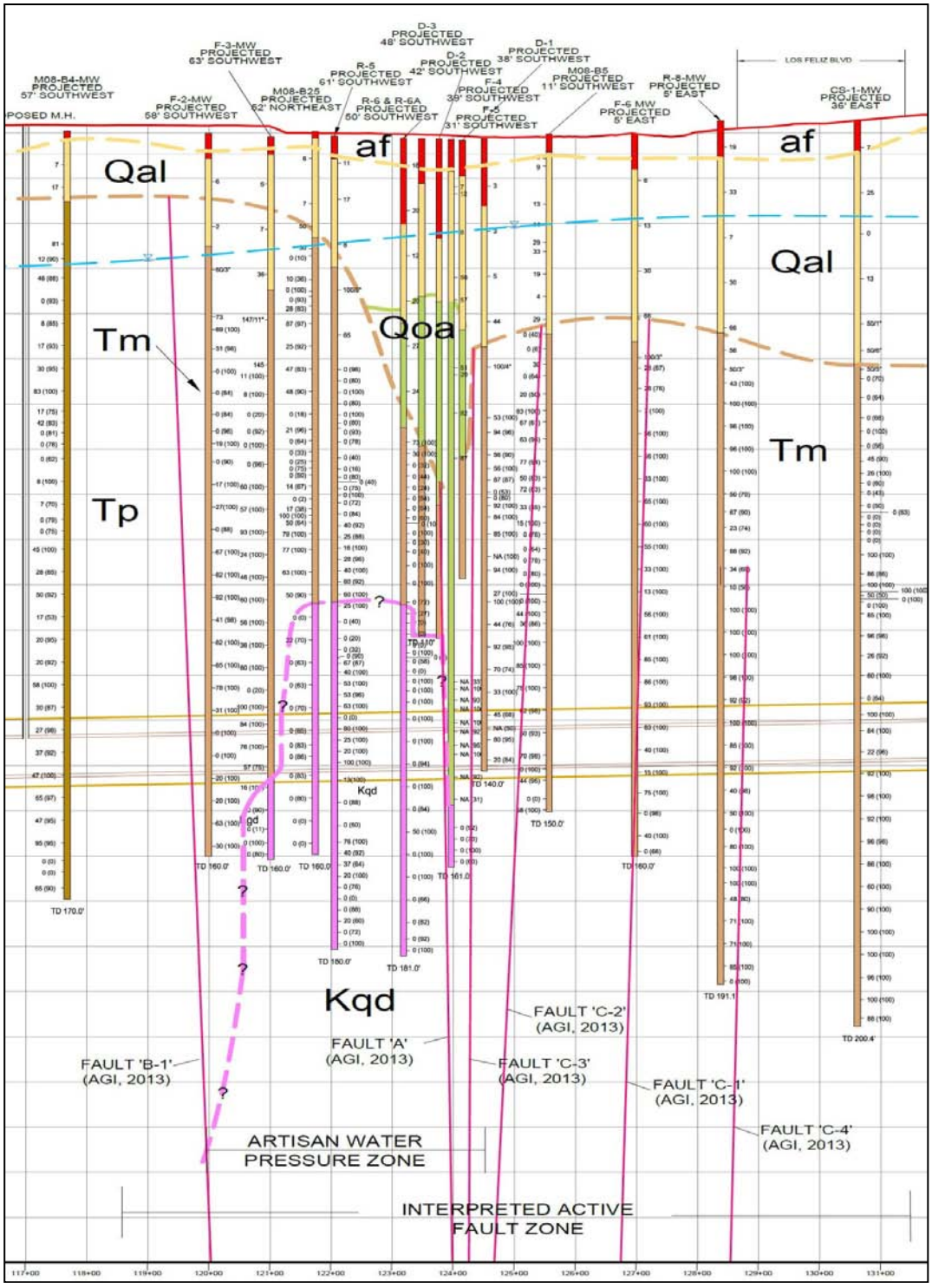

Figure 9 – Cross section with Fault 'A' interpreted as the main trace within the active fault zone. Note differential thickness of recent alluvium, and depth of older alluvium between Fault 'A', and Fault 'C-3'. Kqd = Cretaceous quartz diorite; Tp = Puente Formation; Tm = Modelo Formation; Qoa = Quaternary older alluvium; Qal = Quaternary alluvium; af = artificial fill.
Cross section modified from City of Los Angeles Geotechnical Engineering Group (2013). Grids are 10' in height and 100' in width.

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AERIAL PHOTO, LIDAR, MAP INTERPRETATION, FIELD OBSERVATIONS and GEOMORPHIC ANALYSIS

(for referenced localities, see Plate 2)

The following geomorphic analysis is based on review of vintage aerial photographs, topographic maps, LiDAR data and field observations. Field observations were performed during November and December 2013 for approximately 3 days.

DATA SOURCES

Vertical aerial photographs – 1927-1928

Vertical aerial photographs from two flights (1927 and 1928) by Fairchild Aerial Surveys were studied in stereo pairs to identify and interpret landforms along the fault traces. Development of the landscape (grading for streets, houses and other structures) even at this early date make interpretation a challenge. However, many features of the landscape are still discernible.

Historic oblique photographs – 1921-1938

Vintage oblique aerial photographs provided a unique view of the historic landscape, providing illuminating images of much of the landscape prior to full development. These images provided an independent check on the features interpreted from vertical aerial photos and topographic maps. The vintage photos were taken by Spence Aerial Surveys and Fairchild Aerial Surveys and are archived in the Geography Department at the University of California, Los Angeles.

Historic maps – 1926-1928

A remarkable series of topographic maps was prepared in the 1920s for the County of Los Angeles at a scale of 1:24,000. These were published in the atypical format of a 6-minute by 6-minute quadrangle as opposed to the more standard 7.5-minute map format. These maps are notable for two reasons. First, they capture the landscape at a time when much of the local land development had either not occurred or was of a less disruptive nature. Secondly, these maps have 5-foot contours and were drawn by topographers with an excellent sense of landform. As a result, these maps provide a very illuminating view of the landscape and reveal numerous features that are suggestive of tectonic influences. We analyzed the topography as depicted on the Hollywood and Burbank 6-minute quadrangles from 1926 and the Glendale 6-minute quadrangle from 1928 (all at an original scale of 1:24,000).

We prepared an interpretive map from these topographic bases, delineating locally incised drainages and a complex set of nested alluvial fans being shed from the Santa Monica Mountains (Figures 11, 12, 13, 14 & 17). In particular we have made note of abrupt transitions from erosion (the channels) to deposition (the fans) and, where these are aligned with other corroborative or suggestive features, have interpreted fault movement to explain this change in sedimentary regime.

LiDAR

A digital elevation model derived from a LiDAR survey of Los Angeles County (Los Angeles Regional Imagery Acquisition Consortium, 2006) was useful for verifying some of the geomorphic features identified from other sources as well as detecting additional features.

DISCUSSION

To aid discussion we have divided the fault zone, as it crosses the Hollywood Quadrangle, into five segments (Figure 10). The westernmost segment (segment 1), from within the city of West Hollywood, trends northeast along the southern edge of the Santa Monica Mountains, primarily as a single trace. Segments 2 and 3 trend more east-west and are expressed in several near-parallel left-stepping fault strands. Segment 4 trends east-northeast, paralleling Los Feliz Blvd., and consists of at least two sub-parallel fault strands. Eastward from the Los Angeles River we describe Segment 5 which appears to consist of a single surface trace until the eastern boundary of the map.

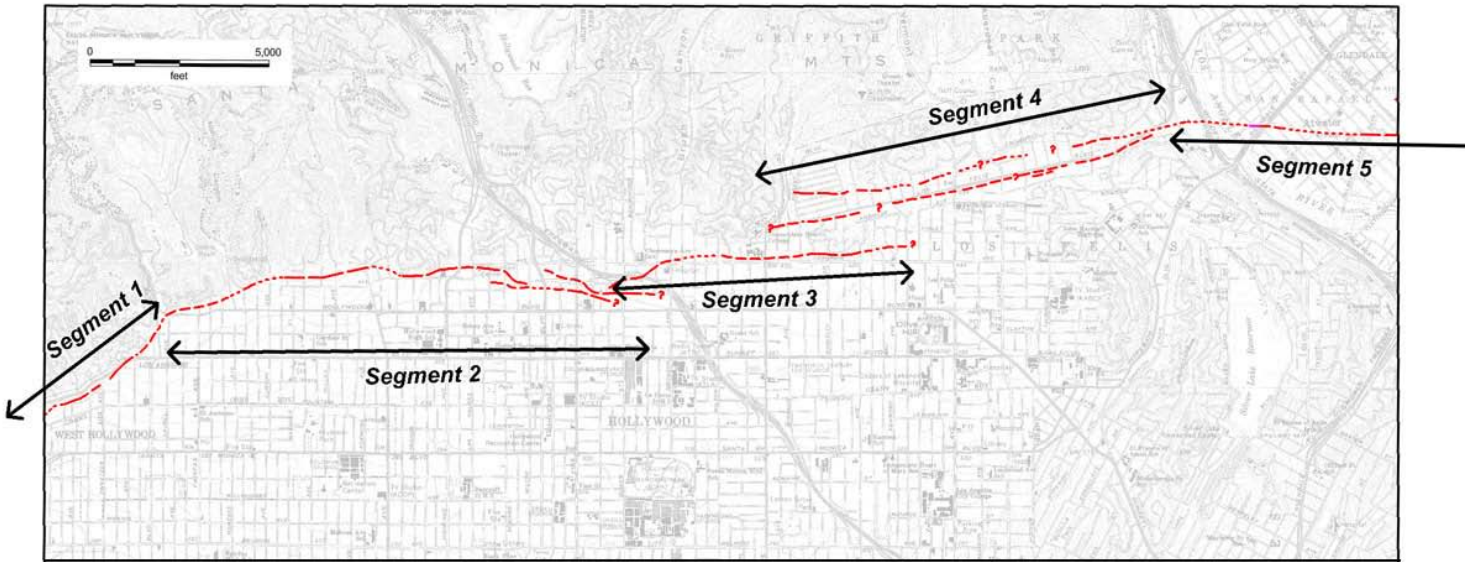

Figure 10 - index to fault segments discussed in the text. Red lines are faults identified for zoning.

Segment 1 extends from the west margin of the map northeasterly to the vicinity of Laurel Canyon (Figure 11). The fault is expressed here by a well-developed scarp along the base of the hills (S1a). Some less-prominent scarps, north of the identified fault, may be related to a paleo-shoreline identified in the area (WLA, 1998c). Several small scarps near the base of the mountain front on Plate 2 (Site A1) are thought to be related to this paleo-shoreline feature. Several subtle slope breaks in the ground surface to the southeast may indicate additional splays, but these are less certain and may just mark the distal extent of fan deposition. A prominent scarp-like feature (S1b) at the edge of the map is crossed, on projection to the west, by fault studies which found no evidence of active faulting along that trend. The young Holocene-age alluvial fan emanating from Laurel Canyon has entirely obscured surface evidence of the fault in that location.

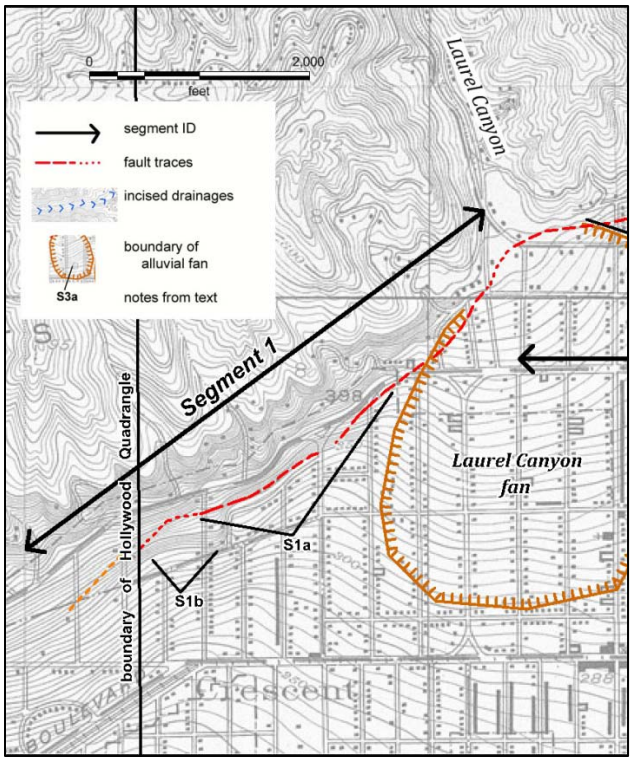

Figure 11 - Geomorphic features along Segment 1. Base map from 1926 Hollywood and Burbank 6' quadrangles.

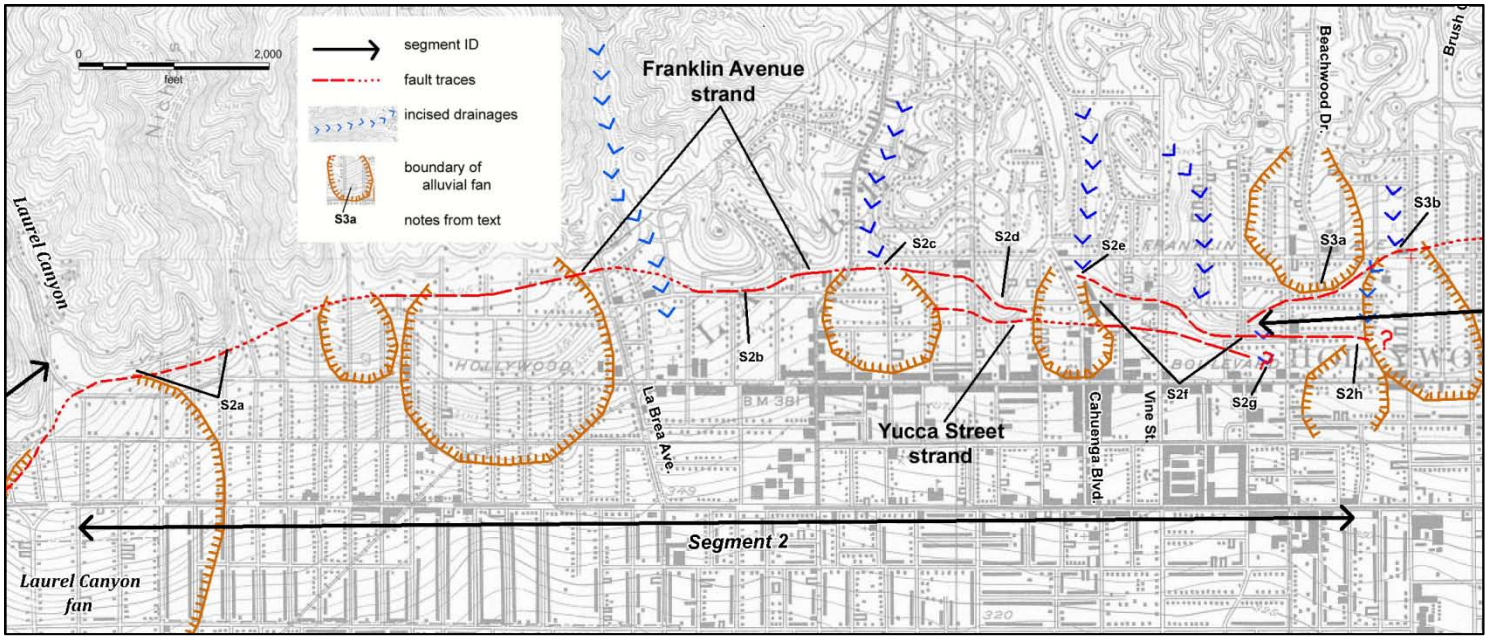

Figure 12 - Geomorphic features along Segment 2. Base map from 1926 Hollywood and Burbank 6' quadrangles.

Segment 2 trends east-west from Laurel Canyon to Beachwood Drive (Figure 12). The western portion is distinguished by a slightly sinuous mountain front with small fans emanating from small to medium-sized canyons. The mouths of these canyons are in rough alignment as far east as La Brea Avenue, suggesting some linear structural control, but the fault may be buried and overlapped by fan deposition so that the fault trace would be somewhat south of the current slope break. Oversteepened and eroded slopes at the south end of several intervening ridges are interpreted to be related to faulting. More subtle breaks in slope gradient to the south are possibly related to the distal edges of the small alluvial fans and cannot be ascribed with any certainty to faulting (Plate 2, site A2). The south end of the first ridge to the east of Laurel Canyon (S2a) appears oversteepened and is likely a fault scarp. Dolan *et al.* (1997) also noted the scarp in this area. A break in slope also veers away from this scarp and across a local fan coming off of the slopes, suggesting young displacement. Subtle tonal lineaments (Plate 2) suggest the fault location to the east across the Nichols Canyon drainage.

East of La Brea Avenue the fault bends or steps southward to create the steep southern front of a prominent knoll (S2b) and several other ridges to the east. Dolan *et al.* (1997) found this Franklin Avenue strand to be the most prominent south-facing scarp in the downtown area. The Yucca Street strand, which exhibits a 5-6 m high scarp, also acts as a groundwater barrier west of the alluvial fan at Cahuenga Blvd.

The drainage from Cahuenga Pass, as it crosses this trend, appears as if it is deflected in a left-lateral sense (S2c) and very shortly changes from an incised channel to a depositional fan, suggesting a change in base level at this point. Another southward step is suggested by the south-trending ridge west of Cahuenga Boulevard (S2d) and then expression is lost across the drainage descending from the Hollywood Reservoir area. However, the channel from that canyon appears to have been incised above the mouth of the canyon (S2e), switching to a depositional mode to the south, which suggests a base level change at a fault at that location. The fault location eastward is indicated by a very steep south margin to the hillslopes (S2f). A distinct change in slope gradient is also visible across several north-south streets in this area in both site reconnaissance and air photo interpretation, including Vine and adjacent streets (Plate

2, site A3). The eastern extension of this fault coincides with the initiation of a small depositional fan indicated in the vintage topographic map (S2h), with an incised drainage visible just to the north in the 1927 and 1928 aerial images. A southern fault splay, indicated to the west from geotechnical studies (adjacent to Vine Street), is supported by the upstream incision of another small drainage near the projected crossing of that fault (S2g).

The Hollywood Bowl Fault is mapped north of Segment 2. Trending northeast, it is discontinuously marked by erosional fault line features, such as topographic saddles and some degraded slope facets (see features identified by Dolan *et al.*, 1997, depicted herein on Plate 2, site A4). These geomorphic features closely follow the mapped fault contact between granitic bedrock to the north and Cretaceous and Tertiary sediments to the south.

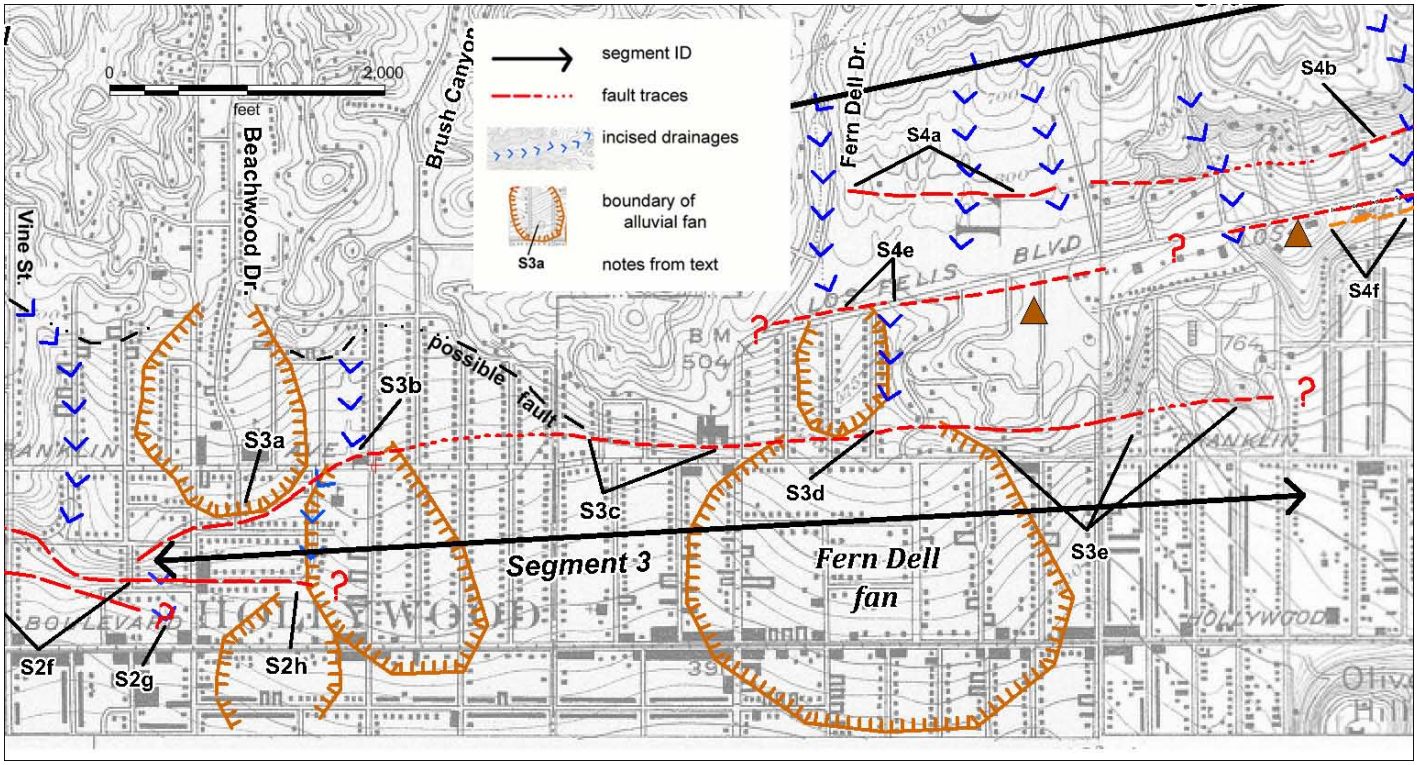

Figure 13 - Geomorphic features along Segment 3. (brown triangles indicate saddles discussed in Segment 4) Base map from 1926 Burbank and 1928 Glendale 6' quadrangles.

Segment 3 overlaps Segment 2 at its west end and Segment 4 at its east end (Figure 13). It appears to function as a transition in the stepover between those two segments. The western end is suggested by a slight steepening of the fan gradient below Beachwood Drive and Franklin Avenue (S3a), and an incision to deposition transition just to the east (S3b). The main alluvial fan of Brush Canyon conceals the trace for a short distance and then the approximate fault location is indicated by the abrupt slopes just north of Franklin Avenue (S3c, S3e). This prominent scarp is also marked by the initiation of fan deposition from the Fern Dell drainage (S3d) as well as a break in the fan gradients. Geomorphic expression of this fault segment dies out about 0.5 km west of Vermont Avenue.

There is another line of subdued and discontinuous scarps, mapped by Dolan *et al.* (1997; also see Figure 6), that splays west-northwest from the main fault trace. This possible fault appears to die out with no expression across Brush Canyon or at the Hollywood Reservoir

drainage, although the Beachwood fan might be observed to begin at the postulated fault. Based on aerial photo and field reconnaissance we suggest that these features may be merely related to the break in slope along the mountain front, and not directly related to Holocene faulting.

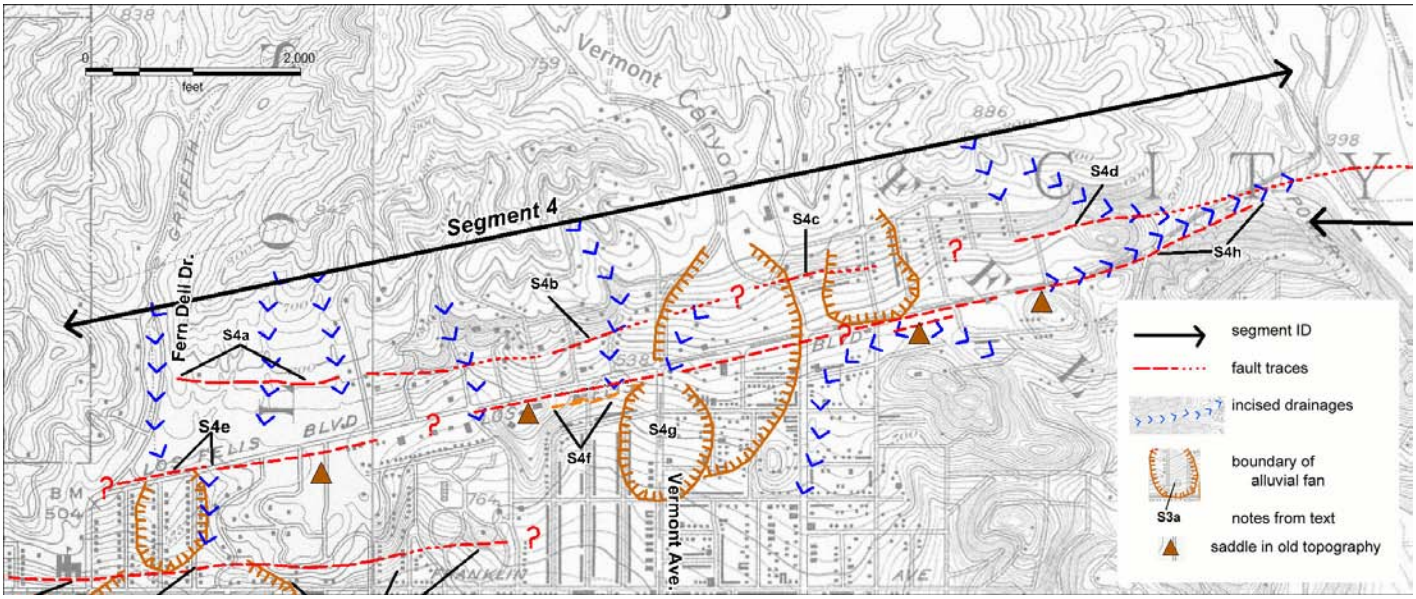

Figure 14 - Geomorphic features along Segment 4. Brown triangles locate prominent saddles along the Los Feliz Boulevard fault strand. Base map from 1926 Burbank and 1928 Glendale 6' quadrangles.

Segment 4 overlaps Segment 3 at its western end and there are geomorphic indications of at least two parallel faults in this segment (Figure 14). This segment is grossly indicated by an east-northeast trending trough that has been breached by erosion. Los Feliz Boulevard follows this trough.

A northern strand is defined at its western end by an offset fan surface (Plate 2, site A5) that is observable in vintage aerial photography as shown on Figure 15. There is at least one principal fault indicated by the steepest drop in the surface (S4a) and possible secondary faults between the principal strand and Los Feliz Boulevard indicated by additional local breaks in the slope gradient. Further east, this fault, as a single strand, is intermittently expressed by steepened slopes along trend (S4b, S4c); the fault is locally overlain by younger fans, such as that emanating from Vermont Canyon. At its eastern end it passes through a local topographic saddle (S4d) and then appears to join the Los Feliz Boulevard fault strand.

What we consider the principal active fault strand has few sharply defined indicators but is taken as the axis of the geomorphic trough that is followed by Los Feliz Boulevard. The general nature of this trough is indicated by several remnants of its eroded south margin with prominent saddles (Figure 14, brown triangles) along the fault trace, and is further confirmed by several profiles constructed from the LiDAR DEM.

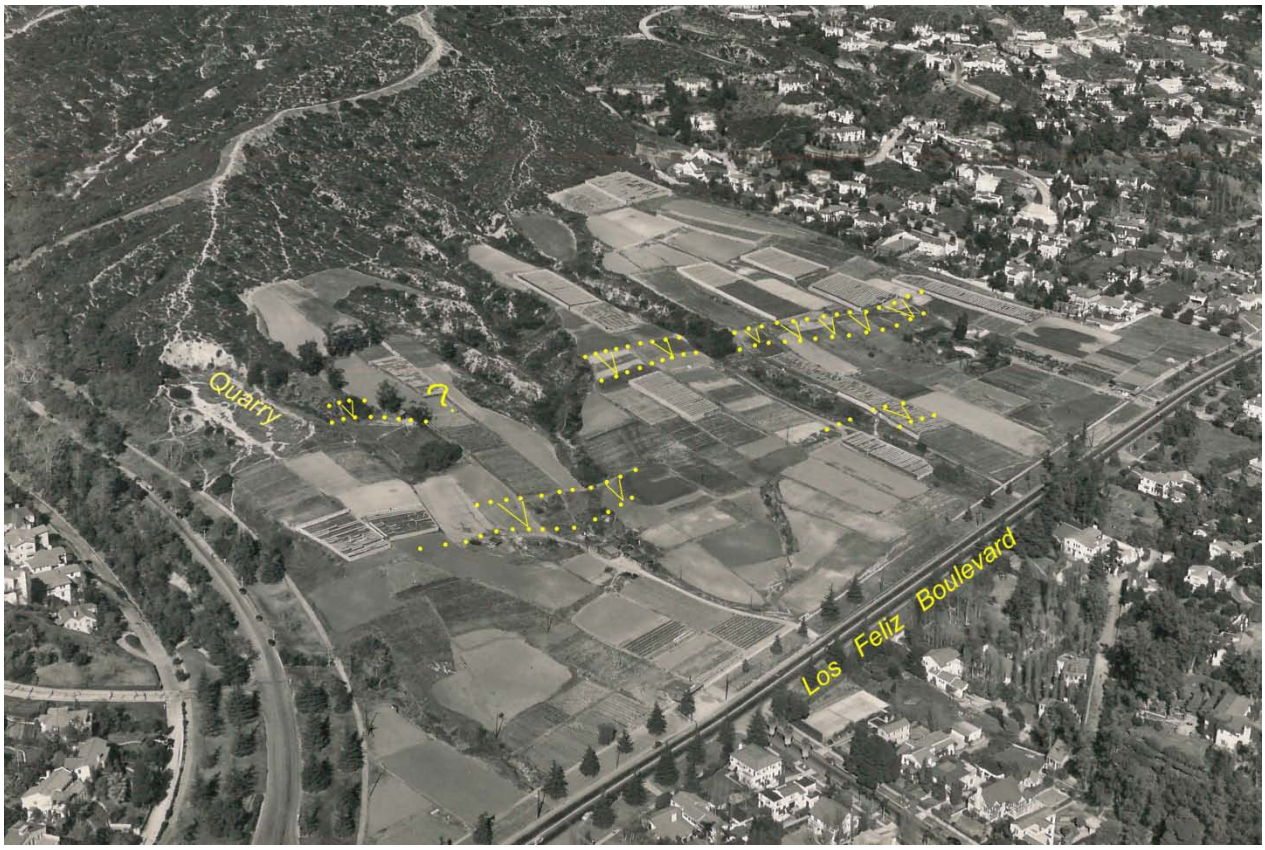

Figure 15 - Oblique aerial view of the Mead Estate from 1928, showing principal and minor scarps (Yellow dotted lines) extending across the property. Site is located at the west end of Los Feliz Boulevard (Plate 2, site 5). (Photo by Fairchild Aerial Surveys, 2/25/1938, from UCLA Geography Department).

There are several additional detailed observations that provide better location control and interpretive confidence for this fault. At locality S4e there is an apparent left-lateral offset of the Fern Dell drainage that is on the order of 130 m. A small, steep and inferentially young fan had, prior to modern development, started to build below the cut-off segment of this drainage that lies upstream. Further east, just west of Vermont Avenue, an oblique aerial photo from 1921 reveals some lineaments in a then-recently graded slope below Los Feliz Boulevard (S4f; Figure 16). These lineaments, parallel to the road, may be faults. At Vermont Avenue there is a small young fan that appears to be forming just south of the fault (S4g). Contours on the 1928 topographic map suggest a subtle swale may have been evolving just upstream of the fault at this point across an older, now abandoned, fan that drained Vermont Canyon. The fault location is suggested at the east end of this segment by a linear eroded drainage (S4h) and a coincident tonal lineament visible in the vertical aerial imagery.

A third fault strand, still farther south, may be an eastern extension of Segment 3 but it lacks any youthful expression in this area. Although this strand was previously mapped by others, as shown on Plate 1, field checking and vintage air photo review noted only gentle fan slopes and granitic bedrock outcrops with no indication of any youthful fault-related features along the trace.

Figure 16 - Oblique aerial photo near the intersection of Vermont Ave. and Los Feliz Blvd. showing fresh grading south of Los Feliz. Blvd. Lineaments (highlighted with red) are possible fault traces. (Photo by Spence Aerial Photos, circa 1921; from UCLA Spence collection).

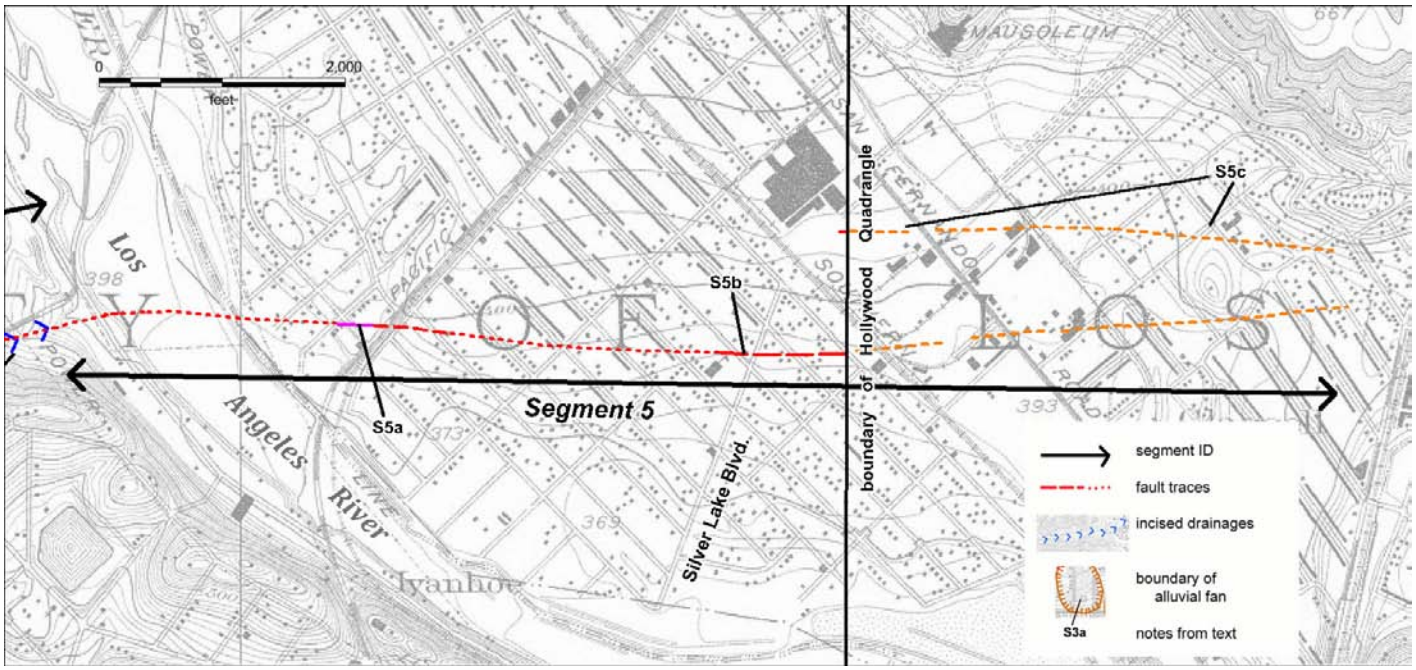

Figure 17 - Geomorphic features along Segment 5. Base map from 1928 Glendale 6' quadrangle.

Segment 5 continues eastward across the abandoned flood plain of the Los Angeles River in the Atwater area (Figure 17). An elongate knoll, just east of the river, has its southern terminus at the inferred fault location (S5a) where there are also some faint tonal lineaments and a possible scarp along the fault. Farther east the Hollywood Fault is expressed as a series of low, discontinuous breaks in the flood plain surface with south side down orientation, as previously observed by Weber (1979; 1980). At the eastern edge of the quadrangle the drop is as much as 2-3 m (Plate 2, site A6). There is a possible pressure ridge where the fault crosses Silver Lake Boulevard (S5b); it is visible in the elevation of several residential lots in spite of the roads having been graded level. Although scarps are noticeable in several of the streets, some of the previously mapped features (scarps and lineaments) have been obscured by development.

East of the map boundary there are additional features to support the location of the fault as it steps northward, including aligned tonal and vegetation lineaments (S5c). The pair of faults appear to define a knoll evident in the older topographic map; the knoll is separated from the adjacent hills by the northern strand.

DISCUSSION and CONCLUSIONS

Segment 1

The trace of the Hollywood Fault has historically been mapped very close to the mountain front in this area (Hoots, 1930; Dibblee, 1991; Dolan *et al.*, 1997). Recent geotechnical studies within the city of West Hollywood have located the principal active trace of the fault at several sites (see Plate 1; figure 3). These studies have also shown that, although the fault is concealed by young sediment in many areas, the Holocene deposits are quite thick and have been displaced by recent faulting (Harza, 1998; ECI, 2001a; LAW/Crandall, 2001; WLA, 2004)). Some scarps, north of the principal fault trace, have been shown to be related to an ancient shoreline and these are not associated with any evidence of active faulting. Several subtle slope breaks further out from the mountain front are ambiguous in origin and not directly attributable to faulting.

Segment 2

This segment of the fault zone is generally located by relatively abrupt, though intermittent, scarps. The fault location has been confirmed by several studies, including those by Dolan *et al.* (1997, 2000), Geopentech (2001 & 2013c) and LAW/Crandall (2000) and studies for the Los Angeles Metro Rail subway project (Earth Technology Corporation, 1993). Additional locations are inferred from subsurface data generated in other geotechnical investigations (Langan 2012 a, b; Group Delta, 2006; Geotechnologies, 2006, 2013). Holocene activity has been documented by Dolan *et al*. (2000) and is also suggested by the interpreted fault effects on young fan development.

The Hollywood Bowl Fault, although identified in bedrock mapping (Dibblee, 1991), and possible scarps mapped by Dolan *et al.* (2000), has only very subdued geomorphic expression that is likely erosional in origin or at least erosionally modified.

Segment 3

Segment 3 partly follows the mapping of Dolan *et al.* (2000), but we have made some different associations across the Brush Canyon fan, connecting those traces that seem to have the strongest influence on recent fan deposition and incision. The fan incision/deposition transitions provide some of our fault location evidence, in addition to interpreted scarps at the base of the hills.

The effects on the fans, as well as an inferred role in transferring slip between segments 2 and 4 suggest Holocene activity on this segment. This fault has been mapped to continue eastward, to join with a bedrock fault mapped just west of the Los Angeles River (Dibblee, 1991; Dolan *et al.,* 1997), but we see little evidence of activity on this eastern extent and, instead, infer that slip is being transferred to the faults of Segment 4. The northern trace of Dolan *et al.* (2000), which cuts across the mouth of Brush Canyon and Beachwood Drive, does not appear as youthful and dies out to the west with little evidence of fault displacement.

Segment 4

This is a somewhat enigmatic fault segment, having at the same time the least geotechnical evidence and little detail in the way of previously mapped fault traces but having some of the strongest geomorphology to indicate the presence of the fault zone.

The northern fault trace was shown by Dibblee (1991) as entirely concealed. Dolan *et al.* (1997, 2000) mapped the fault on the basis of the steepened slopes to the north. Weber showed a less continuous surface expression. We could verify discontinuous weak scarp segments approximately as shown by Weber, but the best evidence of this fault is in the scarps and offset fan surface visible in the vintage images at the west end of the fault (e.g. Figure 15). However, no corresponding features could be seen on further projection to the west. We judge this fault as likely Holocene based on the prominent scarps and its association with other elements of the fault zone.

What we infer to be the principal trace of the fault, roughly followed by Los Feliz Boulevard, had not been previously identified except for a short lineament mapped by Weber. We note that this lineament defines a subtle geomorphic trough indicated by a few eroded remnants of its south margin. Additional evidence comes from the apparent effect on the Fern Glen and Vermont Canyon drainages.

A southern fault, shown by both Dibblee (1991) and Dolan *et al.* (1997, 2000) about 1/3 of a kilometer south of Los Feliz Boulevard, is well expressed geomorphically to the west (part of Segment 3) and in the bedrock to the east (from Lamar, 1970). There may well be a buried continuous fault here but it lacks geomorphic evidence of recency in the central and eastern portions. It is also possible that the eastern bedrock segment of this fault connects to the zone of differential subsidence and the hypothetical Santa Monica Fault extension of Hill *et al.* (1979), discussed below, but there is no surface or subsurface data to support this connection.

Segment 5

The eastward continuation of the Hollywood Fault across the Los Angeles River valley, and possible connection with the Raymond Fault, has been shown in various locations by Dibblee (1991), Hill *et al.* (1979), and Weber *et al.* (1980). Most of these fault representations are shown as concealed and have been poorly constrained. The trace that we have mapped is based on borings and seismic studies along the west side of the Los Angeles River for the City of Los Angeles Northeast Interceptor Sewer Project (NEIS) by AMEC (2012 & 2013) and Advanced Geoscience, Inc. (2013), and geomorphic features mapped by Weber *et al.,* (1980), and is further supported by several groundwater studies and groundwater data (Converse, Davis and Associates, 1970; State Water Rights Board, 1962; Williams and Wilder, 1971).

Activity of this strand is based on detailed subsurface investigations from the NEIS project, tonal lineaments and breaks in slope observed in vintage air photo review and field reconnaissance, and analysis of subsurface clay layers within the groundwater well data (Converse, Davis and Associates, 1970).

Other Faults

The southern fault zone ("Santa Monica Fault") mapped by Hill *et al.* (1979) (or alternately the North Salt Lake Fault by Hildenbrand *et al.*, 2001), does not have any clear evidence as a surface fault. The zone of differential subsidence identified by Hill *et al.* (1979) is from 130 to as much as 400 meters wide and may be attributed to causes other than active fault displacement. There is no indication in the literature, or in our observations, of Holocene surface rupture along this fault projection.

RECOMMENDATIONS

Recommendations for encompassing faults in Alquist-Priolo Earthquake Fault Zones are based on the criteria of "sufficiently active" and "well-defined" (Bryant and Hart, 2007). The principal traces of the **Hollywood Fault** as shown on Plate 3 are recommended for zoning as they are mostly well-defined and believed to be active. The Hollywood Bowl Fault does not have any indication of recent activity and is not recommended for zoning. The southern strand of segments 3 and 4, south of Los Feliz Boulevard, is only well expressed within segment 3 and the remainder of that trace is not recommended for zoning.

Janis L. Hernandez
PG 7237, CEG 2260
February 14, 2014

Jerome A. Treiman
PG 3532, CEG 1035
February 14, 2014

I have reviewed and concur with the recommendations in this report.

CEG 1649
2/14/2014

AIR PHOTOS AND DIGITAL IMAGERY REVIEWED

Fairchild Aerial Surveys	Flight 113	1927 b/w Stereo-pair	scale 1:18,000 vertical	Frames:74 – 75, 121 – 123, 161 – 164, 188 – 190, 226 – 229, 262 – 264
Fairchild Aerial Surveys	Flight C-300	1928 b/w Stereo-pair	scale 1:18,000 vertical	Frames: K20 – K23, K43 – K47, K72 – K74, K89 – K90, K115 – K118, K141 – K144, K163 – K164, K184 – K187, K200 – K203
Spence Aerial Photography	114, Sec 14	1921	Oblique	Western Ave & Los Feliz Blvd
"	115	1921	Oblique	Vermont & Franklin
"	115	1921	Oblique	Vermont & Franklin – Janss Investment
"	#6126 Sec. 7	06-1924	Oblique	Anthony's Home – Hollywood, Los Feliz Blvd.
"	#6069	unk.	Oblique	Los Feliz Heights
"	#5750	unk.	Oblique	Los Feliz Blvd. near Vermont, Hollywood
"	#2993	unk.	Oblique	Hollywood north of Avenue between Vermont & Commonwealth
Fairchild Aerial Surveys	Group 31B	2-21-1938	Oblique	0-5476: Mead Estate – looking NE along Los Feliz from Western – Glendale in background
"	Group 31B	2-25-1938	Oblique	0-5497: Mead Estate – looking N from Los Feliz & Western
"	Group 31B	2-25-1938	Oblique	0-5500: Mead Estate – looking E on Los Feliz from Western
"	Group 31B	2-25-1938	Oblique	0-5499: Mead Estate – Los Feliz & Western, looking NE

Additional Imagery:

NAIP (National Agriculture Imagery Program): NAIP imagery from 2009 was used as a reference for interpretation of fault-related lineaments and topography. We used a county-wide image of Los Angeles to locate features identified in historical imagery and rectify geotechnical report maps. The images were viewed within the GIS platform (ArcGIS) and interpretation done directly on screen.

Los Angeles Region Imagery Acquisition Consortium: proprietary dataset, LiDAR data acquired 2006. (1.7 m DEM) http://planning.lacounty.gov/lariac

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CALIFORNIA GEOLOGICAL SURVEY
FAULT EVALUATION REPORT FER 253
SUPPLEMENT NO. 1

THE HOLLYWOOD FAULT
in the Hollywood 7.5' Quadrangle
Los Angeles County, California

by
Janis L. Hernandez
Engineering Geologist
November 5, 2014

INTRODUCTION

The Hollywood Fault zone was previously evaluated by Hernandez and Treiman (2014). Traces of the fault zone were found to be sufficiently active and well-defined for zoning under the Alquist-Priolo Earthquake Fault Zone Act (Bryant and Hart, 2007). A preliminary review map showing the recommended Alquist-Priolo Earthquake Fault Zone (APEFZ) for the Hollywood quadrangle in Los Angeles County was released for public comment on January 8, 2014, and the Fault Evaluation Report was issued February 14, 2014.

The public comment period, during which written comments were received by the California State Mining and Geology Board (SMGB), was scheduled to end April 8, 2014, but was extended until May 15, 2014. These public comments were made available to the State Geologist on May 16, 2014, and were formally transmitted to the California Geological Survey (CGS) with comments and recommendations from the SMGB on August 14, 2014.

The purpose of this supplement to the FER is to review and address these public comments forwarded by the SMGB, comment on additional reports sent to CGS after preparation of the FER, and to comment on field observations of fault trenches and other subsurface investigations by CGS after the public comment period. The location of the study area is indicated on Figure 1 and the reader is referred to FER 253 dated February 14, 2014 for other necessary background material (ftp://206.170.189.144/pub/dmg/pubs/fer/253).

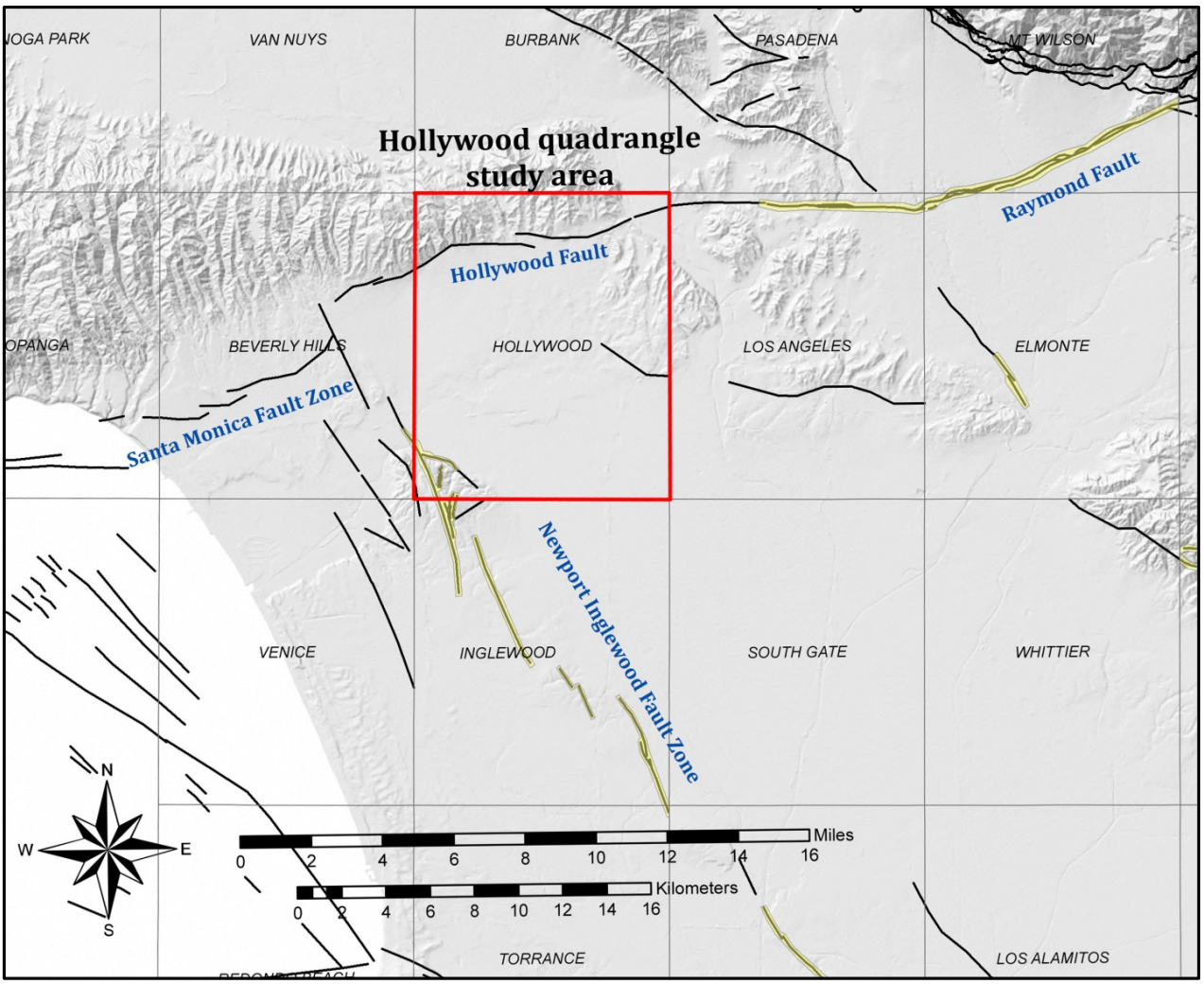

Figure 1- Study area of the Hollywood quadrangle and names of selected faults in the vicinity. Faults within existing official Alquist-Priolo Earthquake Fault Zones are within yellow-shaded boundaries; other faults are indicated in black. Fault strands of the Newport-Inglewood Fault Zone are not a part of this evaluation. Source: USGS Quaternary Fault and Fold Database of the United States (http://earthquake.usgs.gov/hazards/qfaults/).

PUBLIC COMMENTS, AND RESPONSE

All comments received by the SMGB are listed in Table 1. Those comments that present technical data and analysis (noted with "*" in Table 1) are addressed in this supplemental report. Other comments of a non-technical nature fall under authority of the SMGB, and are not addressed herein.

Two of the technical comments noted in Table 1 (a report dated March 11, 2014 from Lettis Consultants International, Inc. (LCI), and a letter with exhibits dated March 11, 2014 by Elkins Kalt Weintraub Reuben Gartside LLP) were superseded by later submittals which included additional interpretation. The April 8, 2014 letter submitted by Elkins Kalt Weintraub Reuben Gartside LLP was a transmittal for the April 8, 2014 LCI report. The latest LCI submittal is addressed here.

Table 1
Chronological Summary of Comments Received from the State Mining and Geology Board
Hollywood Quadrangle Preliminary Earthquake Fault Zones Map

Comment No.	Date	Commenter	Document
1	February 14, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled "*Request for Extension of Comment Period for Preliminary Alquist-Priolo Earthquake Fault Zone Map for the Hollywood Area of Los Angeles County*"
2	February 26, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled "*Public Hearing to Receive Comments on Preliminary Earthquake Fault Zone Map for the Hollywood Quadrangle, Los Angeles County*"
3	March 11, 2014	Lettis Consultants International, Inc.	Letter report titled "*Technical Memorandum, Boulevard 6200 – Assessment of Fault Mapped in FER 253*"
4	March 11, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter with Exhibits titled "*Public Hearing to Receive Comments on Preliminary Earthquake Fault Zone Map for the Hollywood Quadrangle, Los Angeles County*"
5	March 13, 2014	Liner	Letter title "*Public Hearing March 13, 2014, Agenda Item XI (New Business) Item No. 3 (Public Hearing)*"
6	March 13, 2014	Beachwood Canyon Neighborhood Association	Comment letter
*7	March 13, 2014	Group Delta Consultants	Letter titled "*Release of Preliminary Review Maps of Proposed New and Revised Earthquake Fault Zones, Earthquake Zones of Required Investigation, Hollywood Quadrangle*"
8	April 2, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled "*Alquist-Priolo Earthquake Fault Zone Map for the Hollywood Quadrangle*"
*9	April 8, 2014	Elkins Kalt Weintraub Reuban Gartside, LLP	Letter titled " *Technical Review Comments on Preliminary Review Maps of Proposed Alquist-Priolo Earthquake Fault Zone Map for the Hollywood Quadrangle*"
*10	April 8, 2014	Cox Castle Nicholson	Letter titled "*Comments on the Preliminary Earthquake Fault Zone Map for the Hollywood Quadrangle*"
11	April 8, 2014	Armbruster Goldsmith & Delvac LLP	Letter title "*Alquist-Priolo Earthquake Fault Zone Map – Hollywood Quadrangle – Public Comment*"
*12	April 8, 2014	Lettis Consultants International, Inc.	Letter titled "*Revised Technical Memorandum, Boulevard 6200 – Assessment of Fault Mapped in FER 253*"
*13	April 18, 2014	David Perry	Comment letter on Fault Evaluation Report FER-253
*14	May 6, 2014	Group Delta	Report titled "*Fault Activity Investigation*"
*15	August 5, 2014	Group Delta	Letter report titled "Summary of Investigations of 4 Sites – Possible Locations of the Hollywood fault within the Draft Earthquake Fault Zones - Hollywood Quadrangle

In addition to the public comments, new geologic/geotechnical information was received and observations were made in the field subsequent to the 90 day public comment period. CGS evaluated as much new data as possible. To allow CGS time to incorporate new data into the map and supplemental FER, consultants working on fault investigations were informed that new data received before September 15, 2014 would be considered.

One report received on September 16, 2014 is considered in this Supplemental FER; data submitted to CGS after that date was not. Both the public comments received, listed in Table 1, and reports sent directly to CGS up until September 16th, as listed in Table 2, are presented in this supplemental report and organized as in the initial FER, that is, comments and data are discussed in this report by fault segment as shown on Figure 2.

Table 2
Summary of Documents Received outside of those submitted to SMGB for the Hollywood Quadrangle Preliminary Earthquake Fault Zones Map

Date Received	Received from	Document
2/7/2014	City of Los Angeles, Dept. of Engineering	Schmidt, P., and Burnett, F., 2014, Geotechnical Investigation of the Northeast Interceptor Sewer Phase 2A (NEIS 2A) Hollywood Fault Crossing, North American Tunneling Association, Paper # 144, 11 pages.
3/20/2014	City of Los Angeles, Dept. of Engineering	City of Los Angeles, Department of Engineering, Fault Crossing Adjusted Borings 031814_PG, Plate 4.pdf.
4/18/2014	City of Los Angeles, Grading Division	Golder Associates, Inc., 2014a, Surface fault Rupture Hazard Assessment, Proposed Residential and Commercial Development 8150 Sunset Boulevard, City of Los Angeles, CA, Project No. 123-92034-02, dated January 27, 2014.
4/18/2014	City of Los Angeles, Grading Division	Golder Associates, Inc., 2014b, Geotechnical Exploration and Recommendations Report, Proposed Residential and Commercial Development, 8150 Sunset Blvd., Los Angeles, CA, Project No. 123-92034, dated March 24, 2014.
5/27/2014	City of Los Angeles, Dept. of Engineering	City of Los Angeles Department of General Services, Standards Division, NEIS II-A Geotechnical Investigation (Fault Study), Lab No. 140-5916, W.O. No. SZC11777, Geotechnical Services File 060097, dated June 2013
5/28/2014	Metropolitan Transportation Authority Library	Converse Consultants, Earth Sciences Associates, Geo/Resource Consultants, 1984, Geotechnical Report – Metro Rail Project, Design Unit A350, May, 1984.
08/22/2014	City of Los Angeles, Grading Division	Bay City Geology, 2014, Fault Study Investigation, Proposed New Single Family Residence, 1922 N. Oxford Avenue, Los Angeles, CA 90027, Project 1535, dated June 10, 2014.
8/22/2014	City of Los Angeles, Grading Division	Byer Geotechnical, Inc., 2014, Geologic and Soils Engineering Update, Fault Rupture Hazards Investigation, Proposed Apartment, 1769 – 1775 North Sycamore Avenue, Hollywood, CA, Project No. BG 21645, dated April 17, 2014.
8/22/2014	City of Los Angeles, Grading Division	Grover Hollingsworth and Associates, Inc., 2014, Geologic and Soils Engineering Exploration, Proposed Site Grading, Dwelling, Pool, Pool House, Guesthouse and Retaining Walls, 7476 Hillside Avenue and 1830 N. Sierra Bonita Avenue, Los Angeles, Project no. GH15737-G, dated May 20, 2014.
8/22/2014	City of Los Angeles, Grading Division	Irvine Geotechnical Inc., 2014, Geologic and Soils Engineering Exploration, Fault Rupture Hazard Evaluation, Proposed Residence, 1894 N. Stanley Avenue, Los Angeles, CA, Project No. IC 12117-I, dated March 14, 2014.
9/11/2014	Group Delta Consultants	Group Delta Consultants, Inc., 2014b, Fault Activity Investigation, 6230 Yucca Street, SW Corner of Yucca Street and Argyle Avenue, Hollywood Area, City of Los Angeles, California, GDC Project No. LA-1161 A, dated September 3, 2014.
9/12/2014	Group Delta Consultants	Group Delta Consultants, Inc., 2014d, Data from Fault Activity Investigation Report, 1750 Vine Street, Los Angeles, California, 90028, GDC Project No. LA-1191, dated September 12, 2014 (rev. 9/14).
9/16/2014	Group Delta Consultants	Group Delta Consultants, Inc., 2014c, Fault Activity Investigation, Yucca-Argyle Apartments, Champion Site, SE Corner of Yucca Street and Argyle Avenue, Hollywood District, City of Los Angeles, California, GDC Project No. LA-1183A, dated September 7, 2014.

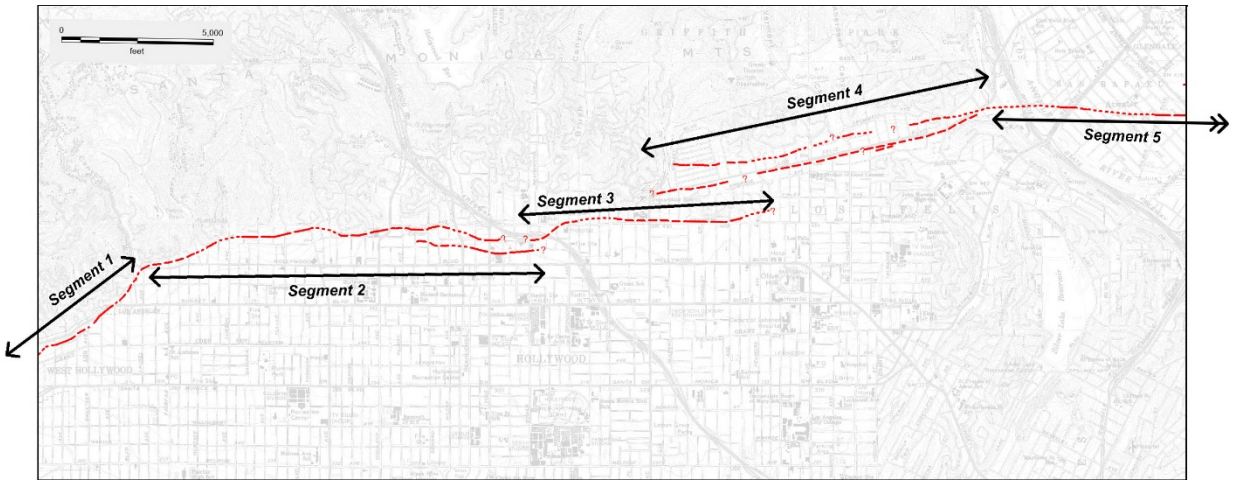

Figure 2 – Index to fault segments discussed in the supplemental report. Red lines are fault traces from the Official Alquist-Priolo Earthquake Fault Zone map, dated 11/6/2014.

ADDITIONAL RECENT STUDIES and COMMENTS

- with appended response in italics.

Site localities also presented on Plate 1 of this supplemental report.

Segment 1

Golder Associates, Inc. (2014a, b) prepared a Surface Fault Rupture Hazard Assessment and Geotechnical Exploration study for a residential and commercial development located on the southwest corner of Sunset Boulevard and Crescent Heights (locality S1-1) as shown on Figure 3. Golder's site evaluation included a CPT transect and hollow stem auger boreholes along the western and southern site boundaries. They interpreted this transect to show continuous alluvial stratigraphy across the site. They reported silts and gravelly sands deposited less than 7 thousand years ago (ka) to depths of about 40 feet. Lower deposits ranged in age from 9 ka to 13 ka at depths of about 60 to 80 feet. They concluded the site has not had major disruption from Holocene faulting.

The data presented by Golder Associates are consistent with the interpretation presented in the initial FER that the Hollywood Fault lies north of this site as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

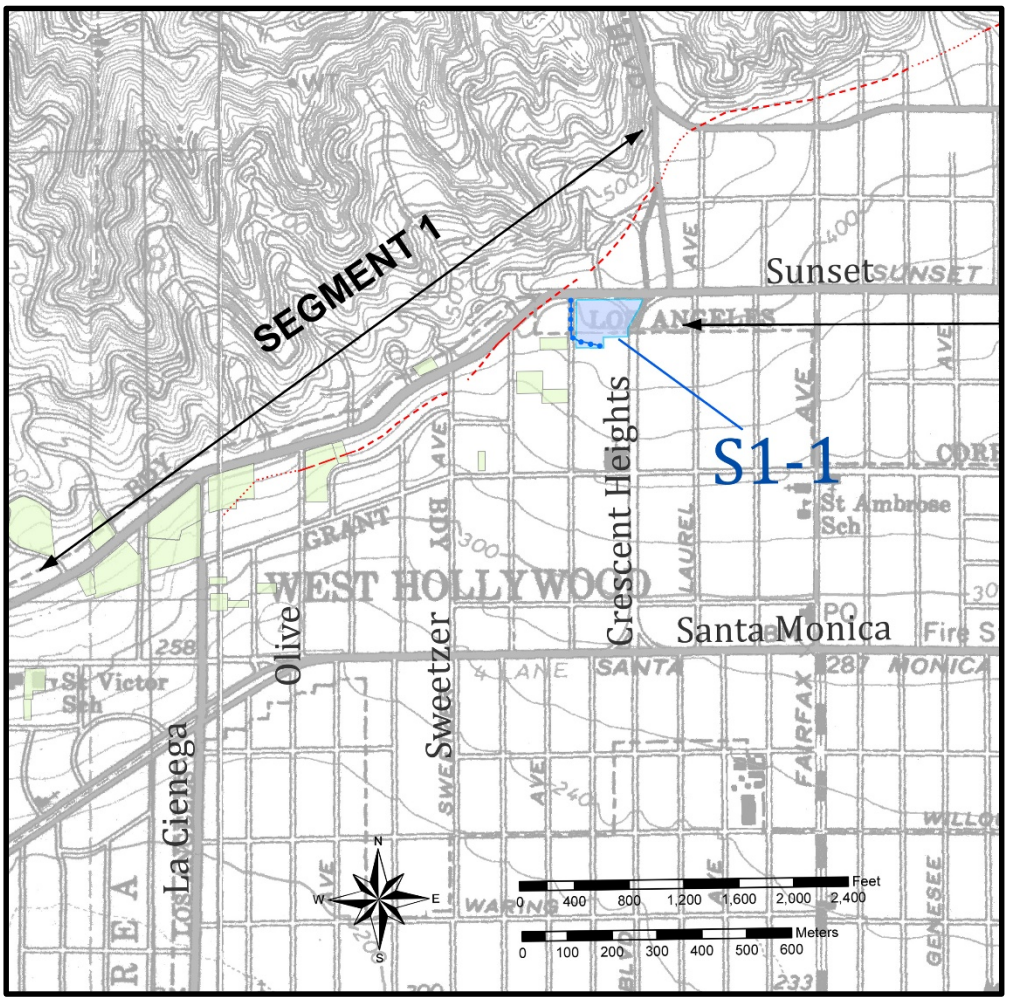

Figure 3 – Study site locality S1-1 indicated in blue shaded area. Boring transect shown as dark blue patterned line. Previous study sites included in the initial FER shown in light green.

Segment 2 (western portion)

Irvine Geotechnical, Inc. (2014) performed a fault investigation for a residential project located near the base of the Santa Monica Mountains at locality S2-1 (Figure 4). Geologic mapping and shallow trenches were performed as part their study. A geologist for the City of Los Angeles observed the excavation during the study, where un-faulted quartz diorite bedrock was exposed.

Grover Hollingsworth and Associates, Inc. (2014) conducted a fault investigation for a project located along the southern edge of the Santa Monica Mountains, near Runyon Canyon at locality S2-2 (Figure 4). They excavated three fault trenches across the site and observed a thin layer of soil overlying quartz diorite bedrock. Caliche-lined faults were observed in Trenches 1 and 3, but clay gouge and slickensides were not observed in the fault zone. With field review and discussion with the City of Los Angeles geologist, Grover Hollingsworth considered these faults to be pre-Holocene.

The data presented by Irvine Geotechnical and Grover Hollingsworth and Associates for localities S2-1 and S2-2, respectively, is consistent with the interpretation that no Holocene faults cross these sites north of the fault shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

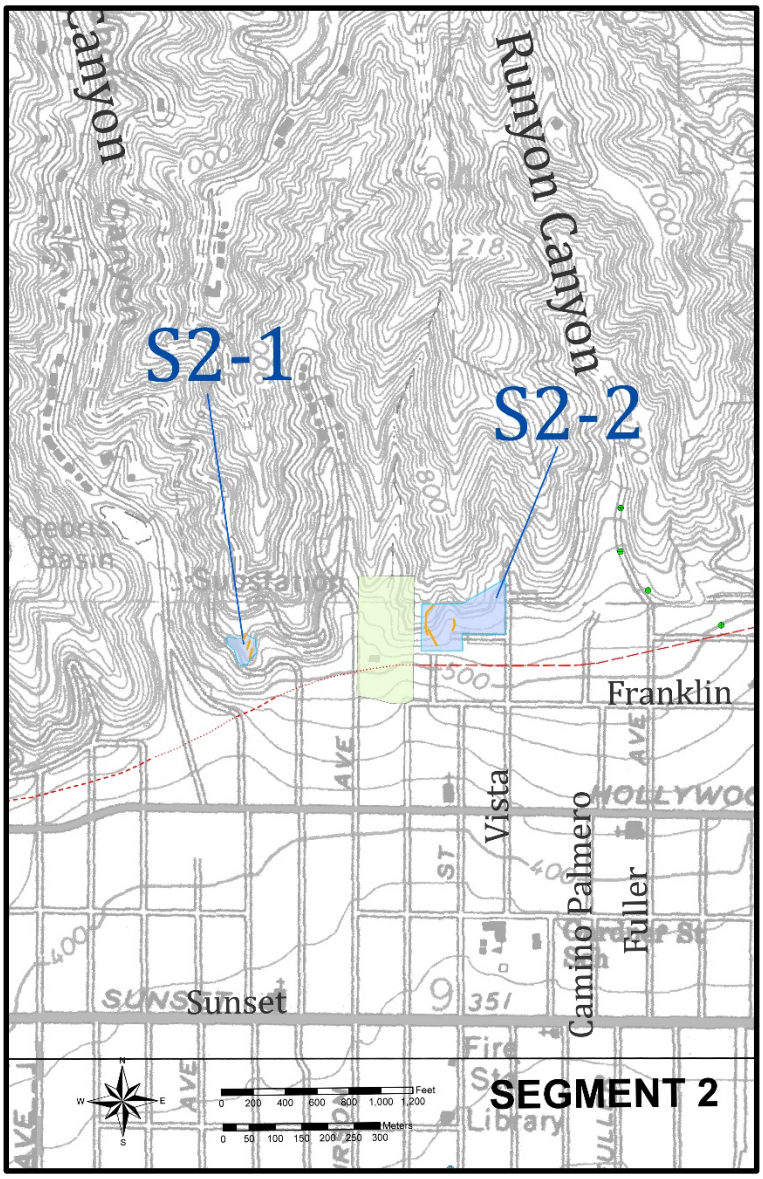

Figure 4 – Index map showing new localities S2-1 and S2-2. Trench locations indicated as orange line segments. Previous studies included in original FER shaded green.

Byer Geotechnical, Inc. (2014) prepared a fault rupture hazard investigation for a site south of Franklin Avenue near La Brea Avenue at locality S2-3 (Figure 5). They utilized continuous core borings and seismic refraction for their study. An age date from bulk AMS C14 samples collected near the base of the young alluvium was reported as 7.1 ka. Bulk samples just below the upper contact of the old alluvium yielded ages of 20.1 ka, and 22.0 ka. Their analysis indicated unbroken stratigraphy underlying the site and they concluded there is no direct evidence for the presence of active faulting at the site.

The data presented by Byer Geotechnical is consistent with the interpretation presented in the initial FER that the Hollywood Fault lies north of this site as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

At locality S2-4 (Figure 5), (locality 12 in Hernandez and Treiman, 2014), CGS re-evaluated the fault strands at this site and compared them to the well-defined and well-constrained fault data immediately east of this location (Hernandez and Treiman, 2014), locality 13), as well as new data to the east at locality S2-5 (described below). There were several fault strands indicated in investigations at this site, and the re-assessment of the data led us to select a different strand as the dominant trace.

Based on our re-evaluation of these data, we suggest a modification of the fault trace slightly to the south to project through this preferred trace, connecting the well-located fault to the east with better defined scarps to the west.

CGS made observations of two fault trenches at locality S2-5, south of Franklin Avenue and N. Cherokee Avenue (Figure 5). Two separate visits were made to this site by J. Treiman (CGS). The southern trench, first visited on December 31, 2013, exposed southeast dipping Topanga Formation siltstone and sandstone, with interbedded or injected volcanics. No faults were observed in this trench at this time. A northern trench, visited on January 15, 2014, revealed a broad fault zone (about 20 to 30-feet wide) within the Topanga Formation. Bedrock to the north and south of the fault zone dipped moderately to the northeast. Within the fault zone, bedding and shears had an east-west strike with steeply north to vertical dips. Shearing increased toward the northern margin of the zone which had a sharp vertical shear and a soil-filled fissure. The north margin of this soil-filled fissure appeared planar, indicating the soil was faulted, rather than just falling into a shaking-related fracture. A visit to a freshly cleaned exposure at the initial southern trench, also on January 15, showed a shallowly north-dipping shear within the bedrock to the graded surface. Soils overlying the bedrock in the northern trench appeared to be very young. To date no report has been submitted by the owner to the City of Los Angeles or CGS.

Our observations confirm the location of the northern strand of the Hollywood fault as presented in the initial FER.

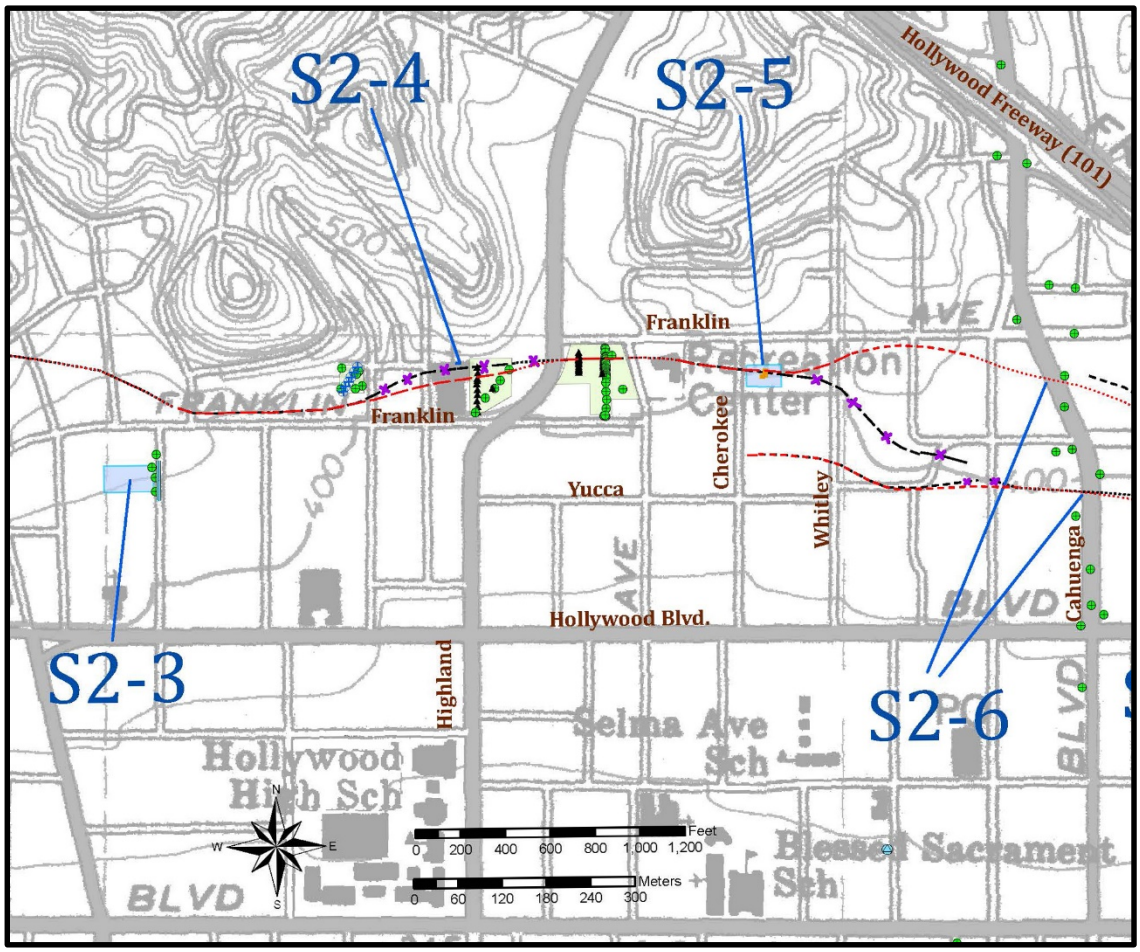

Figure 5 – Localities within Segment 2; S2-3 through S2-6. Red lines indicate mapped fault trace locations for the Official Zone Map. Black fault traces with purple hachures indicate where the fault trace was modified from the preliminary zoned trace. Green and black symbols are boring/CPT locations or transects. Orange lines are trench locations. Light blue shaded areas indicate reports received subsequent to the issuance of the FER.

Converse Consultants, Earth Sciences Associates, Geo/Resource Consultants (1984) – locality S2-6 (Figures 5 & 7); CGS acquired a geotechnical report prepared by Converse Consultants et al (1984) for the Metro Rail Red Line Project that was not available for the initial FER (Hernandez and Treiman, 2014). The initial FER relied on data from Converse Consultants et al, (1981, 1983) and Crook and Proctor (1992), and, although the borehole data from the 1984 report were described by Crook and Proctor (1992), the original borehole logs were not in the 1981 and 1983 reports that they reference.

The data presented by Converse Consultants et al (1984), specifically a cross section (Figure 6 herein) and boring logs, combined with observations of the fault at locality S2-5, support an eastward continuation of the northern fault trace , rather than the southeast trending orientation shown in the initial FER (that was based on Dolan et al., 1997)(Figure 7). We find the stratigraphy within the MTA boreholes reveals lateral discontinuities within the upper alluvial soils above the principal fault strands, in addition to offset bedrock as illustrated in the cross-section (Figure 6). The Converse Consultants data also supports the location of the southern trace of the fault where it crosses Cahuenga Boulevard as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map. Additionally, the cross section shows a third fault that projects toward

the ground surface at Yucca Street, roughly between the northern and southern strands (Figure 6). Due to uncertainty as to how the various strands of this complex fault zone connect to the east and west we are only depicting the northern and southern fault traces on the Official Zone map.

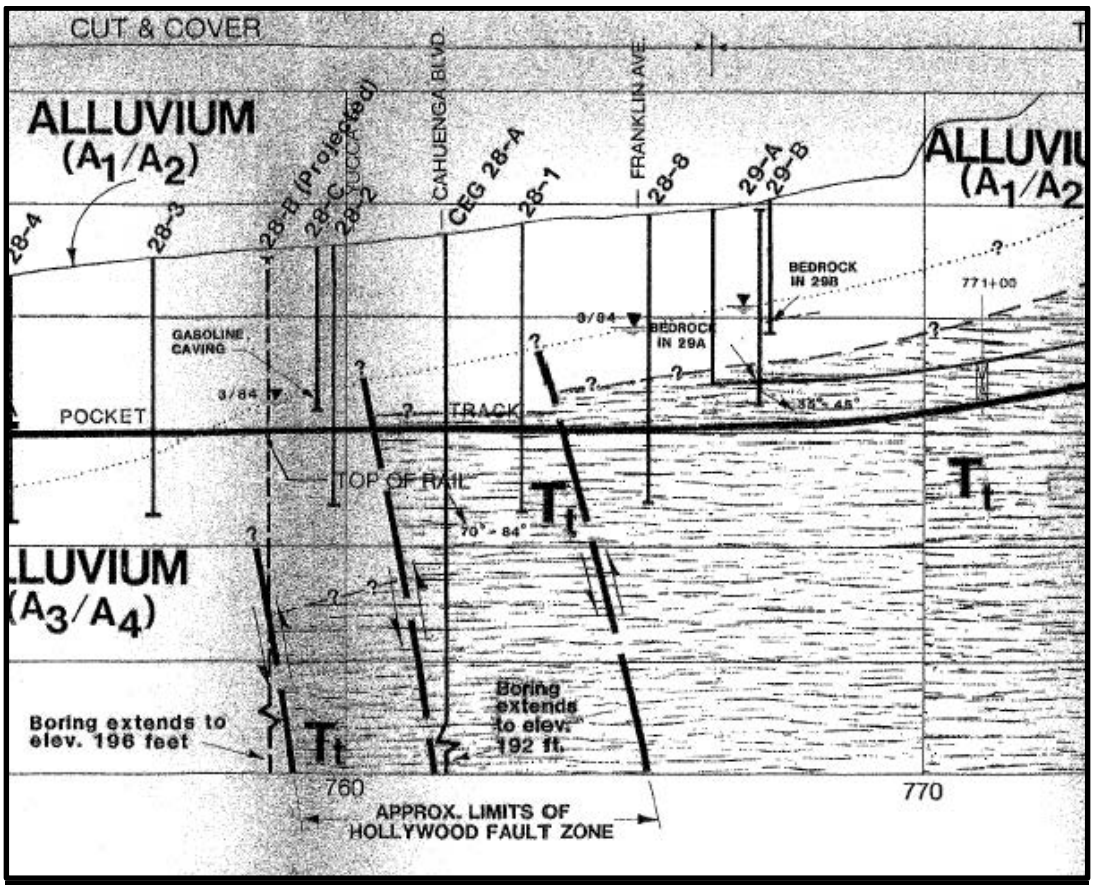

Figure 6 – Cross section from the Metro Red Line subway project. Portion of figure from Converse et al, 1984.

SEGMENT 2 (eastern portion)

A comment was submitted by Mr. David Waite of Cox Castle Nicholson, LLP on April 8, 2014 to the SMGB (Comment # 10, Table 1), with reference to localities S2-7 and S2-9 (Figure 7) and included a request to extend the public comment period. He referenced ongoing studies in the vicinity of Yucca Street and Argyle Avenue, and requested that this information be considered prior to issuance of the final map. Mr. Waite specifically mentions the Hollywood Millennium project, and a fault study for this project that was performed by Langan Engineering (2012). He also states that conclusions from this site-specific data were not relied upon by CGS in preparation of the fault map. Further, he concludes that the lack of evidence of a fault traversing the Millennium project does not represent a "sufficiently active, and well-defined fault." They suggest that the map should "simply delineate supportable fault zones in which individual properties would undertake subsurface investigations, as it is fault zones which signal to localities and other constituencies that additional investigation is required." Mr. Waite also states that additional subsurface data will be submitted to the City of Los Angeles and the State Geologist in the coming weeks and months so it could be considered in preparation of the final map.

CGS was invited to most of the sites referred to by Mr. Waite, where we performed limited review of trenches in the Yucca and Argyle area. Regarding our initial review of data and preparation of the initial FER, data from the Langan Engineering report for the Hollywood Millennium project was considered. However, our analysis of the subsurface correlation between borings and review of the C14 data arrived at different conclusions. Our review of the Langan (2012b) borings showed a major discontinuity between borings B-1 and B-5. This subsurface discontinuity is the boundary between gently south-dipping alluvial fan deposits to the north and fine-grained clayey deposits to the south. We interpret that this abrupt contrast in lithology indicates the presence of a fault. Regarding the statement that additional data will be submitted for this project, CGS has received no additional data for the site west of Vine Street at the time of this supplemental report, and only limited data for the site east of Vine Street.

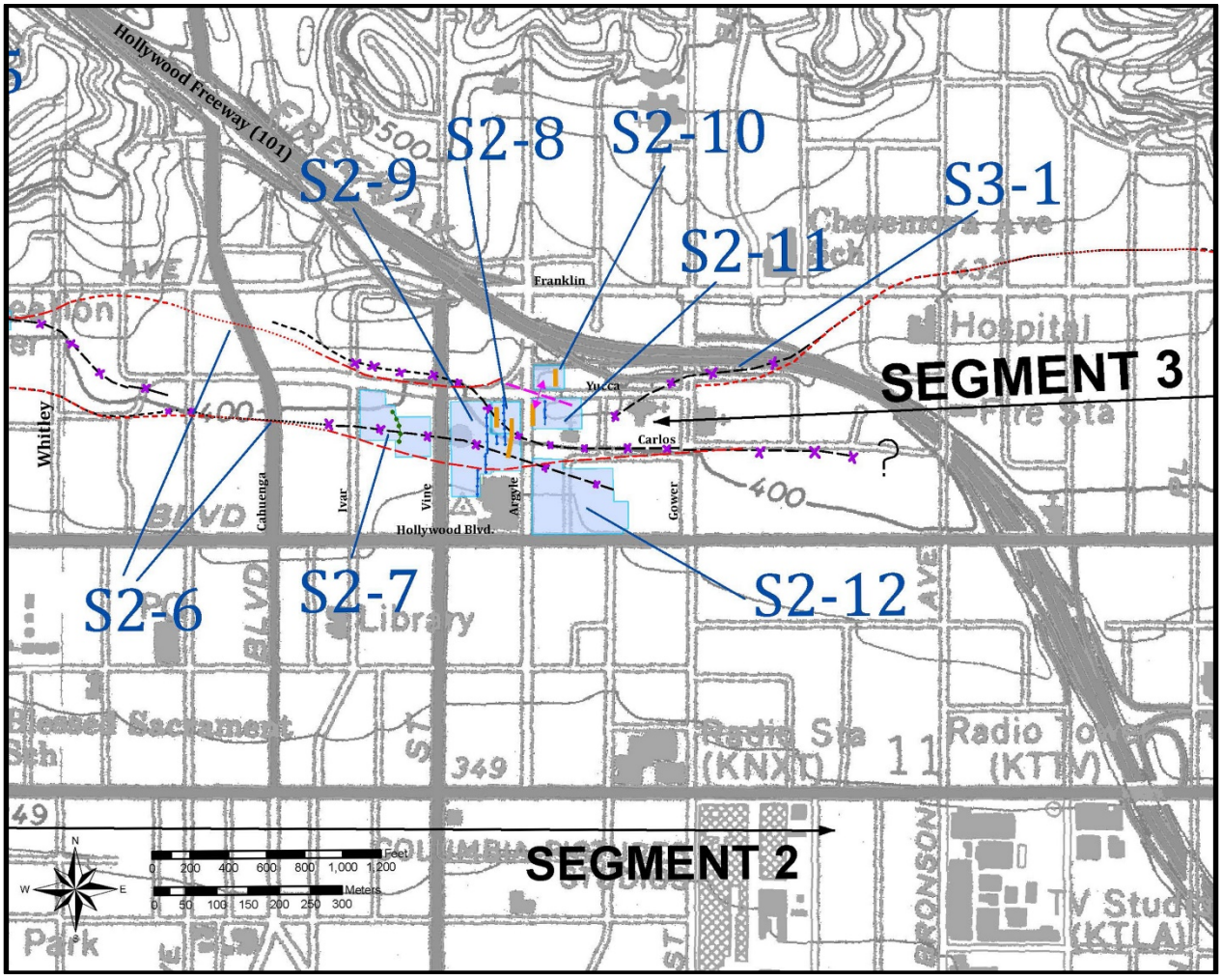

Figure 7 - Site index of the eastern portion of Segment 2, featuring localities S2-6 through S2-12. Areas shaded in blue include new reports submitted after the initial FER was prepared. Red fault traces indicate revised map traces. Black fault traces with purple X indicate modified areas from Preliminary EFZ map. Blue patterned line indicates boring/CPT transect, gold lines indicate fault trench locations. Magenta line at Site S2-10-11 is approximate anticline axis based on new reports by GDC (2014c)

Segment 2 - Localities S2-8 through S2-11

Fault studies for localities S2-8 through S2-11 were conducted by Group Delta Consultants, Inc. (GDC) over the timespan between about February and July, 2014. CGS was provided the opportunity to perform periodic trench review of some of the trenches for these sites, however some limitations were implemented, either based on site conditions, property owners restrictions, or other reasons. A table summarizing CGS site visits in this area is provided in Appendix B of this supplemental report.

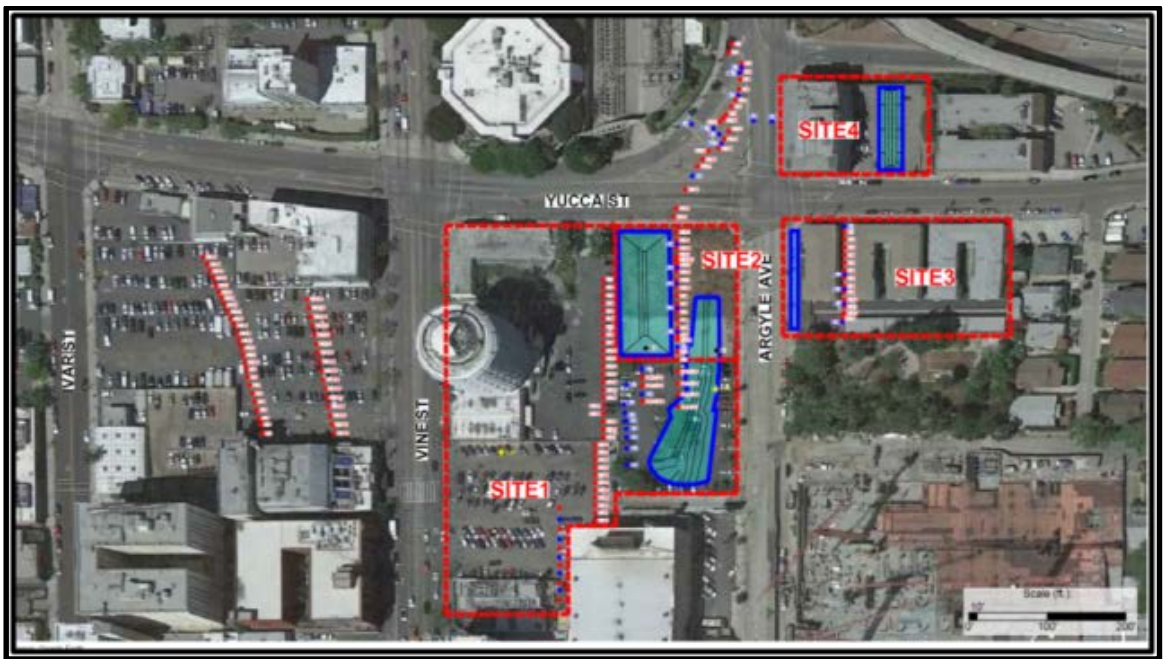

Figure 8 – Group Delta Consultants, Inc. numbered site investigations in the Yucca/Argyle area of Hollywood. Figure modified from Group Delta's submittal to the State Mining and Geology Board on August 14, 2014. Only data for Sites 2 and 3, and the CPT line for Site 1 were submitted to CGS in time for consideration in this Supplemental FER.

A comment was submitted by Mr. Michael Reader of Group Delta Consultants, Inc. (GDC) on March 13, 2014 to the SMGB for locality S2-8 (GDC Site 2, Figure 8). Mr. Reader stated that although there are mapped locations where the Hollywood Fault is somewhat well-defined, in the area between Cahuenga Boulevard and Gower Street the Hollywood Fault is concealed by alluvial fans, and that no data in this area have located the active trace. He also reported that the geologic community agrees the active trace of the Hollywood Fault lies "somewhere" in this area. However, he questioned the delineation of the zone for this area, with such sparse available data.

The initial FER (Hernandez and Treiman, 2014) provides strong evidence that the fault is well-defined to the west of the Yucca Street/Argyle Avenue area. Reasonable projection of the Hollywood Fault in this area was inferred based on supportive evidence to the west, geomorphic interpretation, and limited subsurface data. There is also good evidence the fault continues to the east, suggesting that a continuous zone of faulting extends across the map. The purpose of the map is to require investigations, like those Mr. Reader refers to in the Yucca Street/Argyle Avenue area, to ensure fault rupture is not a hazard to human lives and habitable structures.

A fault study, conducted by Group Delta Consultants, Inc. (2014a) was submitted to the SMGB on May 6, 2014 for locality S2-8 (GDC Site 2, Figure 8). This study included core boring and CPT transects and an approximate 100-foot long, 30 foot deep trench on the western portion of the site. GDC reported that they found no evidence for faulting in the Holocene units on this site. The study also reported age estimates of weathered soil horizons at two locations within the trench, prepared by Dr. Roy Shlemon, and included test results from two charcoal samples submitted for C14 dating.

GDC reported the site is underlain by fluvial channel deposits, locally named the Argyle Channel, which they estimate to be Holocene. Underlying the Argyle Channel deposits, they report a clayey sand layer. The contact between the lower clayey sand and the overlying Argyle Channel sands is reported to be an erosional unconformity. The lower clayey sand is reported to be at least 12 to 15 ka, based on relative soil pedogenic development exposed in the trench. Age estimates by GDC are based on soil development described by Dr. Roy Shlemon, in Appendix B of their report, and correlation of the unconformity with ice age sea-level low stand at during marine isotope stage 2. Radiocarbon dates reported for the Argyle Channel deposits were about ~4.3 ka, and ~41 ka at about 14 feet, and 18 feet below the ground surface (bgs), respectively. GDC prefers the soil-stratigraphic and paleo-environmental age estimates for the Argyle Channel deposits and does not use the radiocarbon dates.

A second Fault Activity Report was submitted by GDC for locality S2-8, dated September 3, 2014 (Group Delta, 2014b). This investigation consisted of additional CPT and core borings from adjacent sites in the vicinity, and an additional trench located on the eastern portion of the site that also extended south into GDC Site 1 (locality S2-9). During this second investigation, GDC reported a bedding plane fault underlies the site, where they concluded this fault is overlain by a buried paleosol "indicative of about 30 ka of weathering." This trench was excavated in response to comments by the City of Los Angeles noting that faulted Pleistocene sediments were found directly across the street to the east (GDC, Site 3; locality S2-11). Within this eastern trench at locality S2-8, Argyle Channel deposits were exposed, underlain by mudflow deposits (previously referred to by GDC as the clayey sand or "basal clay" unit). Underlying the mudflow deposits they reported well-consolidated older alluvial debris flow deposits that are dipping gently to steeply to the south. C14 dates near the base of the Argyle Channel deposits were reported at ~4.1 to 4.3 ka. (Group Delta, 2014a, 2014b). The soil ages within the trench were derived from soil profile descriptions from R. Shlemon. GDC concluded that folding and related slip observed in their trench occurred prior to deposition of the mudflows, capped by a remnant buried paleosol of about 30 ka, and are overlain by the unbroken, estimated ~12 ka Argyle Channel deposits.

The data presented in the GDC report appear to be consistent with the interpretation that the Argyle Channel deposits are of Holocene age. However, multiple C14 samples GDC reported within their trenches near the base of the Argyle Channel, are only ~4.3 ka and thus the channel deposits do not represent the complete Holocene record. We consider the Argyle Channel deposits to be approximately 6 ka, based on C14 data throughout the two trenches, and related soil development. The interpretation that the underlying clayey deposit is pre-Holocene appears to be consistent with the reported data. Detailed analysis of the soil profile development was prepared by G. Seitz, of CGS, and is included in Appendix A of this supplement. This analysis includes further comments regarding the reported age classification of the Argyle Channel deposits, and underlying clayey sand unit.

The data presented in the GDC report regarding faulting of these deposits is also open to alternate interpretations. The trench log and correlation by GDC show that Argyle Channel deposits are unfaulted across much of the site. CGS performed a field review of the west trench on two occasions, the first was not extensive enough to verify all of the consultant's conclusions due to safety concerns, however a subsequent visit afforded the opportunity to view the clayey sand deposits and relative soil development at the base of the trench. Our review of the CPT and core boring data for GDC Site 2 finds the Argyle Channel sand unit appears to be continuously correlated between borings and CPT tests, however the underlying clayey sand unit is shown to be discontinuous across portions of the site. Our review further notes the cross sections illustrated by GDC favor the CPT correlations, where core boring data in some areas does not directly support their stratigraphic interpretation.

CGS viewed several stages of the eastern trench investigation that was placed to potentially expose faulting that may project onto GDC Sites 1 and 2 from GDC Site 3 (to the east). Faulting was observed in this east trench at approximately 80 feet from the northern trench end, placing this fault at about the same location and orientation as the trace mapped by CGS in the Preliminary EFZ map. Further observations of this fault during June and July, 2014, revealed that age of faulting appeared to be constrained by an overlying, unfaulted mudflow deposit and paleosol, estimated to be about 30 ka by R. Shlemon (GDC, 2014c). The soil structure within the soil that overlies the fault does not exhibit rotation of pedogenic faces and appears undisturbed by movement along this particular fault trace. Two older faults, below and cut by this fault, were also observed in the tilted fan deposits but were not logged by GDC.

Based on this new trench data, as well as other data, we have relocated the northern fault strand to project along Yucca Street toward the north. The southern fault strand is also modified in this area based on data from locality S2-9 (GDC Site 1), described below.

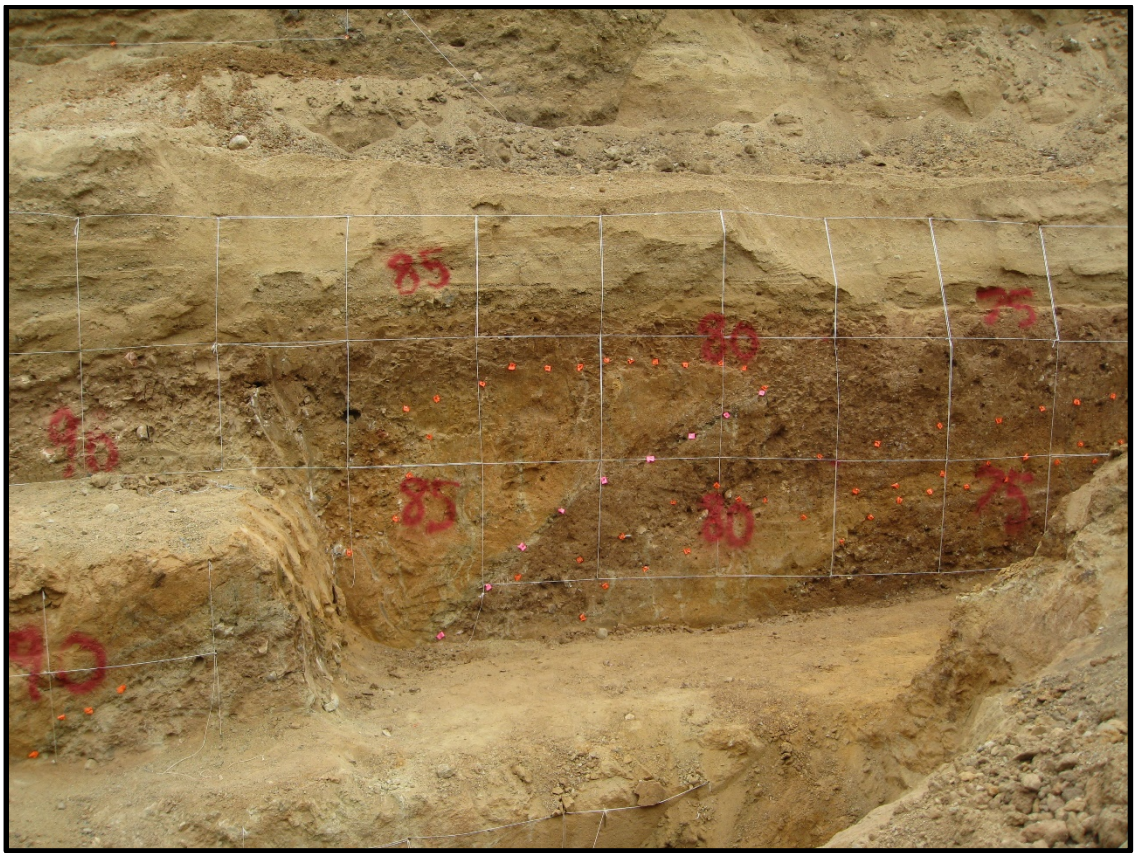

Figure 9 - View looking west at south dipping pre-Holocene bedding plane fault with a possible reverse sense of displacement in GDC's east trench. This trench was excavated across the southeastern portion of Site 2, and extends into Site 1; fault noted by pink flagging in the center of the photo. The upward termination of this fault, located right of Station 80 (about station 77), is within a fissure fill, which upon close inspection, is overlain by a mudflow deposit and soil, reported to be about 30 ka. In this photo, the Pleistocene age older alluvium (debris flow deposits) are overlain by a thin mudflow deposit, overlain by sands of the Argyle Channel.

Group Delta Consultants, Inc., (2014d) prepared a limited data report from a Fault Activity Investigation for locality S2-9 (GDC Site 1, Figure 8). Their investigation included core borings, a CPT transect and an approximate 240 foot-long, 30 foot-deep trench on the eastern portion of the site (a southward extension of the trench to the north on site 2). The GDC letter report includes a summary of technical findings that includes a summary of the interpretations for other sites surrounding Site 1. The only data provided in the report are CPT logs and two interpreted CPT profiles. Trench logs, borehole logs and age dating results were not provided. GDC reported an unbroken late-Pleistocene mudflow deposit and overlying Holocene Argyle Channel deposits within Site 1.

CGS was invited to the site for periodic trench review between June 30, 2014 and July 11, 2014, where we observed unbroken Argyle Channel deposits overlying an older unbroken unit that was tentatively correlated by GDC staff to mudflow deposits observed to the north. In the northern portion of Site 1 near the boundary with Site 2, the late-Pleistocene mudflow unit appears to be draped over the underlying folded debris flow units, and what may be the same unit appears near-horizontal as it extends to the southern end of the trench (Figure 10a).

We received no logs of this part of the trench to clarify these relationships. Figures 10a, 10b show the stratigraphy in the south end of the trench. Our review of the CPT data for this site, and some earlier core borings (from GDC Site2) indicates a discontinuous south-dipping Quaternary stratigraphic section, with a prominent stratigraphic break toward the southern end of the property indicative of a fault. The orientation of this break appears to be north-dipping, projects upward toward the ground surface near the southern property boundary (south of the trench exposure), is in alignment with the fault scarp located north of Carlos Avenue immediately to the east, and is in alignment with an inferred fault trace from the Langan data west of Vine Street (locality S2-7) to the west. On the basis of these observations, the southern trace of the Hollywood Fault has been moved to the southern boundary of locality S2-9, just south of the trench exposure.

Figure 10a – View looking southeast at the southern trench portion of the long eastern trench that extended from GDC Site 2 into Site 1. Trench reveals unbroken Argyle Channel deposits extend in depth possibly to about the upper string line at the lowest bench, just left of the ladder. A bioturbated layer and thin gravel bed of uncertain age below the bottom string line below the lowest bench also appears unbroken (see **Figure10b** below).

Figure 10b – View looking at east wall at about station 235, of east trench, GDC Site 1. Close-up of poorly sorted fine-grained deposits that underlie Argyle Channel deposits. Contact with a darker, bioturbated layer is near the base of the trench, just below the blade on the scraper tool. Where exposed, unit appears continuous and unbroken through the southern end of trench bottom. Total length of trench at base is approximately 240 feet extending across GDC Site 2 toward the southern boundary of Site 1. Bottom of southern trench end is approximately 45 feet north of the southern property line.

At locality S2-10 (GDC Site 4) a single, brief site visit was conducted by J. Hernandez on July 11, 2014, to a trench located underneath an existing parking structure. This trench revealed bedding that was relatively flat at the southern end of the trench, to gently north-dipping toward the northern end, with bedding dip increasing toward the north. This brief site visit included observations of several steep, south-dipping faults with normal south-side down sense of displacement, oriented approximately east-west. The faults projected to the ground surface underlying the parking structure and footings. Our brief observation did not find Holocene deposits within the trench. Unfortunately, the conditions of access to this trench included no photographs and no measurements of any kind, and only the above general observations can be reported here. A subsequent visit was offered by GDC for August 21, 2014 and was later cancelled. No report for this site was submitted to CGS within the September 15 deadline, and therefore newer data could not be included in this supplemental FER. Downhole observations of one bucket auger boring located in the street west of GDC Site 4 were made by J. Hernandez, which revealed depth to contact of the Argyle Channel deposits, and underlying clayey sand mudflow deposits at about 20.5 feet bgs. Due to groundwater levels rapidly rising within the southern boring, down hole observation of this second boring by CGS was prevented.

CGS also reviewed logs of test borings from Caltrans for the bridge abutments in the area of Argyle Avenue, north of Yucca Street. These boring logs described brecciated bedrock at depth, which may be related to the northern fault trace in this vicinity.

Our observations of faulted older alluvial units and north-dipping bedding within the trench is consistent with a west-trending anticlinal structure along Yucca Avenue. We have modified the preliminary zone boundary to include this zone of deformation and faulting in the Official Alquist-Priolo Earthquake Fault Zone map.

At locality S2-11, (GDC Site 3, Figure 8), Group Delta (2014c) reported the site is underlain by fill materials and older alluvial debris flows, which in turn are underlain by Modelo Formation. Their site investigation included both CPT and core borings, and an approximate 8-foot deep trench on the west side of the site. GDC reported the older alluvial unit consists of Pleistocene debris flows, and state that this unit is faulted. They associated this fault with a localized west-northwest oriented anticline, which extends north to GDC Site 4, as shown in their cross-section (Figure 11). They interpret these features to be due to regional transpression and not to seismogenic faults. They report the age of the faulting at this site is older than 35 ka based on unbroken mudflow deposits found to the west at Site 2.

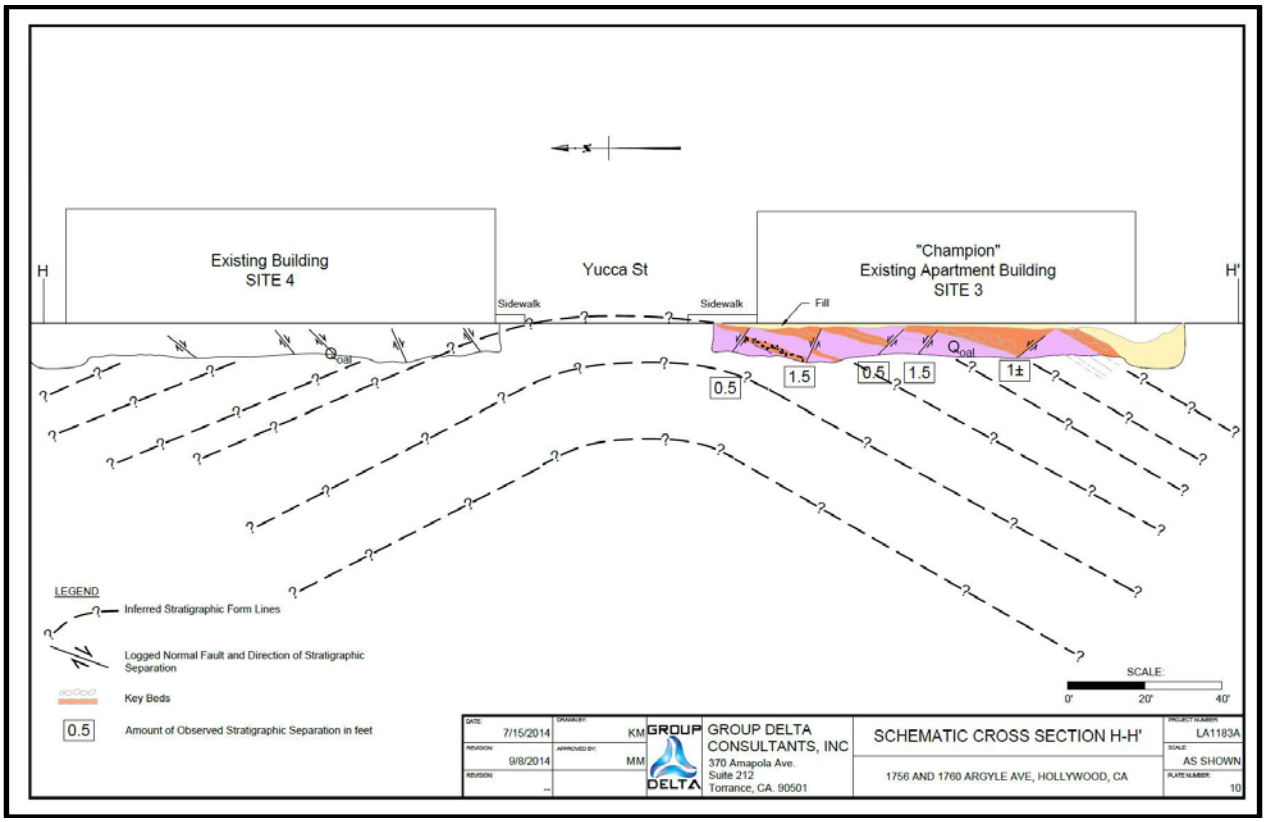

Figure 11 – Cross-section from GDC Site 3 showing anticlinal folding of Pleistocene debris flow deposits, inferred stratigraphic form lines and faults that offset this unit. Numbered annotation at each fault reflects GDC's observed stratigraphic separation at each location. Figure from GDC, 2014c.

The data presented in the GDC report is consistent with the interpretation that the deposits are of Pleistocene age although it is unclear why these "debris flow" deposits are differentiated from the similarly comprised and deformed older alluvial fan unit exposed and described at site 2.

Interpretation that the faults are local bending moment faults is not consistent with CGS field observations within the trench. CGS noted a significant lack of correlation across the southernmost fault, and that thickness of units changed across most of the faults, which indicates a component of lateral displacement (Figure 12). The southernmost fault appeared to be a prominent fault, as correlative units across the fault were not found, suggesting this fault trace may have seen the most displacement. No evidence for, or against, Holocene faulting was reported on this site because Holocene deposits, if present, were likely removed during site development.

Figure 12 – At GDC Site 3, locality S2-11, view looking easterly at faulted Pleistocene alluvial fan deposits, yellow flag indicates fault to right of shoring near the center of the photo. Gray zone at the top of the photo is concrete. Bedding gently dipping to the south (right), with steepness increasing to the south. Of the 7 faults CGS observed, most faults indicated a difference in unit thickness across fault. The southernmost fault did not have any correlative units across the fault.

A comment was submitted by Lettis Consultants International, Inc. (LCI), accompanied by a transmittal letter by Elkins Kalt Weintraub Reuban Gartside, LLP on April 8, 2014 to the SMGB to specifically address the BLVD 6200 property located at 6201 Hollywood Boulevard in Hollywood (locality S2-12, Figure 7). In their report, they present data and analysis of the site and vicinity, with additional focus on the southern, discontinuous trace of the Hollywood Fault that is mapped on the Preliminary EFZ map to underlie the site. LCI presented detailed topographic profile analyses consisting of 3 sets of data including: review of historical 6-minute topographic maps, high-resolution lidar imagery, and high resolution ground survey topographic profiles along 8 closely-spaced, north-south oriented streets. These profiles were located within the streets adjacent to the BLVD 6200 site and along other nearby profile lines. They identified breaks in slope within the profiles of these transects, and included locations of scarps previously mapped by Dolan et al. (1997), the projection of fault traces mapped by CGS in FER 253, and the BLVD 6200 project boundary.

LCI stated that in addition to the prominent break in slope located immediately north of their site, a subtle break in slope is expressed across the southern portion of the site. They reported this southern slope break is located south of the southern discontinuous fault trace mapped by CGS. They suggest that subtle breaks in slope can be related to several factors: change in slope direction on the ground surface, or thickness and directional changes within the alluvial fan system. Their analysis noted that the subtle slope break is coincident with an east-west trending apparent scarp mapped by Hill et al. (1979), and a possible fault scarp mapped by Weber et al. (1980). In their review of the 1926 topographic maps, they indicated that Argyle Avenue did not yet exist at this location, and that possibly the subtle break in slope observed in the street may have been created during subsequent construction of Argyle. Alternatively, they concluded that this subtle break in slope reflected in the composite topographic profiles (Figure 13), is most likely related to scarp-derived colluvium from the steep break in slope to the north.

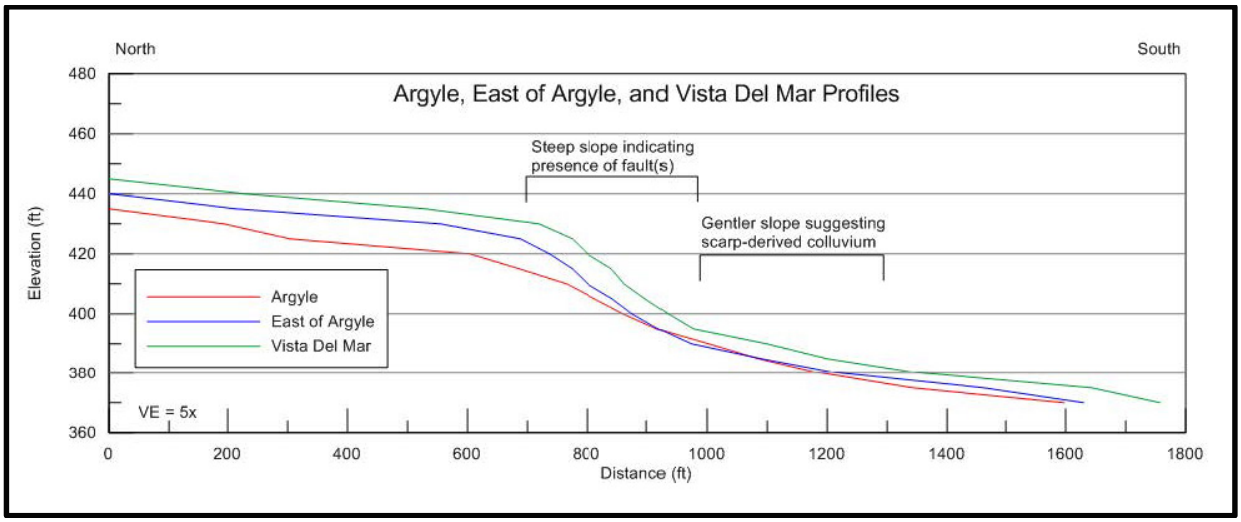

Figure 13 – Topographic profiles constructed from 1926 historical topographic maps, located within and adjacent to the BLVD 6200 project. These profiles prepared by LCI, indicate steep portions of scarps suggest they were created by fault movement, whereas gentle slopes suggest formation by down-slope movement of scarp-derived colluvium. Modified from LCI, 2014.

Summarizing earlier work, LCI reported that construction observations made by Geotechnologies, Inc. (2013) during the nearly 50-foot deep excavation for the BLVD 6200 project revealed no faulting or folding of units was observed during cleaning and installation of lagging of the sidewalls, prior to building construction. Regarding a steep groundwater difference underlying the northern portion of the site, LCI suggests that more detailed, closely spaced data is required to determine if the groundwater step is produced by a fault, or other barrier in the subsurface.

LCI also provided an alternative explanation of the incised drainage feature (CGS FER 253, Figure 12, locality S2h) that terminated at Carlos Avenue. They suggest that this feature was at a similar location to a mapped public ditch, as indicated on a Sanborn street plan, dated 1919. Based on review of topographic maps and land use, they infer this feature was likely a man-made or man-modified feature. In their conclusions, LCI reported the southern CGS-mapped fault strand is not “well-defined” and without benefit of detailed subsurface investigation, minor secondary faults cannot be conclusively demonstrated at sites near the main scarp; the small drainage incision CGS associated with faulting is likely man-made; and the main trace of the Hollywood Fault is located immediately north of the BLVD 6200 site.

Based on an analysis of available boring log data from adjacent studies in the area, LCI interpreted an alternative location for both the northern trace and the southern trace that they suggest would best fit the previous mapping by Dolan et al. (1997).

The data presented in the LCI report was particularly helpful in CGS review of topographic breaks in slope. Fault traces mapped by CGS in this area were based on geomorphic interpretation using similar data as used by LCI, as well as fault traces from Dolan et al. (1997), Hill et al. (1979), and Weber et al. (1980). In addition, the southern discontinuous fault trace was mapped using original subsurface data from Geotechnologies, Inc. (2006) that included logs of borings and the site topographic base map. CGS review of the high resolution street survey data submitted by LCI in their report, and detailed observations included in the Geotechnologies (2013) report, finds justification to modify our interpretation of the location of the principal southern fault trace.

Further, CGS review of the data along Argyle Street, at locality S2-11 (GDC Site 3), finds a section of south-dipping Quaternary fan deposits which presumably extend to the 35'-40' high slope immediately north of Carlos Avenue. This east-west trending slope has been interpreted to be a fault scarp (Dolan et al, 1997; Hernandez & Treiman, 2014; Lettis Consultants International, 2014). GDC offered the unlikely interpretation that this slope is erosional. South of Carlos Avenue, a 50-foot deep excavation for the BLVD 6200 project reportedly encountered only flat-lying sedimentary deposits (Reinard Knur, personal communication to J.Treiman) with no indication of a more indurated and tilted Pleistocene section. A letter report from Geotechnologies, Inc. dated August 16, 2013 described interlayered sands with no mention of either bedrock or deformation. The contrasting sections north and south of Carlos Avenue support a fault interpretation at this location.

Segment 3

As described above, LCI (2014) prepared several topographic profiles along north trending streets in the vicinity Yucca Street and Argyle Avenue, which included portions of both Segments 2 and 3. Their analysis included identification of breaks in slope in the area of locality S3-1 (Figure 14). LCI inferred these features were attributed to either: tectonic fault scarps (steep breaks), or alluvial fan or colluvial deposits eroding off the fault scarps (subtle breaks).

The data presented in the LCI report is helpful for reviewing the magnitude of breaks in slope as they trend from west to east across this portion of Hollywood. As a result, the western portion of the fault trace along Segment 3 appeared to be mapped a few feet north of the base of a subtle break slope, as indicated in the LCI profiles. We have modified the fault trace closer to the base of the slope break as shown in Figure 14. This modification has no effect on the EFZ boundary at this location.

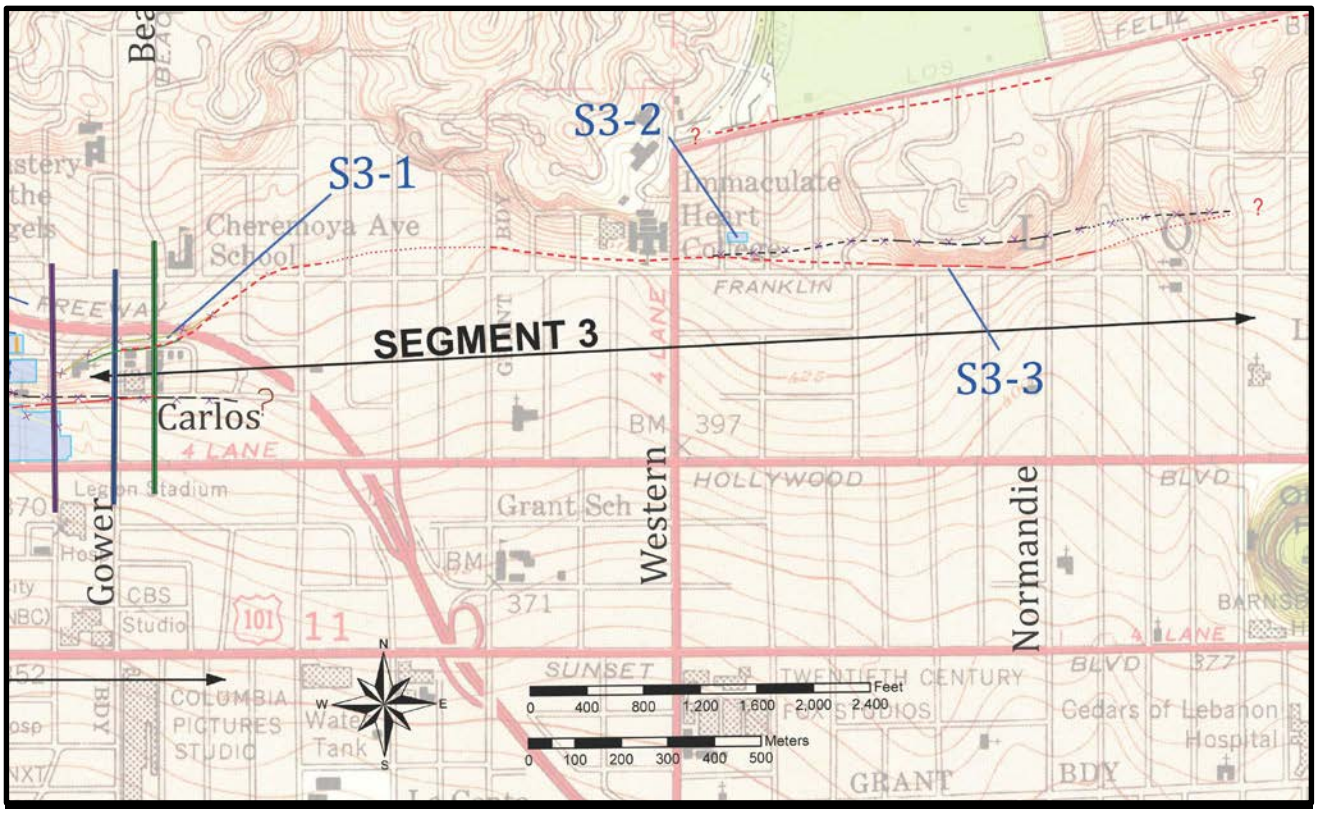

Figure 14 – Localities within Segment 3. North-south lines near Gower are elevation survey transect locations by LCI. At locality S3-1, the red fault trace indicates the revised fault trace location based on breaks in slope identified within the LCI surveys. Purple cross hatch on the black fault trace indicates location of fault trace as reported in the FER. Locality S3-2 is the Bay City Geology study site. Locality S3-3 indicates the modified fault trace (in red) based on revised interpretation of the scarp utilizing the 1926 topographic base map as described in the text.

Bay City Geology, Inc. (2014) performed an investigation for a site located within the Preliminary EFZ at locality S3-2 (Figure 14). Three large diameter borings were drilled, revealing a thin layer of older alluvium, underlain by weathered Topanga Formation siltstone and sandstone, grading to less weathered bedrock at about 21 feet bgs. Bedding planes in Topanga measured in the borings had northwest strikes, with dips to the southwest. Bay City stated that similar geologic units were encountered in all of the borings at similar depths, where they indicated this was positive evidence for continuous, unfaulted geologic units across the site. From these data, they inferred the Hollywood fault is located south of the site.

The data presented in the Bay City Geology report is consistent with the interpretation presented in the initial FER that the Hollywood Fault lies south of this site as shown on the preliminary Alquist-Priolo Earthquake Fault Zone map.

At locality S3-3 (Figure 14), CGS revised the location of the Hollywood Fault trace along Franklin Avenue east of Western, based on a review of the 1926 topographic map covering this area. Our initial interpretation in this area utilized a later version of the topographic map, where topographic details were more subtle. Our reinterpretation of the fault trace follows closely with the trace mapped by Dolan et al, 1997.

As a result of this minor adjustment, the EFZ boundary has shifted slightly to the south.

Segment 4

No new data or comments were received for Segment 4.

Segment 5

David L. Perry, comment letter dated April 18, 2014: Mr. Perry submitted a comment to the SMGB on April 18, 2014 regarding the location of the Hollywood Fault and analysis of the supporting data from the Northeast Interceptor Sewer (NEIS2A) project area (locality S5-1a) as shown on Figure 15. In this letter, Mr. Perry reports the cross-section utilized in the FER (from the Los Angeles Department of Public Works, 2013) is vertically exaggerated, and includes borings that were projected up to 63 feet horizontally into the section. In the AMEC (2013) report, he states there is a cross-section drawn at a 1:1 scale, and acknowledges subsequent boring data performed by the City of Los Angeles Department of Public Works (City of Los Angeles, 2013) was included in the cross section utilized by CGS for the FER. Mr. Perry's interpretation of the data, and his extensive experience in this area suggests the "thickening of young alluvial deposits within the fault zone" as reported by CGS, is likely attributed to paleochannels from the Los Angeles River system, and that the projection of the data into the cross-section should include consideration of geomorphology and paleochannel geometry.

We reviewed Mr. Perry's comments, and appreciate the insight he provides in this area, and particularly with his experience on the NEIS project. Regarding projection of data into the NEIS profile, we acknowledge the thickness variation of recent alluvium in the vicinity of subsurface faulting may be due to erosion processes, and paleochannel morphology along the ancestral Los Angeles River system.

Patrick Schmidt, and Fred Burnett, (2014): Mr. Schmidt and Mr. Burnett of the City of Los Angeles Bureau of Engineering (BOE) provided CGS a technical paper they prepared in February, 2014 that was submitted to the Underground Construction Association's North American Tunneling Conference (NAT). In this paper, they discussed some of the exploratory methods implemented during the Northeast Interceptor Sewer project (NEIS), including: borings with down-hole geophysics, packer and pressuremeter testing, CPT testing, Remi surveys and surface geophysics lines. They reported some of the difficult conditions they anticipate encountering during tunneling along the fault zone, including: squeezing and running ground conditions, high methane gas concentrations, and up to 5 bars of water pressure. They reported the main Hollywood Fault was located between exploratory borings M08-B4 and M08-B5, where interpolation of the geophysical surface survey data identified two north dipping fault planes with three south-dipping secondary faults in the hanging wall that merge at depth.

This technical paper describes conditions the City of Los Angeles BOE will encounter during tunnel excavation operations. No additional details regarding active faulting either outside or within the tunnel alignment were noted. However, their description of difficult tunneling conditions keys into the general width and local structure of the fault zone along the west bank of the Los Angeles River Valley.

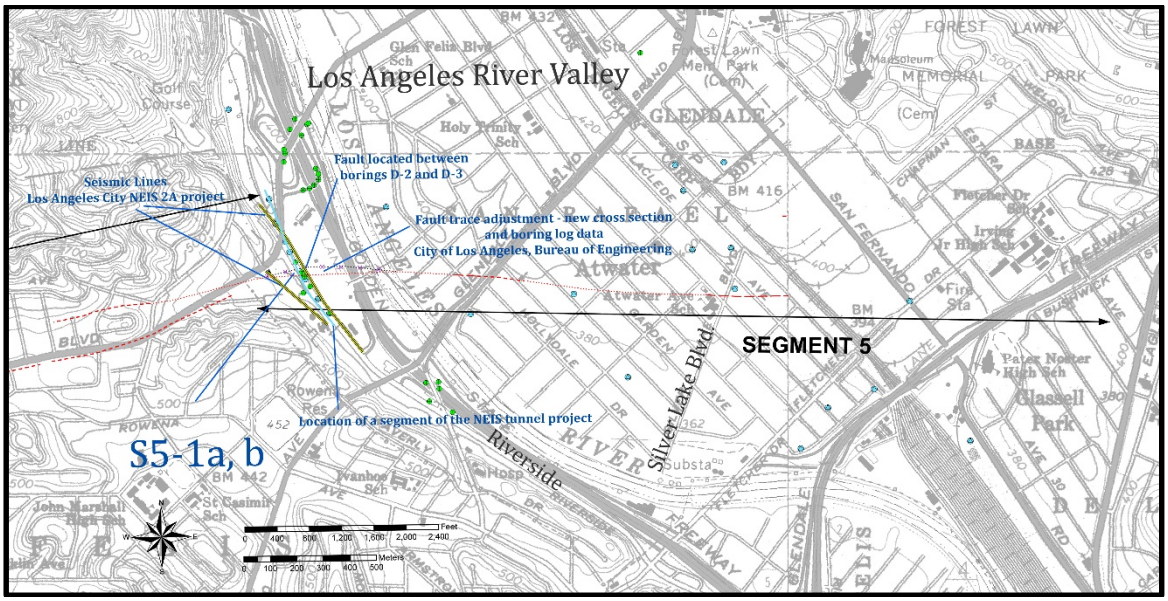

Figure 15 - Localities S5-1a, b show where additional information was received from the City of Los Angeles, Bureau of Engineering Department for the NEIS 2A project. Figure shows adjusted location of the Hollywood Fault trace, based on these new boring logs, cross section, and consideration of comments received from D. Perry. Red lines are final fault trace, purple cross hatch on black fault trace indicates location of fault trace as reported in the FER. Light blue line represents a segment of the NEIS tunnel alignment. Yellow lines indicate seismic profile transects. Green and blue symbols along the alignment represent core borings and monitoring wells, respectively.

City of Los Angeles (2013) conducted an additional fault study that included 3 borings that were drilled during April - May 2013 for the NEIS 2A sewer project. These borings were drilled to further define the limits of the deep older alluvium associated with the active trace of the Hollywood Fault at locality S5-1b. The borings also helped to define the artesian groundwater pressures, depth of bedrock, and methane concentrations they will likely encounter during tunneling operations.

City of Los Angeles (2014) prepared an updated cross-section with location map showing the investigation sites along the NEIS tunnel alignment. This new cross-section included the locations of the 3 borings presented in the 2013 report at locality S5-1b (Figure 17).

Our review of the updated cross section and boring logs received from the City of Los Angeles (locality S5-1b), finds that the original projected surface trace of the fault should be shifted to the south approximately 90 feet. We have revised the location of the fault trace based on this new cross section and supporting data. A corresponding revision of the zone boundary has been made.

DISCUSSION

SEGMENT 1

Studies were received for one site along this segment (Golder Associates, 2014a, b) but they revealed no new data that would modify our conclusions or recommendations for zoning in this area.

SEGMENT 2

Several modifications to faults within segment 2 shown on the Preliminary EFZ map are appropriate in response to detailed fault investigations and additional interpretation. The most noticeable change is in the fault pattern. Rather than the series of en-echelon fault strands initially depicted, the official Alquist-Priolo Earthquake Fault Zone Map should depict a distinct northern and southern trace that better fit the data. The basis for these modifications are summarized below.

Northern strand of the Hollywood Fault:

Re-assessment of the preferred fault trace at site S2-4 supports the fault projection on a straighter line between well-defined faults to the east and geomorphic features to the west. Trench observations by CGS at site S2-5 revealed a soil-filled fault zone within the Topanga Formation bedrock. Faulting was oriented generally east-west, and was steeply north-dipping, suggesting the northern fault strand in this location continues along an eastward trend. The northern strand may continue across a small ridge that extends south from the general mountain front, probably marking the break between higher ground to the north and a flattened portion of that ridge at Franklin Avenue.

MTA cross sections show faulting south of Franklin Avenue near Cahuenga Boulevard that is interpreted to be related to this strand, from there it is believed to continue along the southern margin of the truncated ridgelines to the east (at Vine Street). The northern strand continues east of Vine Street to sites S2-10 and S2-11 at the corner of Yucca and Argyle streets. There, small faults and a prominent fold in Pleistocene alluvium may be interpreted as resulting from lateral faulting and near-fault folding, though this is not the preferred interpretation of the consultants who studied this site.

Yucca Street Anticline:

GDC suggests this fold is a response to “regional transpression and not related to local faulting.” We tend to believe that the fold may be directly related to deformation associated with the Hollywood Fault. Abundant shearing in the bedrock observed by GDC and others, north of Yucca, suggests the presence of the northern strand of the Hollywood Fault Zone in this area. We see several fault-related possibilities for this fold. The fold may have been generated in much the same manner suggested by Figure C in the report for GDC Site 3 (GDC, 2014c). The pattern of folding and faulting is in general accord with the geometric relationships described by Harding (1974) for wrench fault situations.

Another possibility is that we may be seeing, within GDC Sites 3 and 4, the crest of a broad flower structure along part of the Hollywood Fault Zone, bounded here by the north and south strands. The magnitude of offset along some of the faults, including an unknown lateral component of slip, suggests that these are more than just passive normal faults as suggested by GDC.

A third alternative might be that the fold was responding as a hanging wall structure above a north-dipping reverse-oblique southern strand. GDC claims that their data for GDC Site 1 preclude the presence of an active fault along the southern margin of the fold, however, having looked carefully at the data submitted we do not find this certainty and in fact find several anomalies in the CPT data that may be explained by faulting.

Southern Strand of the Hollywood Fault:

The southern strand is most strongly defined at the surface by the truncated ridge between Whitley and Wilcox (west of Cahuenga) and a similarly truncated ridge north of Carlos Avenue (east of Argyle). The location and significance of the southern strand is confirmed by the Metro borings and cross section along Cahuenga (Figure 7) and the subsurface data submitted previously by Langan (2012b; locality S2-7). A revised location of the fault at the latter location in the initial FER, due to re-evaluation of the fault dip from recent studies, is corrected in this report. Although complete continuity of the southern fault strand is not confirmed through this area, it is suggested by anomalies in a CPT transect to the east of Vine (GDC Site 1). The most prominent horizon in this transect, the base of the Argyle Channel, has several anomalous south-side-up steps that may be related to faulting, and several less-continuous units lower in the section appear to support corresponding disruptions. Some of the latter may correspond to the faults observed near the southern GDC Site 2 property line in the eastern trench for that site. However, the main zones of disruption, extending highest in the section, may lie between CPTs C-21 to C-22 and C-26 to C-29. The eastern trench at GDC Site 2 (and extending south into GDC Site 1) did not extend far enough south to fully explore these possible faults and their potential connection to the scarp at Carlos Avenue. Data from a boring log transect on GDC Site 1, that might cross the fault, have not been released.

East of Argyle Avenue the southern strand continues along the base of the slope along Carlos Avenue. South-dipping older alluvium underlies the ground to the north, as exposed in studies for GDC Site 3, whereas alluvium exposed in a 50-foot deep excavation to the south appeared to be flat-lying (Knur, personal communication, 2014). Inspection of boring logs for that project (Geotechnologies, 2006) suggest, based on blow counts, that older fan deposits may have been encountered at depths at or below 20 feet. Analysis of the local slopes and geomorphology by LCI (2014) supports slight adjustment of the fault along Carlos Avenue.

Other splays previously mapped (Preliminary EFZ map):

The fault trace previously projected southeast near Franklin Avenue and Whitley Avenue, was mapped based on air photo interpretation of a prominent scarp at Yucca, east of Whitley, and geomorphic interpretation by Dolan et al. (1997). Based on review of MTA data, and observations of the fault at Cherokee (Site S2-5), this northern fault trace is re-oriented to project east through the fault zone identified in the MTA data, connecting with the northern fault strand at Yucca and Ivar, and the former southeast-trending trace is removed from the final map.

The plotting of the similarly oriented “Argyle strand” through GDC Site 2 had been based on stratigraphic and hydrologic anomalies in the preliminary data that was available in 2013, data which appeared to support the prior fault interpretation by Dolan et al. (1997). Subsequent trench investigations for GDC Sites 2 and 3 have clarified the cause of these anomalies, relating them to the complex geomorphic history of this area. Consequently the previously inferred southeast-trending fault in this area is no longer a preferred interpretation for the northern fault strand. This southeast-trending segment of fault should be deleted from the EFZ map. The older fault seen in a trench at this location seems to be unrelated to the initial indications of a fault crossing this site. [Note that correlation of geologic units and interpretations relevant to

deeper faulting on Site 2 are very difficult to make as there are discrepancies between the boring logs submitted and the drawn sections].

The initial projection of a splay of the southern fault strand at BLVD 6200 was based on an apparent groundwater anomaly and projection of the southern strand from the west. A re-projection of this strand along Carlos Avenue now appears to be more likely. Although splay faults are still possible, as suggested by the preliminary data, this is a minor inferred splay rather than a continuous fault trace and need not be depicted on the final map.

Summation:

The Hollywood fault in segment 2 appears to include a northern and a southern trace and a number of other minor faults and folds. Some faults within this zone may not be recently active, but the two main strands are "sufficiently active and well defined" so that an official Alquist-Priolo Earthquake Fault Zone should be established to ensure that active fault strands may be identified and avoided in the course of future development.

Segment 3

Detailed topographic profiles prepared by LCI for review of steep slope breaks along the western portion of Segment 3 provided a more regional view of fault scarps across this segment. Our review of this new data finds a better fit for the location of the fault trace in this area. Our revised interpretation of the fault trace using vintage topographic maps also provides justification for the fault trace to be re-mapped slightly south of the initial location reported in the FER.

Segment 4

No additional data has been received and no additional interpretations have been made by CGS that would result in modification of the preliminary Alquist-Priolo Earthquake Fault Zone map in segment 4.

Segment 5

Review of the new cross section prepared for the NEIS 2A tunnel alignment and consideration of the paleochannel geomorphology along the Los Angeles River has prompted a minor revision to the fault trace as it trends eastward across the Los Angeles River Valley. Our review of the updated cross section and boring logs received from the City of Los Angeles (locality S5-1b), finds that the original projected surface trace of the fault should be shifted to the south approximately 90 feet. We have revised the location of the fault trace based on this new cross section and supporting data. The location of the adjusted fault trace is shown at locality S5-1a, b, and as a result of this southern shift of the fault trace, the EFZ boundary has also been slightly modified.

RECOMMENDATIONS

Recommendations for encompassing faults in Alquist-Priolo Earthquake Fault Zones are based on the criteria of "sufficiently active" and "well-defined" (Bryant and Hart, 2007). The principal traces of the **Hollywood Fault** as shown on Plate 1 are recommended for zoning as they are mostly well-defined and believed to be active.

Segment 2

- Modification of the fault trace on the west side of Highland at Franklin is recommended to align with our reassessment of the dominant trace at this site.
- Modification of the fault trace along Franklin Avenue east of Cherokee, to project the fault eastward along Franklin, is based on the youthful, soil-filled fault zone at the Cherokee site and controlled by boring data along Cahuenga Boulevard.
- Removal of the southeast-trending splay south of Franklin Avenue, east of Whitley is based on the fault realignment noted above.
- Modification of the northern fault trace at Yucca Street between Ivar Street and Argyle Avenue is recommended to better match the topography.
- The southeast-trending splay between Vine Street and Argyle Avenue is removed because it was shown to not exist in the Holocene section.
- Modification of the southern fault trace between Cahuenga Boulevard and Gower Street, is based on subsurface data and topographic expression.

Segment 3

- Modification of the western portion of this segment based on detailed street survey data from LCI (2014). Additionally, at Franklin Avenue east of Western Avenue, modification of the fault trace based on revised review of vintage topographic base map for this area.

Segment 5

- Modification of the fault trace based on adjustments to the boring locations provided in a new cross section and site map provided by the City of Los Angeles Department of Public Works.

PG 7237, CEG 2260
November 5, 2014

I have reviewed and concur with
the recommendations in this report

Jerome A. Treiman
PG 3532, CEG 1035
November 5, 2014

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Appendix A – Review of Soil-Stratigraphic and Paleo-Environmental Reconstruction GDC Trench - Fault Activity Investigation 6230 Yucca Street, Hollywood Area City of Los Angeles, California, report dated May 6, 2014.

Review by G. Seitz, CGS, Menlo Park
This fault activity investigation report lists 7 objectives that in part will be re-evaluated here. The focus is on the chronology of a stratigraphic section. The numbered points below are from the reviewed report.

2.) To determine the approximate age of the exposed sediments based mainly on relative soil-profile development of the several paleosols encountered in the trench;
The stratigraphic section of interest named the "Argyle Channel" consists of a sequence of clastic nested channel deposits cut into an underlying clay unit. At the onset (p.3), it is asserted that the contact between the channel and the clay represents a regional unconformity, a major climate change and the onset of "pluvial conditions", and is judged "conservatively" to have taken place ~12-16 ka ago associated with marine oxygen-isotope stage 2. The base of the channels are interpreted to be at least ~10-12 ka old, based on this assumption that the unconformity represents a regional climate change along with interpretations about the time required to form paleosols within the channel deposits.

No evidence was presented to show that the contact at the base of the "Argyle Channel" is in fact a regional unconformity as opposed to a more common local unconformity controlled by any number of geomorphic thresholds. The conclusion that this contact must be ~12-16 ka old is speculative.

The time represented by the sequence of nested channel deposits is based on 5 channel units identified as paleosols. These are described and time required to form each horizon is estimated based on selected soil stratigraphic characteristics such as pedogenic clay accumulation or rubification. Estimated time required for soil development is reported in general terms, ranging from 1 to 3 ka years or simply as ~1 ka, for example. These general estimates are not sufficiently detailed to use as an age estimate for a deposit. Quantitative estimates should be presented with a mode and uncertainty. We acknowledge the principles of soil development, i.e. weathering of a parent material to a characteristic soil profile, however to quantify age estimates requires more than what is provided. As mentioned in the report (p.2), the use of SDI or Soil Development Index requires a calibration with known age soil chrono sequences. Or, p.7: "Based on calibration with numerically dated soils elsewhere in Mediterranean climates", unfortunately these calibration correlations were not provided. The correlations with these soil chrono sequences must be made explicitly and reported in order for age estimates based on soil development to be credible. These potential correlations were not provided. In general, in the best case scenarios, soil development derived estimates have uncertainties several times greater than what was reported here. Several sources of uncertainty were reported, including unknown parent materials and truncated profiles. An example of the acknowledged uncertainty p.3: "it is almost impossible to confidently calculate the amount of translocated clay compared with that inherent in the parent material", we agree and extend this statement to the presented results, and conclude that the time periods presented are highly speculative.

4.) To assess the validity of two radiocarbon dates obtained at the site, particularly focusing on potential sample contamination.

The only numerical age estimates provided in the report are two radiocarbon dates from the nested channel deposits of the "Argyle Channel". There are principles in how to evaluate the validity of radiocarbon dates that basically fall into two categories: 1) context and 2) sample contamination.

The dated units are nested channels, which are clearly erosive and depositional, and hence reworked detrital charcoal is to be expected. It is common practice to evaluate dating results by their stratigraphic context and consistency. The 41 ka date (Yucca-1) is located 5 feet below the 4.3 ka date (Yucca-2). The close proximity and the high probability that reworking occurs in this environment allows the assessment that this sample is most likely reworked and thus only provides a maximum age constraint. Shlemon appears to share this conclusion regarding the context uncertainty, yet invokes unrelated sample contamination considerations for which no evidence is presented to discredit the radiocarbon dating results. In fact, the subsequent extensive dating from the East Trench suggests the radiocarbon dating is reliable. All eight samples from the Argyle Channel deposits have essentially identical radiocarbon dating results of 4.2-4.4 ka showing that contamination is not an issue.

At this point it is worth stepping back and reviewing the radiocarbon dating method as it relates to these two samples, and the issues cited as reasons to doubt their validity (p.6). The first reason: modern groundwater contamination of the sample. For contamination either rejuvenating or aging, in terms of the dating result, two factors are to be considered: 1) the contamination pathway, and 2) the percentage amount of contamination. Sample contamination is a well-known, and well researched issue. Shlemon references Pigatti et al. (2007) to make this point, but this research clearly shows that a rejuvenating contamination by circulating groundwater, if present, would have no effect on the age of any sample younger than 15 ka. In fact this cited paper has no relevancy for the younger Yucca-2 sample, as the title illustrates (title:" Development of low-background vacuum extraction and graphitization systems for C-14 dating of old **[40-60 ka]** samples).

Small sample size is cited as an issue to doubt the result. Small sample size does not typically bias the result older or younger, it merely increases the uncertainty range of the dating result. Radiocarbon samples go through a chemical pretreatment designed to extract all possible contaminants in the sample. These chemical procedures are generally applied to samples whether they are actually contaminated or not. The samples dated appear to be detrital charcoal, and there is no evidence suggesting the applied acid-base-acid pretreatment was not successful in removing any possible contaminants. Considering the provided information we see no reason to exclude the Yucca-2 dating result of 4.3 ka. Although considerable uncertainty exists concerning the basal age of the Argyle Channel, a simple sediment rate extrapolation suggests that is may be approximately 6 ka. In general, C-14 dates are not excluded from chronological modeling unless there are clear reasons. We do not recognize any such issues with Yucca-2.

Additional radiocarbon chronological control was obtained in the East Trench, sites 1 and 2 (Group Delta report, September 3, 2014). This report restates the opinion that the previously obtained radiocarbon date from the West Trench "Argyle Channel Sediments" is not representative of its age. The east trench also exposed the Argyle Channel sediments and several radiocarbon samples were dated. Two samples Yucca-1 and Mill-1 were discussed with locations indicated on plate 6, with ages of 4.2 ka and 4.3 ka respectively. These dates along with 5 additional dates: Mill-2 (4.3 ka), Mill-3 (4.2 ka), Mill-5 (4.3 ka), Mill-6 (4.4 ka), and Mill-7 (4.4 ka) clearly demonstrate that the Argyle Channel sediments have an age of approximately 4

ka, and not 12 ka. The remarkable consistency of all samples having nearly identical ages is further evidence that sample contamination has not occurred.

On the adjacent property to the west Langan (2012b), stratigraphy similar to the previously discussed 6230 Yucca Street site was encountered with extensive age control consisting of 22 radiocarbon sample results. A constructed cross section A-A' (plate 2), which includes borings B-1, and B-5, presents an approximately 7.7 ka sandy alluvium overlying 8.5 ka clayey alluvium. Although abundant reworked older dates are present the younger envelope of dates as viewed in a stratigraphic depth versus age scatter plot shows stratigraphic consistency. In particular boring B-5 samples show expected stratigraphic order. The sample age distribution is typical of detrital charcoal samples in alluvial sediments.

State of the Practice

Numerous fault and stratigraphic studies have established numerical age dating methods as the most reliable method to confidently estimate the age of critical sedimentary sections. The most common method is C-14 dating, and since the 1990s AMS C-14 dating, and this along with a few other numerical methods has become the generally accepted state of the practice. At this site, it is not clear how many C-14 samples were taken. Considerable uncertainty stems from the fact that only a single C-14 date exists that appears to represent the age of a section of interest. Because detrital charcoal has an inherent context uncertainty, greater numbers of samples are often used to gauge the extent of this issue at individual sites.
However, this context uncertainty is generally strongly biased towards samples that are too old due to reworking. Context uncertainty of samples being too young is usually easily avoided because burrows are recognized during the field sampling.

Since the wide-spread application of C-14 to dating sedimentary sections, soil-stratigraphic age assessments have become more of a complementary method best suited for correlations and understanding of depositional processes. Currently the soil-stratigraphic methods are largely limited to situations where no other methods can be applied, and this is definitely not the case at this site. Hence, when it is critical to assign specific numerical ages to sedimentary units the most reliable methods are numerical and these have become the standard of practice. Clearly there are uncertainties inherent with C-14 dating, but simply listing these general issues with little or no consideration of their impact on actual results is not sufficient to exclude them. The Argyle Channel as demonstrated contains C-14 samples, more samples would provide greater confidence in the age estimates. This section appears well suited to another "state of the practice" method, OSL dating. The combination of multiple methods greatly increases the confidence of an accurate chronology.

Appendix B: Timeline of Site Visits – February-August 2014
Vicinity of Yucca & Argyle

1. Millennium property (east parcel); **2.** prior KFWB property;
3. Champion site; **4.** Green site – **4a**. related borings in street
See Figure 8 for site location index

CGS staff on site
BO – *Brian Olson*; GS – *Gordon Seitz*; JH – *Janis Hernandez*; JT – *Jerry Treiman*

Feb. 14: site 2 (KFWB) - we had some access to first KFWB trench, but safety concerns prevented entering deep northern portion of trench; southern part not cleaned (BO & JT)

-- requested return visit to site 2; request denied

Apr. 7: site 2 - access to deep part of trench (north) to see evidence for older horizon; southern part not cleaned (JH, JT).

May 14: site 3 (SE corner Yucca & Argyle) - truncated visit (~45 min.) (JH & JT).

Jun 12: site 2 - eastern trench started (JH, BO, GS)

Jun 30: sites 1-2 – east trench, southern leg; fault observed (JH, BO, GS, JT)

July 1: sites 1-2 – east trench, southern leg; south-dipping fault exposed (BO, JT)

July 2: sites 1-2 – no progress (job shut down) (JH, JT, BO)

[July 7 – Letter from Group Delta restricting CGS access to trenches; restrictions were shortly lifted]

July 8: sites 1-2 – south dipping fault observed with respect to older soil (JT, JH)

July 9: site 4a – down hole observation of boring 1 (northern bucket auger boring) Drilling not observed, cuttings cleaned up prior to arrival as boring was located in the street (JH)

July 10: site 4a – visit to observe down hole in boring 2; downhole observation was not performed due to safety issues (JH)

Jul 11: site 1 – Millennium-east - south end of trench observed (JH, JT)

Jul 11: site 4 – JH allowed brief access (~ 10 min., no photos, no notes, no exploration); JT denied access.

August 21: site 4 – planned visit cancelled by property owner

EXHIBIT 3

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

May 7, 2013

Councilmember Eric Garcetti
Council District 13
City of Los Angeles
200 N. Spring Street, Room 475
Los Angeles, CA 90012

RE: Millennium Hollywood Project
IGR/CEQA No. 130204AL-FEIR
Vicinity: LA-101, PM 7.37
SCH #2011041094

Dear Councilmember Garcetti:

We are writing this letter to reiterate Caltrans' concerns that the Environmental Impact Report (EIR), Final Environmental Impact Report (FEIR), and Traffic Study for this project did not fulfill the requirements of the California Environmental Quality Act (CEQA).

The Millennium Hollywood Project is a regionally significant project that will construct over 1 million square feet of mixed use development and is approximately one block from the US-101 freeway. With the existing condition of the freeway operating at Level of Service "F", this project will contribute significant traffic impacts to the US-101 freeway and its on/off ramps. The traffic study does not analyze nor does it disclose the traffic impacts that this project will contribute to the State Highway System.

After reviewing the Response to Comments from the City, Caltrans sent a letter, dated February 19, 2013, commenting on the FEIR (see attachment 3). We have not received a response from the City regarding our comments.

The Los Angeles Planning Commission approved the project on April 27, 2013. As a commenting agency, we would like to, once again, bring to the City's attention that the project impacts will likely result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. As mentioned in our previous letters, these concerns have not been adequately addressed in the EIR.

In summary, without the necessary traffic analysis, Caltrans cannot agree that the FEIR substantively identifies and mitigates the Project's impacts to the State highway facilities as required under CEQA.

Caltrans staff will continue to be available to work in partnership with the City to identify adequate mitigation as a result of the traffic impacts from the Millennium Hollywood proposed project. If you have any questions, please feel free to contact me at (213) 897-9140 or Alan Lin, the project coordinator, at (213) 897-8391, and please refer to IGR/CEQA No. 130204AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse
City Council Members, City of Los Angeles
Michael LoGrande, Director City of Los Angeles Planning Department

Attachments (3)

Attachment #1

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

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May 18, 2011

IGR/CEQA No. 110501AL-NOP
Millennium Hollywood Project
Vic. LA-101, PM 7.37
SCH # 2011041094

Ms. Srimal P. Hewawitharana
City of Los Angeles
200 N. Spring Street, Room 750
Los Angeles, CA 90012

Dear Ms. Hewwitharana:

Thank you for including the California Department of Transportation (Department) in the environmental review process for the above referenced project. The proposed project would include the construction of approximately 1,052,667 square feet of new developed floor area. The project would develop a mix of land uses including residential dwelling units, luxury hotel rooms, office and associated uses, restaurant space, health and fitness club uses, and retail establishments.

Because of the size and land uses of the project, this project may have a regional traffic impact on the State facilities. To assist in our efforts to evaluate the impacts of this project on State transportation facilities, a traffic study should be prepared prior to preparing the Draft Environmental Impact Report (DEIR). Please refer the project's traffic consultant to the Department's traffic study guide Website:

http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

Listed below are some elements of what is generally expected in the traffic study:

1. Presentations of assumptions and methods used to develop trip generation, trip distribution, choice of travel mode, and assignments of trips to I-110, and all on/off ramps within 5 miles radius of the project site. The Department has concerns about queuing of vehicles using off-ramps that will back into the mainline through lanes. It is recommended that the City determine whether project-related plus cumulative traffic is expected to cause long queues on the on and off-ramps. We would like to meet with the traffic consultant to identify study locations on the State facilities before preparing the Environmental Impact Report (EIR).

2. Consistency of project travel modeling with other regional and local modeling forecasts and with travel data. The Department may use indices to verify the results and any differences or inconsistencies must be thoroughly explained.

3. Analysis of ADT, AM and PM peak-hour volumes for both the existing and future conditions in the affected area. Utilization of transit lines and vehicles, and of all facilities, should be realistically estimated. Future conditions should include build-out of all projects and any plan-horizon years. (see next item)

4. Inclusion of all appropriate traffic volumes. Analysis should include existing traffic, traffic generated by the project, cumulative traffic generated from all specific approved developments in the area, and traffic growth other than from the project and developments.

5. Discussion of mitigation measures appropriate to alleviate anticipated traffic impacts. These mitigation discussions should include, but not be limited to, the following:

    - Description of Transportation Infrastructure Improvements
    - Financial Costs, Funding Sources and Financing
    - Sequence and Scheduling Considerations
    - Implementation Responsibilities, Controls, and Monitoring

    Any mitigation involving transit or Transportation Demand Management (TDM) should be justified and the results conservatively estimated. Improvements involving dedication of land or physical construction may be favorably considered.

6. The Department may accept fair share contributions toward pre-established or future improvements on the State Highway System. Please use the following ratio when estimating project equitable share responsibility: additional traffic volume due to project implementation is divided by the total increase in the traffic volume (see Appendix "B" of the Guide).

    Please note that for purposes of determining project share of costs, the number of trips from the project on each traveling segment or element is estimated in the context of forecasted traffic volumes, which include build-out of all approved and not yet approved projects and other sources of growth. Analytical methods such as select-zone travel forecast modeling might be used.

    Please be reminded that as the responsible agency under CEQA, the Department has authority to determine the required freeway analysis for this project and is responsible for obtaining measures that will off-set project vehicle trip generation that worsens State Highway facilities. CEQA allows the Department to develop criteria for evaluating impacts on the facilities that it manages. In addition, the County CMP standards states that the Department should be consulted for the analysis of State facilities. State Routes mentioned in item #1 should be analyzed, preferably using methods suggested in the Department's Traffic Impact Study Guide. To help determine the appropriate scope, we request that a select zone model run is performed. We welcome the opportunity to provide consultation regarding the Department's preferred scope and methods of analysis.

We look forward to reviewing the traffic study and expect to receive a copy from the State Clearinghouse when the DEIR is completed. Should you wish to expedite the review process or receive early feedback from the Department please feel free to send a copy of the DEIR directly to our office.

As discussed in your telephone conversation on May 17, 2011 with Mr. Alan Lin, Project Coordinator, we would like to extend an invitation to meet with the City, developer, and the traffic consultant early in the process to discuss potential traffic impacts to the State facilities and possible mitigation measures prior to the preparation of the EIR.

If you have any questions, please feel free to contact me at (213) 897-9140 or Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 110501AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

Attachment # 2

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
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December 10, 2012

Ms. Srimal Hewawitharana
Department of City Planning
City of Los Angeles
200 N. spring Street, Room 750
Los Angeles, CA 90012

IGR/CEQA No. 121036AL-DEIR
Referenced to IGR/CEQA No. 110501AL-NOP
Millennium Hollywood Project
Vic. LA-101, PM 7.37
SCH #: 2011041094

Dear Ms. Hewawitharana:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed project would include the construction of approximately 1 million square feet of developed floor area. The historic Capitol Records Building and the Gogerty Building would remain within the project site. The Project would demolish and/or remove the existing rental car facility. The project would develop a mix of land uses including 461 residential dwelling units, 254 luxury hotel rooms, 264,303 square feet of office space, 25,000 square feet of restaurant space, 80,000 square feet of health and fitness club space, and 100,000 square feet of retail space.

Below are Caltrans' major concerns with the Draft Environmental Impact Report (DEIR) for the Millennium Hollywood Project:

1. Caltrans submitted a comment letter dated May 18, 2011, on the Notice of Preparation (NOP) and met with the developer's consultant on September 15, 2011, to discuss Caltrans' concerns about the project's impact on the US-101 freeway and on/off ramps within the 5 miles radius of the project site. The traffic consultant acknowledged Caltrans' concerns and it was understood by both parties that the traffic procedures for analyzing impacts to the state highway system would follow standard statewide procedures outlined in Caltrans Traffic Study Guide. However, the June 2012 Traffic Impact Study (TIS), which is the basis for the traffic impact discussion in the DEIR, did not follow those procedures and does not analyze the impacts to the state highway system.

2. There was no analysis performed for any of the freeway elements. The TIS only used the Los Angeles County Congestion Management Program (CMP) criteria. However, the CMP fails to provide adequate information as to direct and cumulative impacts to the freeway mainline and ramps, per CEQA.

3. Currently, the Level of Service (LOS) for US-101 is operating at LOS F. Any additional trips will worsen the existing freeway condition. The TIS did not include a cumulative traffic analysis for US-101, which would consider the trips generated from the 58 related projects that are referred to in the DEIR, the proposed NBC Universal Project, and growth from the Hollywood Community Plan (Plan). Because the TIS prepared for the Plan in 2005 determined that build-out of the Plan would result in significant transportation impacts to the US-101, the Plan created a Transportation Improvement and Mitigation Plan (TIMP) to identify future improvements to the US-101. Since the proposed project site is located within the Plan area, the identified improvements should have been taken into consideration, as well as improvements listed in Metro's Long Range Transportation Plan.

4. Page IV.K.1-60 of the DEIR states: "The Project would result in a less than significant impact with respect to trip generation upon CMP locations and on freeway segments. No mitigation is required." This conclusion is not based on any credible analysis that could be found anywhere in the DEIR. It is Caltrans' opinion, based on the work that we have done in this area, that this project will result in significant impacts to the state highway system.

5. The submitted traffic analysis did not include the following ramp intersections that are closest to the project site, which may be significantly impacted by this development:

   - SB Route 101 on-ramp from Argyle Avenue
   - SB Route 101 off-ramp to Gower Avenue
   - NB Route 101 off-ramp to Gower Avenue
   - SB Route 101 off-ramp to Cahuenga Blvd.
   - SB Route 101 on-ramp from Cahuenga Blvd.
   - SB Route 101 off-ramp to Vine Street

   The traffic analysis at these off-ramps needs to show projected queue build-up upstream of the off-ramp. Although most of the on-ramps are meter controlled, the analysis needs to show how the added/over-flow volume to the on-ramp may affect other nearby intersections, including off-ramps. Caltrans is concerned that the freeway ramps will back up, creating a potentially unsafe condition. To ensure the ramps do not back up, the intersections adjacent to the ramps must be able to absorb the off-ramp volumes at the same time as they serve local circulation and land uses.

6. As shown in the DEIR, Table 5 Project Trip Generation, the project will generate a 19,486 average daily vehicle trips with 1,064/1,888 vehicle trips during the AM/PM peak hours. These volumes appear to be low and Caltrans requests that the lead agency verify

them. Also, the trip reduction credits taken are not in compliance with the Caltrans Traffic Impact Study Guide and any deviation should be properly justified and substantiated. For example, the 30% reduction of the retail pass-by trips is significantly high without justification. Utilizing such high reduction rates will result in inadequate identification of traffic impacts and mitigation, thus violating CEQA.

To address these concerns, an analysis for the project's impacts to the freeway system should be performed based on the proposed scope of the project as described in the DEIR and would need to include all of the following to determine the actual impact of this project on the State facilities in the project vicinity:

a. If the project will be developed in phases, the project added demand and trip assignment to US-101 should be based on each phase of the project, otherwise it should be based on 100% occupancy.

b. The Trip Generation figures and its distribution need to be forecasted based on a Select Zone Analysis. Based on the magnitude of the project and its close proximity to US-101, the trip assignment appears to be unreasonably low. Please elaborate on the trip assignment methodology utilized.

c. Trip Generation figures from other sources should be cross-referenced by the source, page number, year, and table numbers.

d. The off ramps on NB and SB US-101, between Vermont Avenue and Highland Avenue, which would represent the most impacted area by the proposed Development, should be analyzed utilizing the Highway Capacity Manual (HCM) 85th Percentile Queuing Analysis methodology with the actual signal timings at the ramps' termini.

e. Similarly, the on ramps on NB and SB US-101, within the same area, should be analyzed utilizing the same methodology and with the actual metering rates. These rates can be obtained by contacting Ms. Afsaneh Razavi, Senior Transportation Engineer, Caltrans Ramp Metering Department at (323) 259-1841.

f. An HCM weaving analysis needs to be performed for both the NB and the SB mainline segments, between the on and off ramps within the same area, utilizing balanced traffic demands entering and exiting the weaving segments.

Caltrans is concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. These concerns need to be adequately addressed in the EIR. In summary, without the necessary traffic analysis, Caltrans cannot recognize the TIS and DEIR as adequately identifying and mitigating the project's impacts to the State highway facilities.

If you have any questions, please feel free to contact Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 121036AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

Attachment #3

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
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February 19, 2013

Ms. Srimal Hewawitharana
Department of City Planning
City of Los Angeles
200 N. spring Street, Room 750
Los Angeles, CA 90012

IGR/CEQA No. 130204AL-FEIR
Referenced to
IGR/CEQA No. 110501AL-NOP
IGR/CEQA No. 121036AL-DEIR
Millennium Hollywood Project
Vic. LA-101, PM 7.37
SCH #: 2011041094

Dear Ms. Hewawitharana:

Thank you for the opportunity to review the Final Environmental Impact Report (FEIR) for the Millennium Hollywood Project (Project). This letter serves to reiterate our concerns that the FEIR does not fulfill the requirements of the California Environmental Quality Act (CEQA).

We have the following comments after reviewing the FEIR:

1. CEQA requires the preparation of an EIR to identify a project's significant effects on the environment, identify alternatives to the project, and devise measures to mitigate or avoid those effects. (Pub. Resources Code §§ 21002.1, subd. (a) & 21061.) This Project is a project of statewide, regional, or areawide significance. (CEQA Guidelines § 15206, subd. (b).) When a project is of statewide, regional, or areawide significance, CEQA requires that the lead agency consult with responsible agencies, state agencies with jurisdiction over resources affected by the project, and public agencies with jurisdiction over a transportation facility. (Pub. Resources Code §21092.4, § 21153; CEQA Guidelines § 15086.) Caltrans notified the City of Los Angeles (City) that to properly assess the potential impacts to the State Highway System (SHS) from the Project, a proper traffic impact study (TIS) must be completed.

2. A valid TIS represents the linchpin in Caltrans' efforts to assess a project's potential impacts to the State transportation infrastructure. To assist the City in its preparation of a valid TIS, Caltrans informed the City that the TIS needs to comply with the "*Caltrans Guide for the Preparation of the Traffic Impact Studies*". Unfortunately, the City did not work with Caltrans and instead relied on its own Congestion Management Program (CMP), which **DOES NOT** adequately study the impacts to the SHS. Because the TIS did not adequately analyze the traffic impacts, the City therefore did not identify adequate mitigation. Caltrans is concerned that the Project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. The City's analysis incorrectly focuses its attention on impacts *to the CMP from the project*. CEQA does not call for an

evaluation of the impacts of a proposed project on an existing plan; it is concerned with the impacts from the project upon the environment, which is defined as the existing physical conditions in the affected area. The City did not study impacts to or identify adequate mitigation for the SHS.

3. Caltrans operates a multi-modal transportation system across the State, and is responsible for the planning, building and maintenance of that system. (Sts. & Hwy. Code § 90 et seq.) While the lead agency for a project has the authority to determine the initial significance of the project's impacts under CEQA, Caltrans has the ultimate authority under the Streets and Highways Code, as the owner and operator of the facilities, to make that determination on the SHS.

4. The intent of the CMP is to assist federal, state and local agencies in developing and implementing comprehensive planning strategies to handle traffic congestion. (Gov. Code, § 60588) Unfortunately, the CMP process does not adequately evaluate the impacts to the SHS, nor does it make the City the final authority over highway safety issues. As the owner and operator of the SHS facilities, Caltrans provides comments on environmental documents and the analysis of impacts to the SHS.

5. The purpose of allowing the public and other governmental agencies the opportunity to review EIRs includes: sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting counter proposals. (CEQA Guidelines, Section 15200.) The TIS did not provide Caltrans, or any other reader, with sufficient traffic analysis to properly review and assess the traffic assumptions, lead agency analysis, and conclusions regarding the Project and its impacts.

6. The CMP does not capture the same data for analysis that the Highway Capacity Manual (HCM) uses. For example, the CMP (1) fails to analyze off-ramps, (2) fails to analyze freeway impacts, including where existing LOS is F, if the Project trip assignments is less than 150 cars, (3) uses a flawed percentage ratio to determine the significance of impacts, and (4) incorrectly analyzes cumulative traffic impacts.

7. The CMP, Section D4 Study Area, indicates that "The geographic area examined in the TIA must include the following, ***at a minimum***" and "Caltrans must also be consulted through the Notice of Preparation (NOP) process to identify ***other specific locations*** to be analyzed on the state highway system." Caltrans identified potential study locations for the Project, but the City does not include an analysis of these locations in the FEIR.

8. CEQA requires mitigation for site-specific issues. However, the CMP does not include site-specific safety considerations, nor is it based on an appropriate measure of effectiveness for site-specific considerations. Therefore, analysis under the CMP alone does not comply with CEQA.

9. The FEIR fails to provide queuing analysis on the off-ramp where the freeway ramps will back up, creating a potential unsafe condition. As Caltrans has already informed the City, the off-ramps which would represent the most impacted area from the Project should be analyzed utilizing the HCM 85th percentile queuing analysis methodology with the actual signal timings at the ramps termini. The City did not do this analysis in the FEIR, nor does the CMP address this issue.

10. The CMP improperly uses a percentage criterion for determining the significance of traffic impacts. The use of a "ratio theory" or "comparative approach," such as the CMP's "2% increase in trips" criterion, improperly measures a proposed project's incremental impact relative to the existing cumulative effect rather than measuring the combined effects of both the project and other relevant past, present, and future projects.

11. A lead agency that intends to approve developments with unmitigated significant traffic impacts must make Findings that no measures are feasible to mitigate those impacts, and must issue a Statement of Overriding Considerations, which indicates that allowing this project to proceed would be in the best interest of the general public.

12. Caltrans' Concerns with the City's Response to Comments in the FEIR:

    a) **Concerns regarding Response to Comment Nos. 03-2 and 03-5**
    The Traffic Impact Study Guide (TISG) states that "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on the State highway facilities. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS." The City failed to consult with Caltrans to determine the appropriate target LOS for this project.

    What's more, the State Highway facility can absorb additional traffic without degradation, if it is operating at a higher level of service where there are uncongested operations, higher travel speeds and freedom of movement. However, the greater the congestion, the lower the threshold of traffic needed to create an impact. The TISG describes the trip generation changes that would trigger the need to consult with Caltrans or that are likely to indicate a probable significant effect. At certain locations, even less than 50 peak hour trips may have a significant impact on operations and the LOS. Impacts are most often considered significant by Caltrans if they might create an unsafe condition by increasing or relocating traffic demand, thereby increasing the risk of turn movement conflicts on the SHS. The other major concern is when the integrity of the SHS would be at risk from physically undermining or destroying the structures. Traffic that exceeds an operational or capacity threshold will have a different level of significance depending on whether the analysis looks at mainline or access locations.

    b) **Concerns regarding Response to Comment Nos. 03-3, 03-4 and 03-5**
    The Transportation Modeling Procedures and Results (Appendix B of FEIR) demonstrates that the Project adds traffic to the freeway. Cumulatively, the 58 related projects that are referred to in the DEIR, the proposed NBC Universal Project and the Hollywood Community Plan, also add traffic to the freeway and should have been included in the model. Route 101 already operates at LOS F in the vicinity of the Project. Regardless of programs that include upgrades to the transit system or TDM to improve traffic conditions, the net effect of any additional trips likely will worsen the existing freeway condition. Adopting an arbitrary value of 150 or more trips to constitute a significant impact is not a realistic approach and does not capture the impacts to the SHS. Any additional traffic to the mainline, particularly where the LOS is operating at "F" or worst, needs to be mitigated in compliance with CEQA.

Page 1 of the Transportation Modeling Procedures and Results states, "the Hollywood Community Plan Update was also determined not to have a significant impact on the freeway system." This statement is false; according to the DEIR (SCH No. 20020410009) for the Hollywood Community Plan Update (Page 4.5-30), the proposed plan compared to the 2005 conditions would result in an unavoidable significant adverse transportation impact and the Plan offers transportation improvements to mitigate the traffic impacts. The Hollywood Community Plan TIMP includes LRTP Highway/Freeway Improvements (page 48), LRTP Arterial Street Improvements (page 49), and Capital Improvements (page 66). All of those improvements include freeway mainline and on/off ramp improvements in the project vicinity.

Caltrans will consider any and all improvements that would benefit the SHS, including the ATSAC/Adaptive Traffic Control System Highway and Street Traffic Signal Management System. Instead, Caltrans was and still is unable to assess the benefits of such a program because there is no traffic study in the EIR that includes the necessary analysis.

c) **Concerns regarding Response to Comment Nos. 03-6, 03-11, and 03-14**

The listed ramp intersections *are* "those at which the Project traffic impacts have the potential to be significant and substantial." The study locations should include all freeway elements, including freeway mainline, weaving sections, meters, ramps, and ramp junctions, in the study area. The traffic impact analysis methodologies are spelled out in the Caltrans guidelines and are used throughout the State when State Highway facilities are involved. For off-ramps and ramp junctions, Caltrans uses the HCM for analysis. The FEIR is flawed because the City relies upon the Critical Movement Analysis (CMA), which does not address off-ramp queuing that can lead to operational and safety issues.

Without a queuing analysis at the intersections of US-101 off-ramp (see Caltrans letter dated December 10, 2012, Item #5 and #6d), neither Caltrans nor the City can determine whether the traffic from the off-ramps will back up to the mainline, thus creating an unsafe condition to the public. Therefore, the FEIR fails to provide and analyze the impacts upon the SHS from queuing. Again, please provide the traffic analysis at the specified locations, per our Comment Nos. 03-6 and 03-11, as there may be significant impacts from the Project.

d) **Concerns regarding Response to Comment No. 03-7**

Caltrans concurs with Comment No. 59-27 (Jordon, David). The internal capture rates in Table IV.K.1-4 lack support. LADOT relies on ITE studies from Florida from the early 1990s and these studies are outdated. Instead, the Texas A & M University, Texas Transportation Institute for the Federal Highway Administration collected updated data at Legacy Town Center in February 2010. Please submit this data and the corresponding analysis for this Project to Caltrans for our review.

e) **Concerns regarding Response to Comment No.03-9**

Limitations exist regardless of the type of analysis used, but Caltrans prefers the Select Zone Analysis. If the City instead utilizes a manual approach, the analysis should include

an appropriate study area that addresses impacts to State Highway facilities. Consultation with Caltrans is a critical step in the scoping process and all stakeholders should be included in the environmental review; unilateral review and approval by LADOT is not sufficient.

The traffic model analysis (FEIR Appendix B) provides alternative values for the traffic on US-101 which select locations that are too closed to the project resulting in an incomplete model analysis for the project trips distribution on the US-101 where only small amount of trip is assigned to US-101.

f) **Concerns regarding Response to Comment No. 03-13**

The City must conduct an HCM weaving analysis for both the northbound and southbound mainline segments, between the on- and off-ramps within the project vicinity utilizing balanced traffic demands entering and exiting the weaving segments. This would show whether the traffic flow will operate safely.

As stated above, Caltrans is concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. These concerns need to be, and have not been, adequately addressed in the EIR. In summary, without the necessary traffic analysis, Caltrans cannot agree that the FEIR substantively identifies and mitigates the Project's impacts to the State highway facilities as required under CEQA.

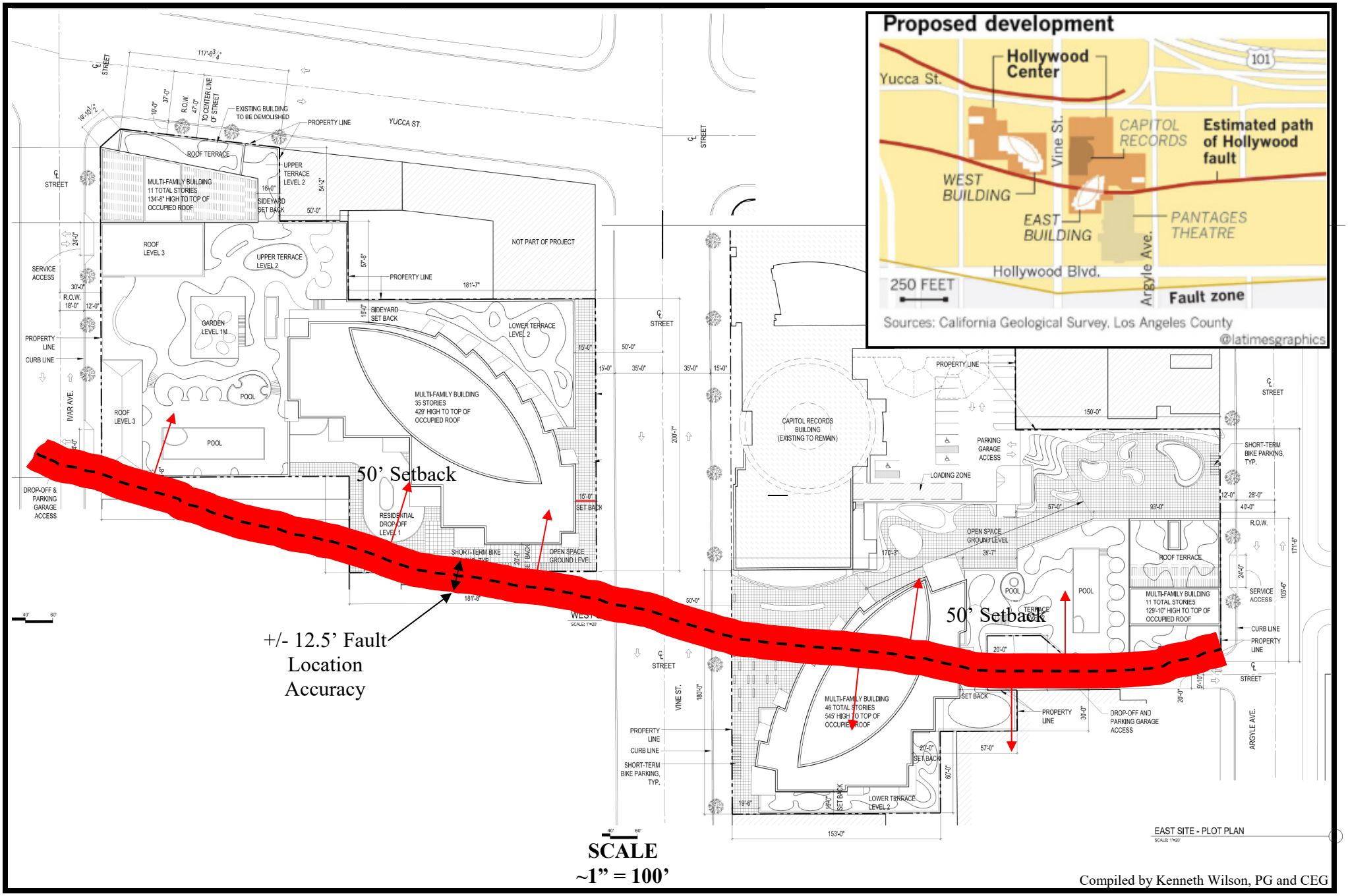
We have been and will continue to be available to work in partnership with the City to identify adequate mitigation as a result of the traffic impacts from the Millennium Hollywood proposed project. If you have any questions, please feel free to contact me at (213) 897-9140 or Alan Lin, the project coordinator, at (213) 897-8391, and please refer to IGR/CEQA No. 130204AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse
Jon Foreman, City of Los Angeles

EXHIBIT 4



PROPOSED HOLLYWOOD CENTER – APPROXIMATE LOCATION OF HOLLYWOOD FAULT

KENNETH WILSON

Principal Engineering Geologist

EDUCATION

University of California at Riverside, B.S. Geological Sciences, 1967
University of California at Riverside, M.S. Geological Sciences, 1972

PROFESSIONAL REGISTRATIONS

Professional Geologist, California, #3175 [Issued 1-08-1974; Expires 2-28-2019]
Certified Engineering Geologist, California, #928 [Issued 1-08-1974; Expires 2-28-2019]

PROFESSIONAL SUMMARY

Kenneth Wilson is responsible for management, technical supervision and performance of engineering geology, geotechnical, environmental impact, and environmental geology projects, and is a Registered Geologist (#3175) and Certified Engineering Geologist (#928) in California. He performs and supervises environmental assessments for commercial, industrial and government projects covering the disciplines of hydrogeology, engineering geology, geology, hydrology, seismicity, tectonics, faulting, mineral resources, and waste management. Geotechnical studies include fault evaluations, ground failure assessments, slope stability and foundation materials characterization, liquefaction potential, flooding hazards and site selection. The emphasis of his work is on defining geologic and geotechnical conditions, and hazards, which may affect the feasibility and design of any type of development project. Mr. Wilson has over 40 years of technical performance and project experience in critical facilities studies, radioactive/mixed/hazardous waste management, energy plant site licensing, impacts to surface and groundwater resources, waste disposal site development, dams and reservoirs and numerous other engineered structures. Specialized experience is in engineering geology in support of geotechnical studies, site selection/evaluation, seismic safety, integration of multidisciplinary technical teams, project management, and EIRs, EAs, and EISs.

PROFESSIONAL EXPERIENCE

Wilson Geosciences, Engineering and Environmental Geology [1989-Present]

Principal Engineering Geologist: Responsible for all management, technical and marketing activities for engineering geology, environmental impact, and environmental geology projects. Performs and supervises environmental assessments for commercial, industrial and government projects covering the disciplines of hydrogeology, engineering geology, geology, hydrology, seismicity, tectonics, faulting, mineral resources, and waste management. Geotechnical studies include fault evaluations, ground failure assessments, slope stability and foundation materials characterization, liquefaction potential, flooding hazards and site selection.

The Earth Technology Corporation [1974-1989]

Corporate Vice President: Mr. Wilson worked from late-1987 to mid-1989 for the Chairman/CEO and the President/COO performing the following tasks: assisting in evaluation of several potential acquisitions; management of pre-acquisition due diligence; evaluation of four new office geographic expansion options; managed preparation of corporate health and safety program and H/S technical procedures. In 1989 was principal-in-charge for start-up of environmental engineering and hydrogeology portion of Technical Assistance Contract with DOE/Nevada Operations, Environmental Safety and Health Branch.

Vice President; Director, Program Management: Mr. Wilson reported to the President of the Western Division (1985-1987) and was responsible for business development, project execution and strategic planning for market areas related to radioactive (high, mixed, and low-level) waste management programs, energy and mineral resources, geophysics and offshore technology. Emphasis was on geosciences, engineering, environmental, and program management disciplines for site selection, site evaluation/characterization, site remediation and specialized advanced technology considerations in hydrologic modeling, rock mechanics testing and geophysical exploration.

Vice President, Associate and Senior Manager: Mr. Wilson had numerous challenging technical and management responsibilities and assignments during the period 1974-1988. There was a wide range of projects for which he had a technical role, either performance, supervisory, or management in scope. A substantial portion of the time he was Program Manager for the Missile-X (MX) ICBM, Siting and Characterization Studies in the Western and Midwestern

United States: for United States Air Force, Ballistic Missile Office, and the Southern Region Geologic Project Manager (SRGPM) in Mississippi, Louisiana, Texas, Georgia, South Carolina, Virginia, Maryland for Office of Nuclear Waste Isolation (ONWI) and Office of Crystalline Repository Development (OCRD). These projects were national in scope and involved most geologic, geotechnical, geophysical, environmental, and hydrologic disciplines

Converse Consultants (formerly Converse, Davis and Associates) [1970-1974]

Staff and Project Geologist: Conducted and supervised investigations in southern, central, and northern California, southern Nevada, and eastern Washington. Groundwater and related studies included permeability, transmissibility, and storage coefficient studies at Searles Lake, California; earth dam projects at Yucaipa, Littlerock, and Anaheim, California; groundwater contamination (hydrocarbons) evaluation in the Glendale, California area; wastewater and water treatment facilities in Solvang, Lompoc, Victorville, Thousand Oaks, and Sylmar, California. Numerous earthquake and fault risk studies were performed for earth dams and reservoirs, high-and low-rise buildings, hospitals and schools, proposed nuclear power plant sites, water storage tanks, and large-diameter pipelines. Landslide and other slope failure studies were performed in rock and soil terrains. Offshore studies planned and conducted include coastal geophysical (seismic reflection, side scan sonar, fathometer), sampling and scuba investigations near Monterey and Dana Point, California.

RELEVANT CEQA SKILLS, KNOWLEDGE, AND EXPERIENCE RELATED TO GEOTECHNICAL AND ENVIRONMENTAL HAZARDS

Wilson Geosciences Inc. (WGI) was organized in 1989 and is a California corporation that specializes in many areas of geological and engineering geology services, providing its clients with top-quality personal, service, and technical capabilities. WGI has the personnel, capability, and expertise to perform, geologic and engineering geologic services for entitlement, environmental planning and permitting, design, and construction projects in southern California. Mr. Kenneth Wilson, as Principal Geologist, has more than 30 years of experience in performing various sizes and types of complex and routine investigations in the southern California region. He manages and performs each project on a day-to-day basis.

The specific geologic and engineering geologic services offered for a wide range of projects by WGI are:

- Environmental Impact Analysis—IS, MND, EIR, and EIS
- Engineering Geology
- Shallow Subsurface Geophysical Surveys (e.g., radar [GPR], magnetometer, electrical resistivity, seismic refraction/reflection)
- Fault Activity Assessments
- Hydrogeology and Groundwater Studies
- Site/Route Selection and Characterization
- Railroad and Pipeline Risk Assessments

Approximately 60-percent of WGI work has been CEQA or NEPA-related. During his career, Mr. Wilson has conducted technical investigations for major facilities, including subsurface sampling (e.g., drilling and cone penetration testing [CPT]) and geophysics (e.g., seismic reflection, seismic refraction, and down hole surveys). Mr. Wilson has prepared Geology and Soils sections of CEQA/NEPA documents based on review of existing technical reports and maps, and performance of field surveys under applicable environmental laws, regulations, and policies. In addition, he has provided technical review and comment related to technical documents for proposed tunnel routes in southern California.

RELEVANT PROJECTS—COUNTY OF LOS ANGELES

Development and Re-development CEQA Projects

- Proposed Pacoima/Panorama City Redevelopment Plan Amendment/ Expansion Area, 7,136 Acre Project Area, I-210 Freeway and Sunland Boulevard, I-210 on the north, the I-5/I-405 on the west, and Victory Boulevard on the south, City of Los Angeles, California
- Geology and Soils Section Little Tokyo Redevelopment Plan
- Geologic Input Arts and Crafts Center for the Social Hall Upgrades for the Avalon Gardens Housing Development
- Sakaida & Sons Surface Mine Project EIR near Pacoima Canyon, Los Angeles County, California
- Geology/Seismicity/Geotechnical Conditions and CEQA Checklist Analysis 8601 Wilshire Boulevard Development
- Fault Investigation--Proposed Stonebridge Estates Development Site, 12400 Big Tujunga Canyon Road
- Geology Conditions La Placita Project EIR
- Geologic Input to Eugene Debs Park Framework Plan

- City Dock No. 1 Marine Research Center Project EIR, Port of Los Angeles (Port) at Berths 56-60 and 70-71, Los Angeles, California
- Hsi Lai Buddhist Community Center 20,000-square-foot Multipurpose Facility MND, Hacienda Heights, Los Angeles County, California
- Kenneth Hahn Recreation Area EIR, Baldwin Hills
- Geologic Description of the MTA Exposition Corridor Transit Project Phase II Project Area
- Geology, Soils, Seismic and Groundwater Environmental Impact Statement for the expansion of Los Angeles International Airport
- Geology and Soils Section West Los Angeles College Facilities Master Plan Draft EIR

Fault Activity and Earthquake Evaluations (Technical and CEQA Documents)

- Geotechnical, Geologic and Earthquake Assessment for University in Southern California
- Evaluation of Surface Faulting at the Blue Star Trailer Park Following the 1971 San Fernando Earthquake
- Geologic and Fault Assessment for the Van Nuys Boulevard Corridor for Transportation Projects
- Fault Rupture Study Area (FRSA) Report for the Canoga Transportation Corridor Lassen Street/Railroad Overcrossing, Chatsworth
- Fault Investigation Los Angeles County Fire Department (LACFD) Barton Heliport Pacoima Facility, Verdugo Fault, Pacoima
- Fault Investigation Los Angeles Mission College Main Campus, San Fernando Fault, Sylmar
- Fault Investigation Los Angeles Mission College Health/Fitness and Athletics Complex and East Campus Building, San Fernando Fault, Sylmar
- Post-Earthquake Damage and Fault Assessment Los Angeles County Juvenile Hall, Sylmar
- Surface Faulting Potential Evaluation, Holy Cross Hospital, Mission Hills
- Fault and Earthquake Evaluation for a Bridge Extension West of Ballona Creek Centerline
- Fault Investigation Review to Support an EIR for the 2935± Acre AERA-Master Planned Community, near Diamond Bar, Counties of Los Angeles and Orange, California

Facilities and Infrastructure (Technical and CEQA Documents)

- Engineering Geology Review LADWP River Supply Conduit Improvement Upper Reach Project EIR
- Geology, Soils, Seismic and Groundwater West Basin Entrance Widening and Remediation of the Chevron Marine Terminal, Port of Los Angeles
- Supervision, Monitoring, and Inspection of Port of Los Angeles Dredging Operations Terminal Island Treatment Plant Interim Outfall (TITPO) Modification Dredging Project based on Previous Geophysical Surveys and Bottom Sampling
- Geology and Soils Section for Environmental Evaluation Union Station Run-through Tracks Project
- Geology Input Barham Boulevard Bridge Widening Replacement Project
- Geologic Study for the North Broadway Sidehill Viaduct Project
- Core Sampling Study In Support of Riverside Fairy Shrimp Conservation: Los Angeles International Airport Airfield Operations Area and Los Angeles/El Segundo Dunes Sites
- Engineering Geology LADWP Enhanced Coagulation Facilities to Support a Preliminary Geotechnical Investigation, Sylmar
- Post-Earthquake Damage and Landslide Assessment, Joseph Jensen Treatment Plant, Granada Hills
- Geology/Faulting/Landslide Assessments Sunshine Canyon Landfill Engineering, City and County of Los Angeles, Sylmar
- Geology Evaluation/Scuba Inspection King Harbor Marina Quay Walls for Possible Deformation due to Suspected Ground Settlement, Redondo Beach
- Engineering Geologic Inspection Residential Property, 1570 Casale Road, Pacific Palisades
- Eugene Debs Park Geology Review, Los Angeles
- Victoria Park Cricket Field MND, Carson
- Alhambra City Gardens Soil Compaction Testing, Alhambra
- Victoria Golf Course EIR, Carson
- Los Angeles River Master Plan EA/ND, Los Angeles County
- Bonelli Park Engineering Geology and Geophysical Investigation, San Dimas
- Powder Canyon Country Club EIR, La Habra

- Geologic Input to Geotechnical Investigation Seismic Retrofit Evaluation for Adams Boulevard/Flower Street Overcrossings Mid City/Exposition Light Rail Transit Project
- Geology and Soil Technical Input: Addendum No. 1 to the Final Mitigated Negative Declaration—Renovations to the Hollywood Bowl Food and Beverage Facilities
- Port of Los Angeles, West Basin EIR--Geology and Soils Section
- Port of Long Beach, Cemera Long Beach LLC Construction Aggregate Terminal, 1710 Pier B Street, Long Beach—DEIR Geology and Soils Section
- Gerald Desmond Bridge, Long Beach—Analysis of Drilling Results
- Port of Los Angeles, Dredging—On-site Operational Monitoring
- Engineering Geologic and Fault Investigations for the 6.0-MG Van Nuys Reservoir, San Gabriel Valley Water District, San Marino, California
- Geologic Investigation for 2.7-MG Whittier Reservoir, Whittier, California for Suburban Water Systems.
- Geologic Fault Study for the 1.2-MG Mira Monte Reservoir, Sierra Madre, California for RBF, the City of Sierra Madre and the U.S. Army Corps of Engineers.
- Engineering Geologic Investigation at Amherst Reservoir, La Verne, California for the City of La Verne and Civiltec Engineering

Schools and Other Critical Facilities (Technical and CEQA Documents)

- Los Angeles Unified School District Railroad and Pipeline Safety Evaluations: These studies included consideration of geologic and seismic conditions at each of the 30 sites. [CR = Central Region and SR = Southern Region] CRMS7, CRES16, SRES2, SRMS2, SLAHS3, SRHS4, CRES18, SRES4, SRHS2, CRHS13, Dominguez ES, SRHS13, Ramona HS, SRHS8, SRES7, CRHS16, SRES5, Solano ES, Glassell Park EC, Dominguez ES, ELAHS7, Bell EC, CRHS14, SRHS8-1, SRMS3, SRES9, SRHS7, Sierra Vista ES, University HS, Roosevelt Small Learning Center, and SRHS8-18.

GENERAL PLAN PROJECTS

Wilson Geosciences Inc. also has been responsible for the geology, seismic, and soils [Safety Element technical background report and/or EIR section] portions of the following General Plan updates:

- Arcadia
- Rosemead
- San Marcos
- Laguna Hills
- Azusa
- Bellflower
- Claremont
- South El Monte
- Ontario SOI Amendment
- Chino
- Riverside
- City of Los Angeles Framework
- Huntington Beach
- San Clemente
- California City
- American Canyon

PROFESSIONAL ORGANIZATIONS

Member Association of Engineering and Environmental Geologists, National Section
Member Association of Engineering and Environmental Geologists, Southern California Section

COURSES, SEMINARS, AND WORKSHOPS

Seismic Interpretation for Geologists, by the Oil and Gas Consultants International, Inc.
Intensive Short Course, Houston, Texas
Engineering Geophysics Short Course, Colorado School of Mines, Office of Continuing
Education, Golden, Colorado
Technical Writing Seminar, Earth Technology Corporation, Long Beach, California
Fundamentals of Ground-Water Monitoring Well Design, Construction, and Development, Las Vegas, Nevada
Field Practices for Collecting Representative Ground-Water Samples, Las Vegas, Nevada
New Developments in Earthquake Ground Motion Estimation and Implications for Engineering Design
Practice, Seminar organized by Applied Technology Council and funded by U.S. Geological Survey,
Los Angeles, California
Seismic Hazards Analysis, Course sponsored by Association of Engineering Geologists, Los Angeles,
California

EXHIBIT 5

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ELECTRONICALLY
FILED
Superior Court of California,
County of San Francisco
10/13/2017
Clerk of the Court
BY:VANESSA WU
Deputy Clerk

SUPERIOR COURT OF THE STATE OF CALIFORNIA

COUNTY OF SAN FRANCISCO

MILLENNIUM TOWER ASSOCIATION, a California nonprofit mutual benefit corporation,

Plaintiff,

v.

MISSION STREET DEVELOPMENT LLC, a Delaware Limited Liability Company; MISSION STREET HOLDINGS LLC, a Delaware Limited Liability Company; MILLENNIUM PARTNERS MANAGEMENT LLC, a New York Limited Liability Company; MILLENNIUM PARTNERS LLC, a New York Limited Liability Company; MILLENNIUM PARTNERS I, INC., a New York Corporation; CHRISTOPHER M. JEFFRIES, an individual; PHILIP E. AARONS, an individual; PHILIP H. LOVETT, an individual; SEAN JEFFRIES, an individual; JOHN LUCIANO, an individual; WEBCOR CONSTRUCTION, INC., an unknown business entity; WEBCOR CONSTRUCTION LP, dba WEBCOR BUILDERS, a California Limited Partnership; HANDEL ARCHITECTS LLP, a New York Limited Liability Partnership; TREADWELL & ROLLO, INC., an unknown business entity; T & R CONSOLIDATED, INC., a California Corporation and successor in interest to TREADWELL & ROLLO; LANGAN ENGINEERING AND ENVIRONMENTAL SERVICES, INC., a New Jersey Corporation and successor in interest to TREADWELL & ROLLO; DESIMONE CONSULTING ENGINEERS LLC, a Delaware Limited Liability Company; DESIMONE

Case No. CGC-17-557830

THIRD AMENDED COMPLAINT FOR:
1) VIOLATION OF CAL. CIV. CODE § 895 *ET SEQ.*;
2) NEGLIGENCE;
3) BREACH OF EXPRESS WARRANTIES;
4) BREACH OF IMPLIED WARRANTIES;
5) STRICT LIABILITY;
6) NEGLIGENT MISREPRESENTATION;
7) FRAUDULENT MISREPRESENTATION;
8) FRAUDULENT CONCEALMENT;
9) BREACH OF FIDUCIARY DUTY;
10) VIOLATION OF CAL. BUS. & PROF. CODE § 17200 *ET SEQ.*;
11) INVERSE CONDEMNATION;
12) TRESPASS;
13) NUISANCE;
14) VIOLATION OF CAL. CIV. CODE § 832; AND
15) VERIFIED PETITION FOR WRIT OF MANDATE.

JURY TRIAL DEMANDED

CONSULTING ENGINEERS, PLLC, a California Professional Limited Liability Company; TRANSBAY JOINT POWERS AUTHORITY, a public entity; ARUP NORTH AMERICA LIMITED, a United Kingdom Corporation; TRANSBAY TOWER LLC, a Delaware Limited Liability Company; BOSTON PROPERTIES, INC., a Delaware Corporation; CLARK-HATHAWAY DINWIDDIE, a Joint Venture; and DOES 1 through 100,

Defendants.

I. INTRODUCTION

1. The Millennium Tower, a 419-unit luxury condominium project at 301 Mission Street in San Francisco, was the tallest residential high rise on the West Coast when it opened in 2009. Shimmering like a translucent 58-story crystal, this landmark structure attracted a diverse community of more than a thousand residents. Urban professionals welcomed the opportunity to live minutes from the financial district's hive of corporate headquarters; retirees and empty-nesters traded the equity in their suburban homes for the panoramic vistas of a waterfront skyscraper; and young families with children embraced the unique experience of a vertical neighborhood. With units averaging nearly $2 million, the tower's developer, Millennium Partners, generated in excess of $750 million in sales between 2009 and 2013.[1]

2. To the dismay of those who sank so much of their life savings into the Millennium Tower, the Tower itself is now sinking—and has been for years, even before the first unit was sold in 2009. As much of the Bay Area and beyond has come to learn, Millennium Partners erected this glamorous building on an improperly designed and constructed foundation system, then looked the other way as the building was further besieged by other construction defects and negligent construction practices. By the time it debuted as "the luxury benchmark for San Francisco city living,"[2] the high-rise tower had already sunk more than 8 inches into the

[1] J.K. Dineen, *Millennium Tower in San Francisco is a $750M sellout*, S.F. Bus. Times (Apr. 5, 2013), http://www.bizjournals.com/sanfrancisco/print-edition/2013/04/05/millennium-tower-in-san-francisco-is.html.

[2] Millennium Partners, http://millenniumptrs.com/about-mp/ (last visited Mar. 28, 2017).

mud, sand, and clay on which it was built. And the sinking continues unabated. The Tower has since dropped another 8 inches, bringing it now 16 inches closer to the "diverse tapestry of arts, culture and culinary delights"[3] that originally drew its residents to this vibrant South of Market neighborhood. As the Tower has sunk, it has also tilted. The precast concrete floors are now non-level, and at the top, where a penthouse unit sold for $9.8 million, the tower leans by more than 12 inches.

3. But those who knew of the high rise's troubles kept it secret for years, and two parties even memorialized their agreement to keep all exchanged documents and information confidential.[4] Millennium Partners and the Transbay Joint Powers Authority ("TJPA"), which was preparing to build an underground and above-ground transit center ("Transit Center") on an adjacent site, entered into a bilateral confidentiality agreement covering all documents and information exchanged. Rejecting transparency and accountability, Millennium Partners and the TJPA agreed that the "[d]ocuments and information" exchanged about the Property and the Transit Center were proprietary and confidential.[5] The Millennium Tower Association ("HOA")—the not-for-profit association responsible for the key building systems—was shut out, and the truth about the mounting problems was hidden, and stayed hidden, for many years.

4. For its part, Millennium Partners is an experienced New York-based real estate development conglomerate of individuals and entities that boasts of having developed more than 2,900 luxury condominiums, eight five-star hotels, including the 40-story Four Seasons near Moscone Center, two extended-stay luxury hotels, 1,200,000 square feet of office space, and 1,000,000 square feet of retail space, among other developments.[6] It claims to own and operate an impressive portfolio worth over $4 billion.[7] In other words, purchasers of Millennium Tower

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[3] *Id.*

[4] The March 17, 2010 Confidentiality Agreement replaced and superseded a February 26, 2010 agreement in its entirety, and the parties to the March 17, 2010 Confidentiality Agreement agreed that the "February 26, 2010 agreement shall have no further force and effect."

[5] Confidentiality Agreement between Millennium Partners and the TJPA (March 17, 2010).

[6] Millennium Partners, http://millenniumptrs.com/about-mp/ (last visited Mar. 28, 2017).

[7] *Id.*

units had every reason to believe that they were placing their faith in a developer with the resources and know-how to properly design and construct a building whose height was not a moving target. And, in addition to the residents who bought into the dream of a world-class property built to the highest standards, the other inhabitants of bustling SoMa reasonably trusted that the slender skyscraper towering above them was constructed responsibly.

5. Christopher Jeffries and his son Sean Jeffries directed and led the development of Millennium Tower. Christopher Jeffries is a founder of certain of the related Millennium Partner entities and retains the largest ownership interest in several of the entities.[8] Even with his vast holdings, Christopher Jeffries himself makes the final decisions about the Millennium Tower and speaks with authority about the causes of its sinking and tilting. Christopher Jeffries was the primary spokesperson for Millennium Partners at its September 20, 2016 press conference at City Hall, where he insisted that "[Millennium Partners] did this building the right way."[9] The co-founders of certain of the related Millennium Partners entities, Philip Aarons and Philip Lovett, also had significant involvement overseeing and managing the development of the Millennium Tower, but, as Mr. Aarons testified, "the final decisions at Millennium are made by Chris Jeffries."[10]

6. Other day-to-day responsibilities for the Millennium Tower's development fell to Sean Jeffries, leader of West Coast development for Millennium Partners and the entity that Millennium Partners created to oversee the project at 301 Mission Street—Mission Street Development. As part of a strategic nationwide push, Sean Jeffries had expanded the West Coast office to complete various projects valued at over a billion dollars, including the Millennium Tower.[11] Vice President John Luciano, whom Millennium Partners installed on the HOA board

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[8] Aug. 12, 2010 Philip Aarons Dep. 9:11-13 & 43:17-21, cited as Ex. 5 to Plaintiff's Notice of Filing Exhibits in Support of Plaintiffs' Responses to Defendants' Motions for Summary Judgment and Motions for Judgment on the Pleadings, *Altenel, Inc. v. Millennium Partners, LLC, et al.*, No. 1:11-cv-22806-KMW, ECF No. 338-5.

[9] Associated Press, *San Francisco Skyscraper Is Leaning - And Sinking,* Popular Mechs. (Oct. 24, 2016), http://www.popularmechanics.com/technology/infrastructure/a23521/san-francisco-skyscraper-is-leaningand-sinking/.

[10] Aug. 12, 2010 Philip Aarons Dep. 42:18-21, *supra* note 8.

[11] Kristine Carber, *The Feel-Good Developer*, Gentry Wealth (Summer 2012).

from 2009 to 2016, joined Sean Jeffries on the West Coast.

7. After the confidential exchange of documents over the Millennium Tower's worsening condition, both Sean Jeffries and John Luciano kept the alarming data regarding the Tower's sinking from the HOA and continued selling the condominium units to unsuspecting homeowners. This subterfuge went on for years as Millennium Partners, and specifically Sean Jeffries, kept receiving regular reports that the Millennium Tower was sinking and tilting but never shared those reports with the HOA.

8. Sean Jeffries, acting on behalf of Millennium Partners, helped to make sure that no other entity shared that information, either. The TJPA, for instance, had been granted certain easements to the Millennium Tower property, which the agency needed to proceed with its excavation activities. Sean Jeffries signed the original October 10, 2008 easement agreement as the authorized representative of Mission Street Development. After responsibility for the Millennium Tower transferred from Mission Street Development to the HOA, the easement agreement had to be updated in 2011 to reflect that change; the amendment required the TJPA to provide monitoring data, which would have included the building's sinking and tilting, to Mission Street Development and the HOA. Sean Jeffries signed the amended easement agreement and designated himself as the HOA's "authorized representative"—thereby intercepting the TJPA's data before it could ever reach the HOA members not employed by Millennium Partners.[12] On information and belief, the HOA alleges that Sean Jeffries was not an official member of the board of directors of the HOA at the time of signing and was not authorized by the HOA to sign or receive the monitoring data on behalf of the HOA.

9. Long after construction was complete and all units had been sold, Sean Jeffries continued to involve himself with the building's management and attend periodic HOA meetings. In early 2014, after the Tower had sunk over 13 inches, and residents noticed signs of sidewalk settlement, Sean Jeffries wrote to the HOA's president to propose quarterly meetings between the HOA and Millennium Partners. Sean Jeffries also agreed to provide updates on the adjoining

[12] At least two board members were residents not employed by Millennium Partners at the time the September 1, 2011 First Amendment to the Easement Agreement was signed.

TJPA construction site, where the Transit Center was still under construction, including substantial underground work to accommodate the extension of the Caltrain line and the future High Speed Rail project.

10. In a February 2014 update to the HOA, Sean Jeffries professed ignorance about the Tower's troubles: "I have not been made aware to date of any information that gives us concern for the safety of the building or any significant impact on the structure."[13] But Sean Jeffries was aware. He knew that the Tower was sinking and tilting (and had already sunk approximately 13 inches by that time), and he knew that excavation for the TJPA's underground "train box" and the associated construction were significantly impacting the Tower. Rather than alert those who had the most to lose, Sean Jeffries continued to hide this information from the HOA.

11. The TJPA and the private parties involved in the development of the Transit Center and the skyscraper across the street—the Transbay Tower, also known as the Salesforce Tower (the "Salesforce Tower")—likewise knew that their construction activities would affect the Millennium Tower and that its excavation activities alone would cause the Tower to sink further. As a condition of the easement permitting access to the Millennium Tower, the TJPA agreed that "[t]he Support System and the Transit Center shall be designed and constructed to stabilize the soil beneath the [property], prevent the material movement and/or settlement of the [property] and provide for the structural support, integrity and safety of the [property] during and after TJPA's construction of the Transit Center . . . ."[14]

12. But instead of preventing damage to the Millennium Tower, the construction of the Transit Center and the Salesforce Tower exacerbated the problems with the Millennium Tower. Both the TJPA's construction activities at the Transit Center and the construction activities at the Salesforce Tower, including dewatering, have led to increased sinking and tilting of the Millennium Tower. The TJPA's data shows that as demolition, dewatering, and other construction activities for the Transit Center and Salesforce Tower began, the rate of settlement

[13] Letter from Sean Jeffries (Millennium Partners) to Jeff Peters (HOA) (Feb. 28, 2014).

[14] October 10, 2008 Easement Agreement between the TJPA and Mission Street Development.

and tilting of the Tower increased. The construction activities at the Salesforce Tower have also contributed to one or more breaches of the shoring wall at the Transit Center site and inadequate performance of the shoring wall system at the Salesforce Tower site.

13. The TJPA and Salesforce Tower developers, through their massive, ill-planned construction operations, and Millennium Partners, with its defective design and construction, all contributed to the myriad problems plaguing the Millennium Tower. These problems were compounded by the active concealment by Millennium Partners and its employees, and the apparent complicity of the TJPA.

14. Other factors, including inadequate garage construction and waterproofing, defective windows, curtain wall corrosion and water intrusion, inter-unit odor transmission, cracks, and alignment issues, have also taken a toll on the livability of the Millennium Tower. Millennium Partners bills the property as "rare" and "an address like no other." And it is indeed rare and unique, but now mainly because failures of this magnitude in planning, design, development, and construction are almost unheard of in contemporary high rises.

15. Burdened with design and construction defects, and further battered by the TJPA construction activities on its land and the adjoining property, the Millennium Tower has continued its slow descent into the prehistoric clay on which it was built. Unable to initially detect the sinking and tilting on its own—and kept from the truth by the parties that did know—the HOA learned far too late of the conditions jeopardizing the Millennium Tower. Had it known sooner, the HOA could have demanded that the developer implement a retrofit, or it could have sought to halt other activities contributing to the damage, such as those of the TJPA.

16. Millennium Partners and the TJPA now each publically places unequivocal blame on the other. Regardless of who contributed most to the damage, one fact is indisputable: Both Millennium Partners and the TJPA possessed the damning data but did nothing with it. Neither tried to stem the sinking; neither sought to alert the HOA.

17. And now, in an attempt to show that adjoining construction sites are the exclusive cause of the sinking, Millennium Partners has sought an order to stop the TJPA from any final dewatering. Forced to confront its own culpability, Millennium Partners instead points the finger

at others, despite sitting on the data for years and never seeking to stop the dewatering when it would have made a difference.

18. The victims of this debacle are the residents and the HOA, who placed their trust and confidence—and over half a billion dollars—in the hands of Millennium Partners. With this Complaint for strict liability, breach of warranties, fraud, and negligence, as well as violations of the California Civil Code and California Business and Professions Code, among other claims, the HOA seeks what it plainly deserves—a safe home free from continued sinking and tilting, the same home that its members though they were buying before the truth was revealed.

II. THE PROPERTY

19. The Millennium Tower development is located at 301 Mission Street in San Francisco and comprises three primary structures: a 58-story tower (the "Tower"), an adjacent 12-story building on a reinforced concrete podium that includes residences and common areas (the "Podium"), and a five-level subterranean garage (the "Garage") (collectively, the Tower, the Podium, and the Garage constitute the "Millennium Tower" or "Property"). The Millennium Tower consists of 419 separate residential condominiums and two commercial units, forming a mixed-use condominium project.

20. The underlying real property is a rectangular lot measuring approximately 183.5 feet by 275 feet, a total area of approximately 50,463 square feet. The Property is bounded by Mission Street to the northwest, Fremont Street to the southwest, and Beale Street to the northeast. The future Transit Center abuts the Property to the southeast, and the temporary and permanent easements granted to the TJPA encroach five feet onto the Property on the southeast side. The Salesforce Tower is directly across Fremont Street from the Property at 415 Mission Street.

21. The Millennium Tower is more fully described in the Map entitled "Final Map 4146 A 420 Unit Residential Unit and 8 Commercial Unit Mixed Use Condominium Project" filed for record in the Official Records of the City and County of San Francisco, State of California, on May 15, 2008, in Book 105 of Condominium Maps, pages 146-147 (the "Center Map"), being Lot 19 of Assessor's Block 3719, to be developed as described on the

condominium plan entitled "A Mixed Use Condominium Plan for Millennium Tower – 301 Mission Street – San Francisco, California" filed for record in the Official Records of the City and County of San Francisco, State of California, on March 13, 2009, as Document Number 2009-I732547-00 in Reel J847, Image 0102, and more particularly, contains two Commercial Components and three Residential Components.

22. Under the governing documents, and pursuant to California law, the HOA is the owner of the common areas of the Millennium Tower, including but not limited to the land, foundations, footings, beams, supports, roofs, interior and exterior load-bearing walls, Garage, basement areas, exterior building surfaces, window walls, curtain walls, glazing, electrical rooms, sewer and drainage systems, and utility pipes and conduits. The HOA is responsible for the operation and administration of the common areas and the maintenance, repair, and replacement of all improvements within the common areas. The HOA has the sole and exclusive right to pursue claims and causes of action related to deficiencies in, and damage to, the common areas of the Millennium Tower.

III. THE PARTIES

23. Plaintiff HOA is a California nonprofit mutual benefit corporation formed and existing under the laws of the State of California and established as a common interest development, as described in California Civil Code sections 4080 and 5980, with its principal place of business within the County of San Francisco, California. The HOA represents the interests of the owners of condominium units and the sub-associations in this common-interest development.

24. By the express terms of the HOA's governing documents, and pursuant to California Civil Code section 5980, the HOA has the general authority and responsibility to bring this action in its own name as the real party in interest and without joining with it the members in matters pertaining to the Millennium Tower.

25. The HOA has the sole and exclusive right and duty to manage, operate, control, repair, replace, and restore the Millennium Tower, including the right to enter into contracts to accomplish its duties and obligations. It also has all the powers necessary to carry out its rights

and obligations, including the right, duty, and power to contract for legal services to prosecute any action affecting the HOA when it deems such action necessary to enforce its powers, rights, and obligations, including the bringing of this action. Under California Civil Code sections 4775 and 5980, the HOA seeks recovery for damages to the Millennium Tower, including, among other things, damages to the common areas; damages to the separate interests that the HOA is obligated to maintain and repair; and damages to the separate interests within the HOA's common interest, power, and standing.

26. Defendant Mission Street Development LLC ("MSD") is a limited liability company formed and existing under the laws of the State of Delaware, and doing business in the City and County of San Francisco, California, including the development, construction, improvement, marketing, and sale of the Millennium Tower and its units.

27. Defendant Mission Street Holdings LLC ("MSH") is a limited liability company formed and existing under the laws of the State of Delaware, and doing business in the City and County of San Francisco, California, including the development, construction, improvement, marketing, and sale of the Millennium Tower and its units.

28. Defendant Millennium Partners Management LLC ("MPM") is a limited liability company formed and existing under the laws of the State of New York, and doing business in the City and County of San Francisco, California, including the development, construction, improvement, marketing, and sale of the Millennium Tower and its units. MPM was the "Assured" for a 2007 loss occurring at the Millennium Tower. On information and belief, the HOA alleges that MPM employees were also entitled to a discounted price on Millennium Tower units by virtue of MPM's involvement and affiliation with the development.

29. Defendant Millennium Partners LLC ("MP LLC") is a limited liability company formed and existing under the laws of the State of New York, and doing business in the City and County of San Francisco, California, including the development, construction, improvement, marketing, and sale of the Millennium Tower and its units. MP LLC served as a guarantor in connection with a loan provided to MSD in 2005, the purpose of which was to finance the construction of the Millennium Tower, for which it received payment from MSD. And pursuant

to the Millennium Tower Move In/Out Procedures, MP LLC is required to be listed as an additional insured on moving companies' liability insurance policies.

30. Defendant Millennium Partners I, Inc. ("MPI") is a corporation formed and existing under the laws of the State of New York, and doing business in California as New York SF Millennium Partners I, Inc., including the development, construction, improvement, marketing, and sale of the Millennium Tower and its units. MPI has been in the real estate development business since at least 1992.

31. Collectively, MSD, MSH, MPM, MP LLC, and MPI constitute the "Millennium Defendants." All of the Millennium Defendants are non-public entities about whom little to no financial information is publicly available. All of the Millennium Defendants were integral to the development of the Millennium Tower and profited from the development, construction, improvement, marketing, or sale of the Millennium Tower and its units.

32. Defendant Christopher M. Jeffries is a Founding Partner, Principal, and controlling shareholder of MPI. He is also the President of MSH, MPM, and MP LLC. On information and belief, Christopher Jeffries was at all times in control of the day-to-day management and operation of MSD with Philip Aarons and Philip Lovett, as required by the loan agreement that financed the construction of the Millennium Tower. He has been heavily involved in the development, management, and sale of the Millennium Tower and its units. In particular, he was a key participant in the decision to build the Tower with concrete instead of a steel frame, resulting in a significantly heavier building than original designs called for.

33. Defendant Philip E. Aarons is a Founding Partner, Principal, and shareholder of MPI. He is also Vice President and Secretary of MSH, Vice President of MPM, and Vice President of MP LLC. On information and belief, Philip Aarons was at all times in control of the day-to-day management and operation of MSD with Christopher Jeffries and Philip Lovett, as required by the loan agreement that financed the construction of the Millennium Tower. He has been heavily involved in the development, management, and sale of the Millennium Tower and its units.

34. Defendant Philip H. Lovett is a Founding Partner, Principal, and shareholder of

MPI. He is also Vice President of MSH, Vice President of MPM, and Vice President and Secretary of MP LLC. On information and belief, Philip Lovett was at all times in control of the day-to-day management and operation of MSD with Christopher Jeffries and Philip Aarons, as required by the loan agreement that financed the construction of the Millennium Tower. He has been heavily involved in the development, management, and or sale of the Millennium Tower and its units. In particular, he directed the Millennium Tower's condominium sales and services strategies and business plan for the project. He also participated in the design and layout of the Millennium Tower units.

35. Collectively, Christopher Jeffries, Aarons, and Lovett constitute the "Millennium Founders." Allegations directed at Millennium Partners, rather than any specific entity, apply to the conduct for which the specific Millennium Partners legal entity obscured its legal identity. In situations where the specific legal entity can be identified, the allegations are directed towards the specific legal entity as identified herein. For example, when Millennium Partners I, Inc. ("MPI") conducts business as "Millennium Partners, Inc." or "Millennium Partners," this complaint refers to the entity as MPI. On information and belief, at least some conduct taken in the name of "Millennium Partners" was undertaken on behalf of MPI. On information and belief, "Millennium Partners" failed to comply with the fictitious business name statutes, California Business and Professions Code section 17900 *et seq.*, thereby precluding parties such as the HOA from understanding the true identity or identities of the legal entities doing business under the name "Millennium Partners."

36. Defendant Sean Jeffries is Vice President of MSH and the authorized agent of MSD and MPM. Sean Jeffries signed the September 1, 2011 First Amendment to the Easement Agreement between the TJPA and the HOA, and was listed as the designated recipient of monitoring data from the TJPA regarding the sinking and tilting of the Tower. In this capacity but without authorization by the HOA, he volunteered and undertook to act on behalf of the HOA, effectively participating in HOA board meetings as if he were a member of the HOA's board, and thus owed a fiduciary duty to the HOA to keep them informed about any issues with the Millennium Tower. Sean Jeffries is a resident of San Francisco, California.

37. Defendant John Luciano is Vice President of MPM and was the Property Manager for Millennium Partners in relation to the Millennium Tower. He was also a member of the HOA's board from 2009 through 2016. Luciano was involved in the development, management, and sale of the Millennium Tower and its condominium units. As a representative of the entities with sole access to certain information about the Tower, Luciano owed a fiduciary duty to the HOA to keep the HOA informed about any issues with the Millennium Tower. John Luciano is a resident of San Francisco, California.

38. Defendant Webcor Construction LP ("Webcor"), is the survivor to a merger with Webcor Construction, Inc., and is a limited partnership formed under the laws of the State of California with its principal place of business in California and doing business as "Webcor Builders." Webcor Construction, Inc. was a corporation formed under the laws of the State of California, with its principal place of business in California, and also doing business as "Webcor Builders." Webcor entered into an Agreement for Construction Management Services with MSD to act as the general contractor for the Millennium Defendants in the construction of the Millennium Tower.

39. Defendant Handel Architects LLP ("Handel") is a limited liability partnership doing business in the City and County of San Francisco, California. Handel was the architect of record and designed the Millennium Tower and its components.

40. Defendant Treadwell & Rollo, Inc. ("Treadwell & Rollo") is a dissolved corporation that had its principal place of business in the City and County of San Francisco, California. Treadwell & Rollo was the geotechnical engineer of record for the Millennium Tower. Treadwell & Rollo was subsequently known as T & R Consolidated, Inc. Treadwell & Rollo sold its assets to Langan Engineering and Environmental Services, Inc. before dissolving.

41. Defendant Langan Engineering and Environmental Services, Inc. ("Langan") is a New Jersey corporation engaged in various geotechnical, environmental, and other engineering services, and is the successor in interest to Treadwell & Rollo, subsequently known as T & R Consolidated. Langan's liability as the successor in interest to Treadwell & Rollo is based on the following factual allegations:

a. All or substantially all of Treadwell & Rollo's assets were transferred to Langan pursuant to an Asset Purchase Agreement on November 1, 2010.

b. On information and belief, the HOA alleges that this asset transfer was not supported by adequate consideration.

c. Treadwell & Rollo legally changed its name to Treadwell & Rollo Consolidated, Inc. ("T & R Consolidated") after the asset purchase. T & R Consolidated subsequently dissolved and no longer exists as an operating entity.

d. Plans called for Treadwell & Rollo to maintain its name for an interim period, but be branded "A Langan Company." In 2012, it would become known as "Langan Engineering & Environmental Services."[15]

e. One or more individuals were officers, directors, or stockholders of both Treadwell & Rollo and Langan. Philip Tringale was President of Treadwell & Rollo, Inc., and currently is Director of Western Operations at Langan Engineering & Environmental Services. He represents that the start date for both positions was March 1992.[16]

f. Langan acquired all assets necessary to carry on Treadwell & Rollo's business, including its goodwill, books and records, licenses, trade accounts, and employees.

g. Langan continued to conduct business at Treadwell & Rollo's prior business address with substantially the same personnel Treadwell & Rollo employed, and the same general business operations that Treadwell & Rollo previously conducted.

h. Both Langan and Treadwell & Rollo publicly referred to the transaction as a merger between the two companies.

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[15] PR Newswire, *Langan Acquires Treadwell & Rollo* (Nov. 1, 2010), http://www.prnewswire.com/news-releases/langan-acquires-treadwell--rollo-106465148.html.

[16] Philip Tringale, LinkedIn, https://www.linkedin.com/in/philip-tringale-85b37711/.

i. Langan assumed the obligations of Treadwell & Rollo necessary for the continuation of Treadwell & Rollo's business obligations. Indeed, it continued on with Treadwell & Rollo's obligations at 301 Mission Street: From approximately 2012 through 2013, "Treadwell & Rollo: A Langan Company" produced memoranda to Millennium Partners evaluating Arup's settlement monitoring measurements. In 2014, "Langan Treadwell Rollo" continued with the same evaluation memoranda using the same template. And in December 2016, "Langan" continued the work Treadwell & Rollo had begun, presenting the results of building survey measurements in a Building Survey Report.

42. Defendant DeSimone Consulting Engineers LLC ("DeSimone") is a limited liability company organized under the laws of the State of Delaware and doing business in the City and County of San Francisco, California. DeSimone LLC acted as the structural engineer for the Millennium Defendants in connection with the design and construction of the Millennium Tower. DeSimone LLC filed a Cross-Complaint and an Answer admitting to providing structural engineering services at 301 Mission Street in the related matter, *Laura S. Lehman, et. al. v. Transbay Joint Powers Authority, et al.* DeSimone is also known as DeSimone Consulting Engineers, PLLC, and is also a professional limited liability company organized under the laws of the State of California and doing business in the City and County of San Francisco, California. DeSimone entered an Agreement for Structural Engineering Services to act as structural engineer for the Millennium Defendants in connection with the design and construction of the Millennium Tower.

43. Collectively, Treadwell & Rollo, Langan, and DeSimone are the "Engineering Defendants."

44. Defendant Transbay Joint Powers Authority ("TJPA") is a government joint powers entity created under California Government Code section 6500 *et seq.* with its principal office located at 201 Mission Street, Suite 2100, San Francisco, California 94105. The TJPA was created by a Joint Power Agreement dated April 2, 2001 between the City and County of

San Francisco, the Alameda-Contra Costa Transit District, and the Peninsula Corridor Joint Power Board. The TJPA is the entity charged with developing the Transbay Terminal, which includes construction of the five-story Transit Center and underground train facility directly adjacent to the Property.

45. Defendant Arup North America Ltd. ("Arup") is a corporation formed under the laws of the United Kingdom, and on information and belief has its principal place of business in California. Arup is a geotechnical engineering firm who was retained by the TJPA's architect, Pelli Clarke Pelli Architects, to provide geotechnical studies of the soil underlying, and foundation of, the Transbay Terminal Project, and to design a below-ground buttress pile wall on and adjacent to the Property.

46. Defendant Transbay Tower LLC is a limited liability company organized under the laws of the State of Delaware and conducting business within the State of California. Transbay Tower LLC is the owner and one of the developers of the Salesforce Tower, located at 415 Mission Street in San Francisco, California.

47. Defendant Boston Properties, Inc. is a corporation organized under the laws of the State of Delaware and conducting business within the State of California. On information and belief, Boston Properties, Inc. is a participant in, and exercises decision-making authority over, the development of the Salesforce Tower.

48. Defendant Clark-Hathaway Dinwiddie, A Joint Venture, is a joint venture formed by Clark Construction Group, LLC and Hathaway Dinwiddie Construction Company in connection with the construction of the Salesforce Tower. On information and belief, Clark-Hathaway was Transbay Tower LLC's general contractor responsible for managing the construction of the Salesforce Tower. Collectively, Transbay Tower LLC, Boston Properties, Inc., and Clark-Hathaway Dinwiddie constitute the "Salesforce Tower Defendants."

49. The HOA is ignorant of the true names and capacities of defendants sued as Does 1 through 100, inclusive, and therefore sues these defendants by such fictitious names. The HOA will amend this Complaint to allege the true names and capacities of these defendants when ascertained. Each of the fictitiously named defendants is, or will be, responsible for the

occurrences alleged in this Complaint and for the HOA's injuries, both existing and prospective. Each Doe defendant legally and proximately caused damage to the HOA. Each and every Doe defendant had a duty to the HOA to use reasonable care in performing the tasks related to the planning, development, creation, improvement, design, construction, supervision, observation, inspection, management, and/or repair of the Millennium Tower.

IV. SECONDARY LIABILITY

A. Single Enterprise Liability

1. Millennium Defendants

50. The Millennium Defendants are all collectively secondarily liable as a single enterprise for the direct acts and omissions of each of their component entities—MSD, MSH, MPM, MP LLC, and MPI—alleged herein. Although there are technically five legal entities, "there is but one enterprise," and this enterprise "has been so handled that it should respond, as a whole, for the debts of certain component elements of it." *See Las Palmas Associates v. Las Palmas Center Associates*, 235 Cal. App. 3d 1220, 1248 (1991). Accordingly, the Court should construct, for purposes of imposing liability, an entity comprising the assets and liabilities of all the Millennium Defendants, and charge it with the liabilities of all the Millennium Defendants. *See id.* The Millennium Defendants' secondary liability as a single enterprise is based on at least the following factual allegations:

a. The use of each of the component entities of the Millennium Defendants as mere shells, instrumentalities, and conduits for a single purpose—the development of the Millennium Tower;

b. The use by each of the component entities of the Millennium Defendants of the same offices and business location;

c. The employment by each of the Millennium Defendants of the same employees and attorney;

d. The failure to adequately capitalize MSD, MSH, and MPM;

e. The disregard of legal formalities and the failure to maintain arm's length relationships among the Millennium Defendants;

f. The concealment of the identity of the specific responsible Millennium Defendants;

g. The use of component entities of the Millennium Defendants to shield against liability of other component Millennium Defendant entities;

h. The fact that adherence to the fiction of a separate corporate existence of each of the five Millennium Defendants would promote injustice under these circumstances; and

i. The fact that throughout the entire period of development, from the concept of the Millennium Tower development in the late 1990s to the sales and management extending from 2009 to 2016, the Millennium Defendants acted as a single enterprise and capitalized on the name recognition of that single enterprise to reap hundreds of millions of dollars in revenues. In dozens of official documents, the Millennium Defendants represented that the owner and developer of the Millennium Tower was "Millennium Partners" and acted as a single entity. The Millennium Defendants made this representation to the San Francisco city officials responsible for permitting the Millennium Tower and prospective and actual homeowners of the units in the Millennium Tower.

B. Alter Ego Liability

1. Millennium Partners

51. Christopher Jeffries is secondarily liable for the conduct of MSD, MSH, MPM, MP LLC, and MPI alleged herein because each of these five entities were and are the alter egos that Chris Jeffries used for the purpose of the Millennium Tower project. Each of MSD, MSH, MPM, MP LLC, and MPI were at all relevant times the alter egos of Chris Jeffries. A direct or indirect unity of interest and ownership existed between each of MSD, MSH, MPM, MP LLC, and MPI, on the one hand, and Chris Jeffries on the other hand, and adherence to the fiction of separate corporate existence would promote injustice under these circumstances. Because the Millennium Defendants are all non-public entities, the full extent of Chris Jeffries' influence and control over all of the Millennium Entities is within the exclusive knowledge of Chris Jeffries. Chris Jeffries' alter ego

liability is based on at least the following factual allegations:

a. Christopher Jeffries directs and manages all Millennium Partners' projects, including all of the conduct with respect to the Millennium Tower undertaken by MSD, MSH, MPM, MP LLC, and MPI. This has been the case since he founded Millennium Partners and "set his sights on key gateway cities across the United States" for his new form of mixed-use developments.[17] His co-founder Aarons acknowledged as much, stating that Christopher Jeffries makes the "final decisions" at Millennium.[18] This is also specifically true as to the Millennium Tower: Christopher Jeffries took ownership of and defended the Tower on behalf of MPI at a September 20, 2016 press conference declaring: "We did this building the right way."[19]

b. Chris Jeffries' efforts to develop, construct, improve, market, and sell the Millennium Tower by using, dominating, and controlling MSD, MSH, MPM, MP LLC, and MPI allowed him, to effectuate the dream of developing "housing with a lifestyle" across the country.[20] In so doing, Chris Jeffries dominated and controlled the affairs of MSD, MSH, MPM, MP LLC, and MPI, using them as mere conduits for his worldwide real estate development pursuits.

c. Chris Jeffries profited from sales of condominium units in the Millennium Tower and benefitted from the success of the Millennium Tower in his other business ventures.

d. Chris Jeffries controlled and dominated MSD, MSH, MPM, MP LLC, and

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[17] Millennium Partners, http://millenniumptrs.com (last visited Mar. 28, 2017).

[18] Aug. 12, 2010 Philip Aarons Dep. 42:18-21, cited as Ex. 5 to Plaintiff's Notice of Filing Exhibits in Support of Plaintiffs' Responses to Defendants' Motions for Summary Judgment and Motions for Judgment on the Pleadings, *Altenel, Inc. v. Millennium Partners, LLC, et al.*, No. 1:11-cv-22806-KMW, ECF No. 338-5.

[19] Associated Press, *San Francisco Skyscraper Is Leaning - And Sinking,* Popular Mechs. (Oct. 24, 2016), http://www.popularmechanics.com/technology/infrastructure/a23521/san-francisco-skyscraper-is-leaningand-sinking/.

[20] Jennifer Frey, *Striking It Ritz; For the, er, Richly Deserving, a Not-So-Humble Abode*, Wash. Post, Aug. 24, 1999.

MPI when making crucial decisions about the development, construction, and management of the Millennium Tower. For example, the residential layouts were the product of his vision. A memorandum enclosing a revised plan of the amenity level and mid-rise building layouts incorporated Chris Jeffries' comments.[21]

e. Chris Jeffries disregarded the formal distinctions between MSD, MSH, MPM, MP LLC, and MPI treating them as the same. For example, Chris Jeffries sent memoranda reviewing and suggesting changes to 301 Mission plans on "Millennium Partners" letterhead.[22] In addition, "Millennium Partners" was the recipient of invoices for construction and other professional services completed at the Millennium Tower by various firms.[23]

f. The assets of MSD, MSH, MPM, MP LLC, and MPI were commingled in the development of the Millennium Tower. On information and belief, Chris Jeffries was involved in this commingling of assets and diverted the income and assets of the various entities without regard to the corporate form.

g. Chris Jeffries shares his attorney with the Millennium Defendants.

h. Chris Jeffries has benefited from the development, construction, and sale of the Millennium Tower such that it would be unjust if he were to escape liability for obligations associated with these benefits by adhering to the fiction that MSD, MSH, MPM, MP LLC, and MPI each have a separate corporate existence. Modelling subsequent developments on the San Francisco Millennium Tower, Chris Jeffries has benefited from his reputation as a national leader in luxury living. Without the "impressive portfolio across the nation," including the

[21] Memorandum from Glenn Rescalvo to Phil Lovett, Richard Baumert, Sean Jeffries and Steve Patterson re Amenity Level/Mid-rise layouts (Sept. 21, 2005).

[22] Memorandum from Chris Jeffries to Mark Farrar, Sean Jeffries, Pamela Malkani & David Rothstein (May 20, 2002).

[23] J&C Fuentes Invoice (May 21, 2010); Architectural Energy Corp. Invoice (April 30, 2010); McMillan Companies Invoice (May 6, 2010).

Millennium Tower San Francisco, Chris Jeffries could not have drawn on this powerful branding to advertise his latest project, the Millennium Tower in Boston.[24] Accolades include the San Francisco Chamber of Commerce's "Excellence in Business—Building San Francisco" Award, which was accepted by Managing Director Baumert.[25] In establishing a brand and a logo based on "Millennium Partners," which is identified with him personally, Chris Jeffries personally benefitted from the Millennium Tower and related projects. But in order to draw upon the power of this national brand, Chris Jeffries must be required to take responsibility for the flaws in his various developments.

52. Philip Aarons is secondarily liable for the conduct of MSD, MSH, MPM, MP LLC, and MPI alleged herein because each of these five entities were and are the alter egos that Aarons used for the purpose of the Millennium Tower project. Each of MSD, MSH, MPM, MP LLC, and MPI were at all relevant times the alter egos of Aarons. A direct or indirect unity of interest and ownership existed between each of MSD, MSH, MPM, MP LLC, and MPI, on the one hand, and Aarons on the other hand, and adherence to the fiction of separate corporate existence would promote injustice under these circumstances. Because the Millennium Defendants are all non-public entities, the full extent of Aarons' influence and control over all of the Millennium Entities is within the exclusive knowledge of Aarons. Aarons' alter ego liability is based on at least the following factual allegations:

a. Aarons speaks and acts as a representative for and owner of Millennium Partners, including all of the conduct with respect to the Millennium Tower allegedly undertaken by MSD, MSH, MPM, MP LLC, and MPI. He too represented MPI at the September 2016 press conference. Aarons was involved in high-level strategic decisions about the Millennium Tower project in its early development

[24] Upscale Living Magazine, Home/Real Estate/Millennium Boston Tower (2017), http://upscalelivingmag.com/millennium-boston-tower/.

[25] Business Wire, *Millennium Tower Honored at Excellence in Business Awards (Dec. 8, 2010),* http://www.businesswire.com/news/home/20101208006994/en/Millennium-Tower-Honored-Excellence-Business-Awards.

phases; for example, he joined Sean Jeffries to meet with potential designers and architects for the project in 2006. In 2003, when speaking to the planning commissioners for the City and County of San Francisco, Aarons stated in relation to the Millennium Tower "This project we are especially proud of." He is identified as an "Important MP [Person]" in the Millennium Tower Sales Manual.[26]

b. Aarons' efforts to develop, construct, improve, market, and sell the Millennium Tower by using, dominating, and controlling MSD, MSH, MPM, MP LLC, and MPI allowed him, to effectuate the dream of developing "housing with a lifestyle" across the country.[27] In so doing, Aarons dominated and controlled the affairs of MSD, MSH, MPM, MP LLC, and MPI, using them as mere conduits for his worldwide real estate development pursuits.

c. Aarons profited from sales of condominium units in the Millennium Tower and benefitted from the success of the Millennium Tower in his other business ventures.

d. Aarons controlled and dominated MSD, MSH, MPM, MP LLC, and MPI when making crucial decisions about the development, construction, and management of the Millennium Tower.

e. Aarons disregarded the formal distinctions between MSD, MSH, MPM, MP LLC, and MPI treating them as the same. For example, he received transmittals from Handel of Millennium Tower drawings and plans to "Millennium Partners New York."[28] In addition, "Millennium Partners" was the recipient of invoices for construction and other professional services

[26] Millennium Tower San Francisco Sales Manual, Book 1, Oct. 2007.

[27] Jennifer Frey, *Striking It Ritz; For the, er, Richly Deserving, a Not-So-Humble Abode*, Wash. Post, Aug. 24, 1999.

[28] *See, e.g.*, Handel Architects Transmittal to Rod Johnson & Phil Lovett (June 19, 2006).

completed at the Millennium Tower by various firms.[29] Steven Hood (an employee of Millennium Partners) and Sean Jeffries sent correspondence related to the Millennium Tower on behalf of the Millennium Defendants and on "Millennium Partners" letterhead.[30]

f. The assets of MSD, MSH, MPM, MP LLC, and MPI were commingled in the development of the Millennium Tower. Aarons was involved in this commingling of assets and diverted the income and assets of the various entities without regard to the corporate form.

g. Aarons shares his attorney with the Millennium Defendants.

h. Aarons has benefited from the development, construction, and sale of the Millennium Tower such that it would be unjust if he were to escape liability for obligations associated with these benefits by adhering to the fiction that MSD, MSH, MPM, MP LLC, and MPI each have a separate corporate existence. Modelling subsequent developments on the San Francisco Millennium Tower, Aarons has benefited from Millennium Partners' reputation as a national leader in luxury living. Without the "impressive portfolio across the nation," including the Millennium Tower San Francisco, Aarons could not have drawn on this powerful branding to advertise his latest project, the Millennium Tower in Boston.[31] Accolades include the San Francisco Chamber of Commerce's "Excellence in Business—Building San Francisco" Award, which was accepted by Managing Director Baumert.[32] In establishing a brand and a logo based on "Millennium Partners," which is identified with him personally, Aarons personally benefitted

[29] J&C Fuentes Invoice (May 21, 2010); Architectural Energy Corp. Invoice (April 30, 2010); McMillan Companies Invoice (May 6, 2010).

[30] Letter from Steven Hood to Kenneth Klein at Simpson Gumpertz & Heger (June 8, 2009). Letter from Sean Jeffries to Jeff Peters (Feb. 28, 2014).

[31] Upscale Living Magazine, Home/Real Estate/Millennium Boston Tower (2017), http://upscalelivingmag.com/millennium-boston-tower/.

[32] Business Wire, *Millennium Tower Honored at Excellence in Business Awards (Dec. 8, 2010),* http://www.businesswire.com/news/home/20101208006994/en/Millennium-Tower-Honored-Excellence-Business-Awards.

from the Millennium Tower and related projects. But in order to draw upon the power of this national brand, Aarons must be required to take responsibility for the flaws in his various developments.

53. Philip Lovett is secondarily liable for the conduct of MSD, MSH, MPM, MP LLC, and MPI alleged herein because each of these five entities were and are the alter egos that Lovett used for the purpose of the Millennium Tower project. Each of MSD, MSH, MPM, MP LLC, and MPI were at all relevant times the alter egos of Lovett. A direct or indirect unity of interest and ownership existed between each of MSD, MSH, MPM, MP LLC, and MPI, on the one hand, and Lovett on the other hand, and adherence to the fiction of separate corporate existence would promote injustice under these circumstances. Because the Millennium Defendants are all non-public entities, the full extent of Lovett's influence and control over all of the Millennium Entities is within the exclusive knowledge of Lovett. Lovett's alter ego liability is based on at least the following factual allegations:

a. Lovett is responsible for the day-to-day operations and management of all Millennium Partners projects, including all of the conduct with respect to the Millennium Tower allegedly undertaken by MSD, MSH, MPM, MP LLC, and MPI.[33] Accordingly, he is listed as an emergency contact in the Millennium Tower Sales Manual[34] and was involved in communications regarding the budgets for each of the Millennium Tower constituent residences.[35] He also closely supervised the minutiae of building design decisions from the unit finishes to the waterproofing of the garage. Lovett exercised control over several of the Millennium Partners entities as Vice President of MSH (which is the sole member of MSD) and signed legal documents on behalf of MSD.

b. Lovett's efforts to develop, construct, improve, market, and sell the Millennium

[33] Millennium Partners, http://millenniumptrs.com (last visited March 28, 2017).

[34] Millennium Tower San Francisco Sales Manual, Book 1, Oct. 2007.

[35] Email from David Goben to Stephanie Kay-Foss regarding Preliminary Budget Comments (Feb. 28, 2013).

Tower by using, dominating, and controlling MSD, MSH, MPM, MP LLC, and MPI allowed him, to effectuate the dream of developing "housing with a lifestyle" across the country.[36] In so doing, Lovett dominated and controlled the affairs of MSD, MSH, MPM, MP LLC, and MPI, using them as mere conduits for his worldwide real estate development pursuits.

c. Lovett profited from sales of condominium units in the Millennium Tower and benefitted from the success of the Millennium Tower in his other business ventures.

d. Lovett controlled and dominated MSD, MSH, MPM, MP LLC, and MPI when making crucial decisions about the development, construction, and management of the Millennium Tower.

e. Lovett disregarded the formal distinctions between MSD, MSH, MPM, MP LLC, and MPI treating them as the same. For example, "Millennium Partners" was the recipient of invoices for construction and other professional services completed at the Millennium Tower by various firms.[37] Steven Hood (an employee of Millennium Partners) and Sean Jeffries sent correspondence related to the Millennium Tower on behalf of the Millennium Defendants and on "Millennium Partners" letterhead. [38][39]

f. The assets of MSD, MSH, MPM, MP LLC, and MPI were commingled in the development of the Millennium Tower. Lovett was involved in this commingling of assets and diverted the income and assets of the various entities without regard to the corporate form.

g. Lovett shares his attorney with the Millennium Defendants.

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[36] Jennifer Frey, *Striking It Ritz; For the, er, Richly Deserving, a Not-So-Humble Abode*, Wash. Post, Aug. 24, 1999.

[37] J&C Fuentes Invoice (May 21, 2010); Architectural Energy Corp. Invoice (April 30, 2010); McMillan Companies Invoice (May 6, 2010).

[38] Letter from Steven Hood to Kenneth Klein at Simpson Gumpertz & Heger (June 8, 2009).

[39] Letter from Sean Jeffries to Jeff Peters (Feb. 28, 2014).

h. Lovett has benefited from the development, construction, and sale of the Millennium Tower such that it would be unjust if he were to escape liability for obligations associated with these benefits by adhering to the fiction that MSD, MSH, MPM, MP LLC, and MPI each have a separate corporate existence. Modelling subsequent developments on the San Francisco Millennium Tower, Lovett has benefited from Millennium Partners' reputation as a national leader in luxury living. Without the "impressive portfolio across the nation," including the Millennium Tower San Francisco, Lovett could not have drawn on this powerful branding to advertise their latest project, the Millennium Tower in Boston.[40] Accolades include the San Francisco Chamber of Commerce's "Excellence in Business—Building San Francisco" Award, which was accepted by Managing Director Baumert.[41] In establishing a brand and a logo based on "Millennium Partners," which is identified with him personally, Lovett personally benefitted from the Millennium Tower and related projects. But in order to draw upon the power of this national brand, Lovett must be required to take responsibility for the flaws in his various developments.

2. Millennium Defendants

54. As an alternative to the theory of single enterprise liability alleged against the Millennium Defendants alleged in section IV.A.1 *supra*, the HOA alleges that the Millennium Defendants are secondarily liable based on the following alter ego theory of secondary liability.

55. MPI is liable for the conduct of MSD, MSH, MPM, and MP LLC alleged herein because each of these four entities were and are the alter egos that MPI used for the purpose of the Millennium Tower project. Each of MSD, MSH, MPM, and MP LLC were at all relevant times the alter egos of MPI, because a unity of interest and ownership existed between each of

[40] Upscale Living Magazine, Home/Real Estate/Millennium Boston Tower (2017), http://upscalelivingmag.com/millennium-boston-tower/.

[41] Business Wire, *Millennium Tower Honored at Excellence in Business Awards (Dec. 8, 2010),* http://www.businesswire.com/news/home/20101208006994/en/Millennium-Tower-Honored-Excellence-Business-Awards.

MSD, MSH, MPM, MP LLC, on the one hand, and MPI on the other hand, and adherence to the fiction of separate corporate existence would promote injustice under these circumstances. MPI's alter ego liability is based on at least the following factual allegations:

a. MSD, MSH, MPM, and MP LLC existed as mere conduits or shell corporations for the interests and manipulations of MPI.

b. MPI dominated and controlled the affairs of MSD, MSH, MPM and MP LLC, using them as mere conduits for its worldwide real estate development pursuits.

c. MPI profited from sales of condominium units in the Millennium Tower and benefitted from the success of the Millennium Tower in its other business ventures.

d. MPI controlled and dominated MSD, MSH, MPM, and MP LLC and made crucial decisions about the development, construction, and management of the Millennium Tower.

e. MPI disregarded the formal distinctions between MSD, MSH, MPM, and MP LLC, treating them as the same.

f. MSD, MSH, MPM, MP LLC, and MPI all share a business address at 1995 Broadway, New York, New York. MSD, MSH, MPM, MP LLC, and MPI also share a common website and use a common logo and brand.

g. The assets of MSD, MSH, MPM, MP LLC, and MPI were commingled in the development of the Millennium Tower. MPI was involved in this commingling of assets and diverted the income and assets of the various entities without regard to the corporate form.

h. MSD, MSH, MPM, MP LLC, and MPI share employees and executives. For instance, Richard Baumert, identified as a Managing Partner of Millennium Boston on the Millennium Partners website,[42] also signed the First Addendum to the Residential Purchase Agreement as Vice-President of Mission Street

[42] Millennium Partners, http://millenniumptrs.com (last visited March 28, 2017).

Holdings, LLC.[43] Other correspondence identifies him as an employee of Millennium Partners LLC.[44] The overlapping structure of employment and control confused business associates as well: Steven Hood is sometimes addressed as affiliated with "Millennium Partners" and other times with "Mission Street Development."[45] MPI's officers and shareholders themselves work for and have various positions at MSD, MSH, MPM, and MP LLC.

i. MSD, MSH, MPM, MP LLC, and MPI also share attorneys. In this action and other litigation relating to the sinking and tilting of the Millennium Tower, Peter Meier and Paul Hastings LLP represent MPI, MSD, MSH, MP LLC, MPM, the Millennium Founders, Sean Jeffries, and John Luciano.

j. MSD, MSH, MPM, and MP LLC were and are undercapitalized and potentially incapable of satisfying a judgment should the HOA prevail in this action. In particular, on information and belief, none of MSD, MSH, MPM, or MP LLC has sufficient assets or is insured sufficiently to cover the HOA's alleged damages.

k. MPI has benefited from the development, construction, and sale of the Millennium Tower; it would be unjust if it were to escape liability for obligations associated with these benefits by adhering to the fiction that MSD, MSH, MPM, and MP LLC each have a separate corporate existence. Modelling subsequent developments on the San Francisco Millennium Tower, MPI has benefited from its reputation as national leaders in luxury living. Without its "impressive portfolio across the nation," including the Millennium Tower San Francisco, MPI could not have drawn on this powerful branding to

[43] First Addendum to the Residential Purchase Agreement (March 20, 2012) (for Buyers Richard and Jo-Tung Tu Chang).

[44] Letter from Shirley Cui to Richard Baumert (Oct. 27, 2009).

[45] Letter from Brian Dykes (TJPA) to Steven Hood (Mission Street Development) (Jan. 8, 2013); Letter from Ramin Golesorkhi and Joseph E. Romano (Langan Treadwell Rollo) to Steven Hood (Millennium Partners) (Sept. 6, 2016).

advertise its latest project, the Millennium Tower in Boston.[46] Accolades include the San Francisco Chamber of Commerce's "Excellence in Business—Building San Francisco" Award, which was accepted by Managing Director Baumert.[47] In establishing a brand and a logo based on "Millennium Partners," MPI benefitted from the Millennium Tower and related projects.

56. Alternatively, MSH is liable for the conduct of MSD alleged herein because MSD was and is the alter ego that MSH used for the purpose of the Millennium Tower project. MSD was at all relevant times the alter ego of MSH. A unity of interest and ownership existed between each MSD and MSH adherence to the fiction of separate corporate existence would promote injustice under these circumstances. MSH's alter ego liability is based on at least the following factual allegations: MSH dominated and controlled MSD; MSH directly owns at least some of MSD's stock; MSD was a mere shell and conduit for MSH's affairs, MSD was inadequately capitalized; MSD failed to abide by the formalities of the corporate existence; recognizing the separate existence of MSD would promote injustice under the circumstances.

57. Alternatively, MP LLC is liable for the conduct of MSD, MSH and MPM alleged herein because each of these three entities were and are the alter egos that MP LLC used for the purpose of the Millennium Tower project. Each of MSD, MSH, and MPM were at all relevant times the alter egos of MP LLC, because a unity of interest and ownership existed between each of MSD, MSH, MPM, on the one hand, and MP LLC, on the other hand, and adherence to the fiction of separate corporate existence would promote injustice under these circumstances. MP LLC's alter ego liability is based on at least the following factual allegations: MP LLC dominated and controlled MSD, MSH and MPM; MP LLC indirectly owns a least some of MSD, MSH and MPM's stock; MSD, MSH and MPM were mere shells and conduits for MP LLC's affairs; MSD, MSH and MPM were inadequately capitalized; MSD, MSH and MPM

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[46] Upscale Living Magazine, Home/Real Estate/Millennium Boston Tower (2017), http://upscalelivingmag.com/millennium-boston-tower/.

[47] Business Wire, *Millennium Tower Honored at Excellence in Business Awards (Dec. 8, 2010),* http://www.businesswire.com/news/home/20101208006994/en/Millennium-Tower-Honored-Excellence-Business-Awards.

failed to abide by the formalities of the corporate existence; and recognizing the separate existence of MSD, MSH and MPM would promote injustice under the circumstances.

58. Alternatively, MPM is liable for the conduct of MSD and MSH alleged herein because each of these entities were and are the alter egos that MPM used for the purpose of the Millennium Tower project. Both MSD and MSH, were at all relevant times the alter egos of MPM, because a unity of interest and ownership existed between each of MSD and MSH, on the one hand, and MPM, on the other hand, and adherence to the fiction of separate corporate existence would promote injustice under these circumstances. MPM's alter ego liability of the is based on at least the following factual allegations: MPM dominated and controlled MSD and MSH; MPM indirectly owns at least some of MSD and MSH's stock; MSD, and MSH were mere shells and conduits for MPM's affairs; MSD and MSH were inadequately capitalized; MSD and MSH failed to abide by the formalities of the corporate existence; and recognizing the separate existence of MSD and MSH would promote injustice under the circumstances.

C. Principal Agent Liability

1. Millennium Defendants

59. As an alternative to the theories of single enterprise and alter ego liability alleged in sections IV.A.1 and IV.B.2 *supra*, the HOA alleges that the Millennium Defendants are secondarily liable based on the following principal-agent theory of secondary liability.

60. MPI was the principal and MSD was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MPI represented that MSD would act for MPI in connection with MSD's activities developing the Millennium Tower by allowing MSD to take actions on behalf of MP or Millennium Partners, both of which were used to refer to MPI. MPI so controlled MSD as to cause MSD to become merely the agent of MPI. MPI had the right to control and supervise the activities of MSD with respect to the development of the Millennium Tower, including control over the day-to-day operations of MSD with respect to the development of the Millennium Tower. MSD accepted that it would be the agent of MPI and understood that it would be controlled by MPI for the purpose of the Millennium Tower's development. The scope of MPI's atypical control over MSD is demonstrated by the factual

allegations in paragraph 55, *supra*.

61. MPI was the principal and MSH was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MPI represented that MSH would act for MPI in connection with MSH's activities developing the Millennium Tower by allowing MSH to take actions on behalf of MP of Millennium Partners, both of which refer to MPI. MPI so controlled MSH as to cause MSH to become merely the agent of MPI. MPI had the right to control and supervise the activities of MSH with respect to the development of the Millennium Tower, including control over the day-to-day operations of MSH with respect to the development of the Millennium Tower. MSH accepted that it would be the agent of MPI and understood that it would be controlled by MPI for the purpose of the Millennium Tower's development. The scope of MPI's atypical control over MSH is demonstrated by the factual allegations in paragraph 55, *supra*.

62. MPI was the principal and MP LLC was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MPI represented that MP LLC would act for MPI in connection with MP LLC's activities developing the Millennium Tower by allowing MP LLC to take actions on behalf of MP of Millennium Partners, both of which refer to MPI. MPI so controlled MP LLC as to cause MP LLC to become merely the agent of MPI. MPI had the right to control and supervise the activities of MP LLC with respect to the development of the Millennium Tower, including control over the day-to-day operations of MP LLC with respect to the development of the Millennium Tower. MP LLC accepted that it would be the agent of MPI and understood that it would be controlled by MPI for the purpose of the Millennium Tower's development. The scope of MPI's atypical control over MP LLC is demonstrated by the factual allegations in paragraph 55, *supra*.

63. MPI was the principal and MPM was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MPI represented that MPM would act for MPI in connection with MPM's activities developing the Millennium Tower by allowed MPM to take actions on behalf of MP of Millennium Partners, both of which refer to MPI. MPI so controlled MPM as to cause MPM to become merely the agent of MPI. MPI had the right to

control and supervise the activities of MPM with respect to the development of the Millennium Tower, including control over the day-to-day operations of MPM with respect to the development of the Millennium Tower. MPM accepted that it would be the agent of MPI and understood that it would be controlled by MPI for the purpose of the Millennium Tower's development. The scope of MPI's atypical control over MPM is demonstrated by the factual allegations in paragraph 55, *supra*.

64. Alternatively, MP LLC was the principal and MSD was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MP LLC so controlled MSD as to cause MSD to become merely the agent of MP LLC. MP LLC had the right to control and supervise the activities of MSD with respect to the development of the Millennium Tower, including control over the day-to-day operations of MSD with respect to the development of the Millennium Tower. The scope of MP LLC's atypical control over MSD is demonstrated by the factual allegations in paragraph 57, *supra*.

65. Alternatively, MP LLC was the principal and MSH was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MP LLC so controlled MSH as to cause MSH to become merely the agent of MP LLC. MP LLC had the right to control and supervise the activities of MSH with respect to the development of the Millennium Tower, including control over the day-to-day operations of MSH with respect to the development of the Millennium Tower. The scope of MP LLC's atypical control over MSH is demonstrated by the factual allegations in paragraph 57, *supra*.

66. Alternatively, MP LLC was the principal and MPM was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MP LLC so controlled MPM as to cause MPM to become merely the agent of MP LLC. MP LLC had the right to control and supervise the activities of MPM with respect to the development of the Millennium Tower, including control over the day-to-day operations of MPM with respect to the development of the Millennium Tower. The scope of MP LLC's atypical control over MPM is demonstrated by the factual allegations in paragraph 57, *supra*.

67. Alternatively, MPM was the principal and MSD was the agent in a principal-

agent relationship with respect to the development of the Millennium Tower. MPM so controlled MSD as to cause MSD to become merely the agent of MPM. MPM had the right to control and supervise the activities of MSD with respect to the development of the Millennium Tower, including control over the day-to-day operations of MSD with respect to the development of the Millennium Tower. The scope of MPM's atypical control over MSD is demonstrated by the factual allegations in paragraph 58, *supra*.

68. Alternatively, MPM was the principal and MSH was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MPM so controlled MSH as to cause MSH to become merely the agent of MPM. MPM had the right to control and supervise the activities of MSH with respect to the development of the Millennium Tower, including control over the day-to-day operations of MSH with respect to the development of the Millennium Tower. The scope of MPM's atypical control over MSH is demonstrated by the factual allegations in paragraph 58, *supra*.

69. Alternatively, MSH was the principal and MSD was the agent in a principal-agent relationship with respect to the development of the Millennium Tower. MSH so controlled MSD as to cause MSD to become merely the agent of MSH. MSH had the right to control and supervise the activities of MSD with respect to the development of the Millennium Tower, including control over the day-to-day operations of MSD with respect to the development of the Millennium Tower. The scope of MSH's atypical control over MSD is demonstrated by the factual allegations in paragraph 56, *supra*.

V. JURISDICTION AND VENUE

70. Jurisdiction over this action in the Superior Court of the State of California in and for the County of San Francisco is proper pursuant to California Code of Civil Procedure section 410.10 because all Defendants have sufficient minimum contacts with California to support the exercise of jurisdiction.

71. Venue is proper in the Superior Court of the State of California pursuant to California Code of Civil Procedure section 392 because the real property that is the subject of the action is located in the City and County of San Francisco. Venue is also proper pursuant to

California Code of Civil Procedure section 395.5 because this is the county where some Defendants reside, and pursuant to California Code of Civil Procedure section 395.5 because this county is where the corporate defendant entities' relevant contracts were entered into and performed, and where the relevant obligations and liabilities arose.

VI. EASEMENT AGREEMENTS AND FEIR

72. The TJPA owns real property adjacent to the Property and is in the process of building a new transit terminal that will include an above-ground bus station and a below-ground rail station. It entered into an Easement Agreement with MSD on October 10, 2008, which was authorized by the TJPA Board of Directors on October 17, 2008, and recorded in the official records of the City and County of San Francisco on March 25, 2009, Document no. 2009-I739852-00 (the "Easement Agreement").

73. The TJPA then entered into the First Amendment to the Easement Agreement with MSD and the HOA on September 1, 2011, which was recorded in the official records of the City and County of San Francisco on November 3, 2011, Document no. 2011-J296169-00 (the "Amended Easement Amendment").

74. Under the terms of the Easement Agreement, at Section II.A.1(a), the TJPA covenanted and agreed to design and construct the Support System (lateral and subjacent support for the Property) and the Transit Center to stabilize the soil beneath the Millennium Tower, prevent the material movement and/or settlement of the Millennium Tower, and provide for the structural support, integrity, and safety of the Millennium Tower during and after the TJPA's construction of the Transit Center.

75. The TJPA, at Section II.A.1.(b) of the Easement Agreement, agreed that it has the full, complete, and exclusive responsibility for the support, integrity, and safety of the Millennium Tower to the extent the Millennium Tower is affected by the construction of the Transit Center and Support System.

76. Under Section II.B.1(h) of the Easement Agreement, the TJPA agreed to repair, at its own cost and expense, or pay the reasonable cost of repairing, any damage to the Millennium Tower substantially caused by the TJPA's construction activities. The TJPA specifically

acknowledged that its obligation to repair damage to the Millennium Tower substantially caused by the TJPA's construction activities is not dependent on the existence of fault or negligence on the TJPA's part. In particular, but not exclusively, the TJPA agreed to repair damage to waterproofing or cracks in the foundations or walls of the Millennium Tower resulting from settlement or movement substantially caused by its construction activities.

77. Pursuant to the California Environmental Quality Act ("CEQA") and in light of the size and scope of the Transit Center, a Final Environmental Impact Report ("FEIR") was prepared for the Transit Center in 2004.

78. As lead agency for the Transit Center under CEQA, TJPA prepared and subsequently certified the FEIR.

79. On April 22, 2004, TJPA adopted its Resolution No. 04-004, approving the Transit Center and adopting CEQA findings, a Statement of Overriding Considerations, and a Mitigation Monitoring and Reporting Program for the Transit Center under CEQA. As required by CEQA, TJPA found that the Mitigation Monitoring and Reporting Program set forth enforceable mitigation measures, the implementation of which would reduce or avoid potentially significant environmental consequences of the Transit Center.

80. TJPA has subsequently adopted several addenda to the FEIR, determining in each case that modifications to the Transit Center would not require subsequent environmental review and would not require major revisions to the FEIR.

81. On information and belief, TJPA incorporated the Mitigation Measures as enforceable components of the Transit Center Project in its Resolution No. 04-004, as required under CEQA.

82. The substantive undertakings and obligations of the mitigation measures required for the Transit Center, specifically Mitigation Measure SG 1, required TJPA to "[m]onitor adjacent buildings for movement, and if movement is detected, take immediate action to control the movement." Mitigation Monitoring and Reporting Program, Rev. 1, 29 NOV07 at Mitigation Measure SG 1. The Mitigation Monitoring and Reporting Program requires TJPA to enforce such monitoring and corrective action by requiring the same to be included in contract

documents and to "inspect contractors' activities to ensure compliance." *Id.*

83. Similarly, in Mitigation Measure SG 4, TJPA undertook to "[u]nderpin … to protect existing structures from potential damage that could result from excessive ground movements during construction." *Id.* at Mitigation Measure SG 4.

84. In Mitigation Measure SG 5, TJPA undertook to "assure proper design and construction of pile-supported foundations for structures to control potential settlement of the surface." Mitigation Measure SG 5 also stated that "[s]tability of excavations and resultant impacts on adjacent structures can be controlled within tolerable limits by proper design and implementation of the excavation shoring systems." *Id.* at Mitigation Measure SG 5.

85. After it began construction of the Transit Center, TJPA—through Arup—detected movement of the Tower that exceeded both "action trigger levels" and the "maximum allowable movement" that TJPA was required to set and which it promised not to exceed, but TJPA ignored its obligations under the FEIR and related construction specifications, refusing to take any action to control the movement of the Tower, and to prevent resulting impacts on the Tower. Instead, TJPA continued with the construction activities that, on information and belief, it knew and knows now are causing movement of the Tower.

86. The undertakings and obligations of the Mitigation Measures and the Mitigation Monitoring Report Program were officially recognized and relied upon by TJPA to ostensibly and allegedly avoid causing significant environmental impacts in connection with construction of the Transit Center. When TJPA undertook those obligations, it was aware of the Tower's plans and designs.

87. TJPA has not completed construction of the Transit Center, and its obligations to comply with the Mitigation Measures are continuing obligations.

88. Despite the mandate to implement and enforce CEQA mitigation measures, no enforcement obligations have been undertaken to date by TJPA to effectively avoid the significant impacts identified in the FEIR. To the contrary, TJPA has breached its obligations under the FEIR.

89. The HOA is the successor in interest to MSD under the Easement Agreement. On

or about August 23, 2016, the HOA gave notice to the TJPA of the HOA's claims against the TJPA for damages to the extent required under Government Code section 910 *et seq.* The TJPA denied the HOA's claims on or about October 7, 2016.

VII. THE DEFECTS

90. The Tower was constructed on an inadequate foundation system and has experienced vertical displacement of over 16 inches. The Tower has settled differentially and is it out of plumb by over 12 inches. The Property also suffers from other defects, including inadequate garage construction and waterproofing, defective windows, curtain wall corrosion and water intrusion, inter-unit odor transmission, cracks, and alignment issues.

91. The following list of defects as defined in the California Civil Code is preliminary and nonexclusive and, therefore, is given without prejudice to the HOA's right to expand, amend, modify, or augment its claims and/or list of defects at any time, and the HOA specifically reserves its right to do so herein:

a. Civil Code § 896(a)(2): Water intrusion through windows and their systems and assemblies, including without limitation assemblies, thresholds, framing, substrate, flashings and trim, if any, or their designed or actual moisture barriers, including without limitation, internal barriers within the systems themselves. Such deficiencies have led to water intrusion into framing cavities and/or unit interiors, causing degradation of materials.

b. Civil Code § 896(a)(7): Water intrusion through foundation system and slabs. The deficiencies have led to water intrusion into adjacent systems, including the Garage and basement areas in the Tower and Podium, causing staining and degradation of materials.

c. Civil Code § 896(a)(14): Plumbing systems leak. These deficiencies have led to water intrusion, staining, corrosion, and efflorescence, and degradation of other building components.

d. Civil Code § 896(b)(1): Foundations, load-bearing walls, and slabs are experiencing vertical and horizontal displacement due to underlying soil

settlement and inadequate foundation support, resulting in damage to Garage walls, foundation walls, plumbing lines, sidewalks, and other component parts of the Property. The foundations of the Tower and Podium are experiencing settlement at a rate and depth well beyond the design parameters, resulting in actual or potential cracking of walls, pipes, joints, sidewalks, and other elements of the Property, water intrusion, and improper sewer pipe flows.

e. Civil Code § 896(b)(2): Foundations, load-bearing walls, and slabs contain significant vertical and horizontal displacement that has the potential to cause the Property to be structurally unsafe. The foundations of the Tower and Podium are experiencing settlement at a rate and depth well beyond the design parameters, resulting in differential settlement of the Tower and Podium structures.

f. Civil Code § 896(c)(1): Soils and engineered foundation walls are causing significant vertical and horizontal displacement of the Tower, Podium, and Garage structures due to underlying soil settlement and/or inadequate foundation support, resulting in damage to garage walls, foundation walls, plumbing lines, and other component parts. The soil underlying the Property is experiencing settlement at a rate and depth well beyond the design parameters, resulting in cracking and water intrusion in the walls and on the lower floor of the Garage, and spalling (or scaling) of the concrete therein. In the Garage there is water intrusion through subgrade walls and the lower-level garage floor surface, and cracking and spalling of subgrade walls. In the Tower there is water intrusion through subgrade walls.

g. Civil Code § 896(c)(3): Soil settlement under the Millennium Tower is causing the land to become potentially unusable for its common purpose.

h. Civil Code § 896(g)(2): Cracks and separations have developed in the exterior wall finishes. The exterior curtain wall is leaking.

i. Civil Code § 896(g)(3)(A): Manufactured window components have been

improperly manufactured and/or installed so as to interfere with their useful life. In particular, window stay arms do not operate properly and are failing.

j. Civil Code § 896(g)(6): There is unreasonable noise and odor transmission between units.

j. Civil Code § 896(g)(15): The foregoing deficiencies violate the standard that structures shall not be constructed in a manner that potentially impairs their occupants' safety.

k. Civil Code § 897: The foregoing deficiencies violate the standard that other deficiencies are actionable if they are the cause of damage.

A. Compliance with RORA

92. On or about August 12, 2016, the HOA provided notice to the Millennium Defendants and Webcor of the HOA's claim under California Civil Code section 6000 *et seq.* and sections 896 and 910 *et seq.* for damages arising out of, or related to, deficiencies in the development, design, specifications, planning, supervision, testing, observation of construction, and construction of the Property. The notice tolled all applicable statutes of limitation and repose, whether in contract, statute, or decisional law, by and against all potentially responsible parties, regardless of whether they were named in the notice, including claims for indemnity, consistent with California Civil Code section 6000, section 895 *et seq.*, and section 910 *et seq.* (and including Civil Code section 927). Since that date, the HOA, Millennium Defendants, Webcor, and certain others have been engaged in the dispute resolution process identified in the statutes above.

93. The HOA complied with all pre-litigation procedures required under the Right to Repair Action ("RORA"), California Civil Code sections 895 *et seq.*, with respect to all defendants who the HOA alleges are "builders" pursuant to RORA section 911, which includes all of the Millennium Defendants. The document providing notice was transmitted to counsel representing the Millennium Defendants and Webcor on or about August 12, 2016 and provided adequate notice (actual or constructive) of the HOA's claims under California Civil Code section 6000 *et seq.* and sections 896 and 910 *et seq.* to the Millennium Defendants and Webcor.

94. The HOA's compliance with the prelitigation requirements of RORA was effective as to all Millennium Defendants because:

a. The HOA provided actual notice to counsel for the Millennium Defendants and complied with all other RORA prelitigation requirements under California Civil Code section 6000 *et seq.* and sections 896 and 910 *et seq.*

b. Alternatively, the HOA substantially complied with all of the pre-litigation requirements of RORA for all of the Millennium Defendants. The HOA's notice and the subsequent prelitigation process provided all of the Millennium Defendants with an opportunity to repair the Millennium Tower, and did not prejudice the rights of any of the Millennium Defendants under RORA.

c. Alternatively, the HOA's compliance with all of the pre-litigation requirements of RORA was constructive as to the Millennium Defendants except MSD (for which compliance is undisputed) because MSD is the alter ego of each of MSH, MPM, MP LLC, and MPI and notice to the alter ego provided notice to the controlling entities.

d. Alternatively, the HOA's compliance with all of the pre-litigation requirements of RORA is deemed satisfied because the Millennium Defendants concealed the true identities of certain entities considered "builders" under RORA and led the HOA to believe that MSD was the only "builder" under RORA. At the time the pre-litigation notice was provided to counsel for all Millennium Defendants, the HOA was unaware of the true identities of all of the "builders" under RORA but still provided actual written notice to the attorneys representing all Millennium Defendants. Subsequently, in preparing to file this lawsuit, the HOA conducted further investigations and learned the true identities of parties that are also "builders" under RORA and named those entities in the

complaint.

e. Alternatively, requiring further notice or prelitigation procedures under RORA by the HOA would be futile and would not serve the object and purpose of RORA because MSH, MPM, MP LLC and MPI all contend that they do not meet the definition of "builders," who are the only entities entitled to the protections of the prelitigation procedures.

95. Alternatively, the HOA is released from the requirements of the prelitigation procedures of RORA as to MSH, MPM, MP LLC, and MPI pursuant to civil code section 911 of RORA because the name and address of the agent for notice for each of MSH, MPM, MP LLC, and MPI was not included in the original sales documentation or provided to the Secretary of State.

96. California civil code section 911(e) states: "[a] builder shall maintain the name and address of an agent for notice pursuant to this chapter with the Secretary of State or, alternatively, elect to use a third party for that notice if the builder has notified the homeowner in writing of the third party's name and address, to whom claims and requests for information under this section may be mailed. The name and address of the agent for notice or third party shall be included with the original sales documentation and shall be initialed and acknowledged by the purchaser and the builder's sales representative."

97. California civil code section 911(i) states: "[a]ny builder who fails to comply with any of these requirements within the time specified is not entitled to the protection of this chapter, and the homeowner is released from the requirements of this chapter and may proceed with the filing of an action, in which case the remaining chapters of this part shall continue to apply to the action."

98. At least because MSH, MPM, MP LLC, and MPI are "builders" under RORA who failed to comply with the requirements of section 911(e) "the [HOA] is released from the requirements of [the RORA pre-litigation procedures] and may proceed with the filing of an action . . ." under section 911(i).

VIII. CAUSES OF ACTION

FIRST CAUSE OF ACTION

Violation of California Civil Code § 895 *et seq.* Against the Millennium Defendants (all directly liable and, alternatively, secondarily liable based on theories described in §IV), Millennium Founders (all secondary liable based on theories described in §IV), Webcor (directly liable), Handel (directly liable), the Engineering Defendants (all directly liable except Langan, whose liability is based on being the successor to Treadwell & Rollo), and Does 1 Through 100, Inclusive

99. The HOA re-alleges and incorporates by reference Paragraphs 1 through 98 above as if fully set forth herein.

A. Direct Liability

100. Each of the five Millennium Defendants—MSD, MSH, MPM, MP LLC, and MPI, qualify as "builders" according to the definition provided in section 911(a) of RORA because each entity was in the business of selling residential units in the Tower to the public at the time of the sales of the Millennium Tower's units or, in the alternative, was in the business of building, developing, or constructing the residential units in the Millennium Tower for public purchase. For example, MSD was a builder because it sold certain of the Tower's residential units to the public. MPI was a builder because it was involved in the business of developing the Tower's residential units through its marketing efforts on the Millennium Partners website, its participation in the site selection process, its participation in the structural engineering process, and its participation in various other design and engineering efforts. MPM was a builder because it was in the business of developing the Tower's residential units through its efforts to sell various units in the Tower and its participation in the landscaping design process. MP LLC and MSH were builders because they were in the business of developing the Tower's residential units through their efforts to manage the activities of their agents, including the Millennium Founders, relating to the development of the Millennium Tower. MSH was also a builder because it participated in the selection of the finishes for the units in the Millennium Tower and managed the process of selling the Tower's units.

101. All of the Millennium Defendants, Webcor, Handel, and the Engineering Defendants were under a statutory obligation to design, develop, and/or construct the Millennium Tower in conformance with all applicable building codes and standards, including but not limited to California Civil Code section 895 *et seq.*

102. All of the Millennium Defendants failed to develop the Millennium Tower in conformance with the standard of California Civil Code section 895 *et seq.*, specifically the functionality standard set forth in California Civil Code sections 896 and 897.

103. Webcor, Handel, and the Engineering Defendants also failed to design and/or construct the Millennium Tower in conformance with the standard of California Civil Code section 895 *et seq.*, specifically the functionality standard set forth in California Civil Code sections 896 and 897.

104. Webcor, Handel and the Engineering Defendants caused, either in whole or in part, the failure to design, develop, and/or construct the Millennium Tower in conformance with the standards of Civil Code section 895 *et seq.*, as a result of their negligent acts and omissions, as described *infra*.

105. The HOA seeks damages for the reasonable value of repairing any violation of the standards found under California Civil Code section 895 *et seq.*; reasonable costs of repairing any damages caused by repair efforts; reasonable costs of repairing and rectifying any damages resulting from the failure of the Millennium Tower to meet the section 895 standards; reasonable costs of removing and replacing any improper repair; reasonable relocation and storage expenses; and reasonable investigative costs for each established violation of the section 895 standards.

B. Secondary Liability

106. Alternatively, the Millennium Defendants are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

107. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

108. Langan is secondarily liable for this cause of action pursuant to the theory

described in paragraph 41, *supra*.

109. The Millennium Defendants, the Millennium Founders Webcor, Handel, the Engineering Defendants, and Does 1 Through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by defendants' violations of Civil Code section 895 *et seq.*

SECOND CAUSE OF ACTION

Negligence Against the Millennium Defendants (all directly liable, all also alternatively indirectly liable based on secondary liability theories described in §IV), Millennium Founders (all indirectly liable based on secondary liability theories described in §IV), Webcor (directly liable), Handel (directly liable), the Engineering Defendants (all directly liable except Langan, whose liability is based on being the successor to Treadwell & Rollo), ARUP (directly liable), the Salesforce Tower Defendants (directly liable), and Does 1 Through 100, Inclusive

110. The HOA re-alleges and incorporates by reference Paragraphs 1 through 109 above as if fully set forth herein.

A. Direct Liability

111. Each of the Millennium Defendants were and are a developer who participated in the process of the design, engineering, manufacture, construction, and management of condominium units, buildings, improvements, and structures of the Millennium Tower and who performed labor, supplied materials, equipment, or services necessary for the building and construction of the Millennium Tower with the knowledge that the condominium units would be sold to, and used by, members of the public.

112. For example, MSD was a developer because it sold certain of the Tower's residential units to the public. MPI was a developer because of its marketing efforts on the Millennium Partners website, its participation in the site selection process, its participation in the structural engineering process, and its participation in various other design and engineering efforts. MPM was a developer because of its efforts to sell various units in the Tower and its participation in the landscaping design process. MP LLC and MSH were developers because of their efforts to manage the activities of their agents, including the Millennium Founders, relating

to the development of the Millennium Tower. MSH was also a developer because it participated in the selection of the finishes for the units in the Millennium Tower and managed the process of selling the Tower's units.

113. Each of the Webcor, Handel, and the Engineering Defendants were and are a contractor, general contractor, subcontractor, supplier, architect, engineer, or other person, entity, or professional who participated in the process of the design, engineering, manufacture, construction, and management of condominium units, buildings, improvements, and structures of the Millennium Tower and who performed labor, supplied materials, equipment, and/or services necessary for the building and construction of the Millennium Tower with the knowledge that the condominium units would be sold to, and used by, members of the public.

114. In so doing, the Millennium Defendants, Webcor, Handel, and the Engineering Defendants, caused the Millennium Tower to be designed, engineered, constructed, and/or managed through their own works of labor, their supplying of materials, equipment, and services, and through causing other contractors and subcontractors to perform works of labor to supply materials, equipment, and services in order to properly complete and manage the Millennium Tower and subject structures so that it could be sold to and used by members of the public.

115. Each of the Millennium Defendants, Webcor, Handel, and the Engineering Defendants negligently, carelessly, tortiously, and wrongfully failed to use reasonable care in the analysis, preparation, design, manufacture, construction, and/or management of the real property and structures of the Millennium Tower, thereby causing damages, including, among other things, excessive and differential settlement of the Tower and the Podium, and defects and deficiencies in the foundation, Garage, subterranean structure, curtain wall, exterior wall panels, skylights, common areas, plaza and terrace decks, unit interiors (including but not limited to excessive noise and odors moving between units), exterior doors, roofing, and utility connections.

116. For example, MSD failed to use reasonable care in selecting the inadequate foundation system, inadequate garage construction and waterproofing, defective windows, and

other structural systems leading to the curtain wall corrosion and water intrusion, inter-unit odor transmission, cracks, and alignment issues. In addition, each of MSH, MPM, MP LLC and MPI failed to use reasonable case in directing the activities of the Engineering Defendants.

117. Each of the Millennium Defendants, Webcor, Handel, and the Engineering Defendants knew or should have known that if the Millennium Tower was not properly or adequately designed, engineered, supervised, constructed, and/or managed, the owners and users would be substantially damaged thereby, and the condominium units, buildings, improvements, and structures would be defective.

118. Each of the Millennium Defendants, Webcor, Handel, and the Engineering Defendants were under a duty to exercise ordinary care to avoid reasonably foreseeable injury to users and purchasers of the condominium units, buildings, improvements, and structures, and knew or should have foreseen with reasonable certainty that purchasers and/or users would suffer damages if the Millennium Defendants, Webcor, Handel, and the Engineering Defendants failed to perform their duty to cause the Property and the structures of the Millennium Tower to be designed, engineered, constructed, and managed in a proper workmanlike manner and fashion.

119. Each of the Millennium Defendants, Webcor, Handel, and the Engineering Defendants breached their duty to exercise ordinary care. The Millennium Defendants, Webcor, Handel, and the Engineering Defendants failed and neglected to perform their work, labor, and services properly or adequately. The Millennium Defendants, Webcor, Handel, and the Engineering Defendants so negligently performed their work, labor, and/or services such that the premises and structures of the Millennium Tower were designed, engineered, constructed, and/or managed improperly, negligently, carelessly, and/or not in a workmanlike manner.

120. Defendant Arup was hired by the TJPA's architect to provide geotechnical engineering services relating to the lateral support for the Millennium Tower made necessary by the excavation for the Transit Center. Arup performed work, labor, and/or services for the soils evaluation, support wall, and buttress pile wall between the Transit Center and the Millennium Tower for the purpose of providing lateral and subjacent support to the Millennium Tower to limit any sinking caused by the construction of the Transit Center.

121. Arup was under a duty to exercise ordinary care as engineer, subcontractor, manager, or otherwise to avoid reasonably foreseeable injury to users and purchasers of the condominium units, buildings, improvements, and structures of and in the Millennium Tower. Arup knew or should have foreseen with reasonable certainty that the HOA and its members would suffer damages if the soils evaluation, support wall, and buttress pile wall were not properly or adequately designed, engineered, supervised, and/or constructed.

122. Arup breached its duty to exercise ordinary care. On information and belief, the HOA alleges that Arup negligently, carelessly, tortiously, and wrongfully failed to use reasonable care in the analysis, preparation, design, manufacture, and/or construction of the soils evaluation, lateral support, and/or buttress pile wall, thereby causing damage to the Millennium Tower, including, among other things, excessive and differential settlement of the Tower and Podium, and defects and deficiencies in the Garage.

123. The Salesforce Tower Defendants were and are the developers, builders, sellers, managers or other entities primarily responsible for the construction of the Salesforce Tower and who performed labor and supplied materials, equipment, and/or services necessary for the construction of the Salesforce Tower. In so doing, the Salesforce Tower Defendants, in their capacity as developers, builder, sellers, managers, or otherwise, caused the Salesforce Tower to be designed, engineered, constructed, and/or managed through their own works of labor, their supplying of materials, equipment, and services, and through causing other contractors and subcontractors to perform works of labor to supply materials, equipment, and services in order to construct and manage the Salesforce Tower.

124. The Salesforce Tower Defendants were and are under a duty to exercise ordinary care or otherwise to avoid reasonably foreseeable injury to the HOA and its members. The Salesforce Tower Defendants knew or should have foreseen with reasonable certainty that the HOA and its members would suffer damages if the Salesforce Tower was not properly or adequately designed, engineered, supervised, and/or constructed.

125. The Salesforce Tower Defendants breached their duty to exercise ordinary care. On information and belief, the HOA alleges that the Salesforce Tower Defendants negligently,

carelessly, tortiously, and wrongfully failed to use reasonable care in the analysis, preparation, design, and/or construction of the Salesforce Tower, thereby causing damage to the Millennium Tower, including, among other things, excessive and differential settlement of the Tower and Podium, and defects and deficiencies in the Garage. In particular, the TJPA and the Salesforce Tower defendants acted with conscious disregard of the foreseeable risk of harm that the excavation and dewatering work at the Transit Center and the Salesforce Tower might cause injury to the Millennium Tower by failing to take adequate protective measures to secure, monitor, or otherwise mitigate effects to the Millennium Tower prior to and during the excavation and dewatering work at the Transit Center and the Salesforce Tower.

126. As a direct and proximate result of these breaches, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

B. Secondary Liability

127. Alternatively, the Millennium Defendants are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

128. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

129. Langan is secondarily liable for this cause of action pursuant to the theory described in paragraph 41, *supra*.

130. The Millennium Defendants, the Millennium Founders, Webcor, Handel, the Engineering Defendants, ARUP, the Salesforce Tower Defendants, and Does 1 Through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by defendants' negligence.

THIRD CAUSE OF ACTION

Breach of Express Warranties Against MSD (directly liable), Millennium Defendants (all except MSD secondarily liable based on theories described in §IV), Millennium Founders (all secondary liable based on theories described in §IV), and Does 1 Through 100, Inclusive

131. The HOA re-alleges and incorporates by reference Paragraphs 1 through 130

above as if fully set forth herein.

A. Direct Liability

132. Pursuant to California Civil Code section 5980, the HOA has standing to institute litigation "in its own name as the real party in interest and without joining with it the members, in matters pertaining to the following: . . . (b) Damage to the common area. (c) Damage to a separate interest that the association is obligated to maintain or repair [or] (d) Damage to a separate interest that arises out of, or is integrally related to, damage to the common area or a separate interest that the association is obligated to maintain or repair."

133. As a result of California Civil code section 5980, the HOA can bring a cause of action based on a breach of an express warranty provided to a homeowner that relates to damage to the common area of the Millennium Tower, a separate interest of a homeowner that the HOA is obligated to maintain or repair, or a separate interest of a homeowner that arises out of, or is integrally related to, damage to the common area or a separate interest that the association is obligated to maintain or repair. *See Windham at Carmel Mountain Ranch Assn. v. Superior Court*, 109 Cal. App. 4th 1162, 1175 (2003) ("the legislative intent of section [5980] is to give associations the standing to sue as real parties in interest in all types of actions for damage to common areas").

134. Accordingly, the HOA brings this cause of action based on express warranties made by the seller of the Tower's units (MSD) to the buyer of the Tower's units (homeowners) on which the homeowners reasonably relied and which MSD breached. These warranties related to the conditions of the common areas, separate interests that the HOA is obligated to maintain or repair, and separate interest that arises out of, or is integrally related to, damage to the common area or a separate interest that the HOA is obligated to maintain or repair.

135. MSD was a seller of various units in the Millennium Tower to individual homeowners, who are members of the HOA.

136. MSD expressly warranted to homeowners of units in the Millennium Tower through sales and advertising materials and through sales representatives for the Property that the Millennium Tower was designed and constructed in a commercially reasonable and habitable

manner when offering the units of the Millennium Tower for sale to the general public for use as residences. For instance, the Millennium Tower San Francisco Sales Manual states, "With its superior design, highest quality, thoughtful service, and extraordinary amenities, we believe Millennium Tower will be the best residential tower ever built in San Francisco." Sales representatives of MSD provided prospective homeowners with sales materials containing representations about the superior and luxury quality of the building.

137. The sales representatives who used this sales manual in inducing purchases of the Tower' units were acting on behalf of MSD when doing so, and were acting within the scope of their employment and/or agency relationship with MSD when doing so.

138. These express warranties were made when MSD knew that the building was settling excessively and differentially.

139. Homeowners relied on the express warranties of MSD discussed in paragraph 136 *supra* when they purchased condominium units within the Millennium Tower from MSD, believing at the time of sale that a luxury building would, at a minimum, possess a foundation that was not massively defective.

140. The massively defective foundation as well as the other defects described in section VII *supra* fall with the definition of "(b) Damage to the common area. (c) Damage to a separate interest that the association is obligated to maintain or repair. [or] (d) Damage to a separate interest that arises out of, or is integrally related to, damage to the common area or a separate interest that the association is obligated to maintain or repair." Cal. Civ. Code § 5980.

141. MSD breached these express warranties by selling the condominium units in the Millennium Tower with the above-described deficiencies in the design, specification, planning, supervision, development, improvement, and repair thereof.

142. As a direct and proximate result of the breach of express warranties by MSD the HOA and its members suffered damages stemming from the excessive and differential settlement of the Tower and Podium structures, and defects and deficiencies in the foundation, Garage, subterranean structure, curtain wall, exterior wall panels, skylights, common areas, plaza and terrace decks, unit interiors (including but not limited to noise and odors moving between units),

exterior doors, roofing, and utility connections as set forth herein.

B. Secondary Liability

143. The Millennium Defendants other than MSD are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

144. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

145. MSD, the remaining Millennium Defendants, the Millennium Founders, and Does 1 through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by defendants' breach of express warranty.

FOURTH CAUSE OF ACTION

Breach of Implied Warranties Against MSD (directly liable), Millennium Defendants (all except MSD secondarily liable based on theories described in §IV), Millennium Founders (all secondarily liable based on theories described in §IV), Webcor (directly liable), and Does 1 Through 100, Inclusive

146. The HOA re-alleges and incorporates by reference Paragraphs 1 through 145 above as if fully set forth herein.

A. Direct Liability

147. Pursuant to California Civil Code section 5980, the HOA has standing to institute litigation "in its own name as the real party in interest and without joining with it the members, in matters pertaining to the following: . . . (b) Damage to the common area. (c) Damage to a separate interest that the association is obligated to maintain or repair [or] (d) Damage to a separate interest that arises out of, or is integrally related to, damage to the common area or a separate interest that the association is obligated to maintain or repair."

148. As a result of California Civil code section 5980, the HOA can bring a cause of action for breach of an implied warranty provided to a homeowner that relates to damage to the common area of the Millennium Tower, a separate interest of a homeowner that the HOA is obligation to maintain or repair, or a separate interest of a homeowner that arises out of, or is integrally related to, damage to the common area or a separate interest that the association is

obligated to maintain or repair. *See Windham at Carmel Mountain Ranch Assn. v. Superior Court*, 109 Cal. App. 4th 1162, 1175 (2003) ("the legislative intent of section [5980] is to give associations the standing to sue as real parties in interest in all types of actions for damage to common areas").

149. Accordingly, the HOA brings this cause of action based on implied warranties made by the seller of the Tower's units (MSD) and the (Webcor). These warranties related to the conditions of the common areas, separate interests that the HOA is obligated to maintain or repair, and separate interest that arises out of, or is integrally related to, damage to the common area or a separate interest that the HOA is obligated to maintain or repair.

150. MSD was the seller of various units in the Millennium Tower to individual homeowners, who are members of the HOA.

151. MSD provided prospective buyers with a written statement disclaiming any knowledge of any substantial defects as required by California Civil Code § 1134(b). This "Property Disclosure and Information Statement," dated May 2011, failed to disclose that the building was experiencing excessive vertical and differential settlement. This disclosure constituted an implied warranty that no substantial defects existed in the common areas, the separate interests the HOA is obligated to maintain and repair, or the separate interests that are integrally related to the common areas and separate interests.

152. In addition, Webcor impliedly warranted that the Millennium Tower was designed and constructed in a commercially reasonable and workmanlike manner and consistent with the standards set forth in California civil code sections 895 through 897.

153. MSD impliedly warranted that the Millennium Tower was designed and constructed in a commercially reasonable and workmanlike manner when MSD offered the condominium units of the Millennium Tower for sale to the general public and delegated the duty of maintenance and repair to the HOA.

154. The Millennium Tower was not of proper durability, reliability, and/or general quality and not fit for its intended use.

155. As a direct and proximate result of MSD's and Webcor's breaches, the HOA has

suffered and will continue to suffer damages in an amount to be proved at trial.

156. Individual homeowners relied on the implied warranties of MSD and Webcor when they purchased condominium units within the Millennium Tower from MSD.

157. The massively defective foundation as well as the other defects described in section VII supra fall with the definition of "(b) Damage to the common area. (c) Damage to a separate interest that the association is obligated to maintain or repair. [or] (d) Damage to a separate interest that arises out of, or is integrally related to, damage to the common area or a separate interest that the association is obligated to maintain or repair." Cal. Civ. Code § 5980.

B. Secondary Liability

158. The Millennium Defendants other than MSD are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

159. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

160. MSD, the remaining Millennium Defendants, the Millennium Founders, Webcor, and Does 1 through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by defendants' breach of implied warranty.

FIFTH CAUSE OF ACTION

Strict Liability Against the Millennium Defendants (all directly liable, all also secondarily liable based on theories described in §IV), Millennium Founders (all secondarily liable based on theories described in §IV), and Does 1 Through 100, Inclusive

161. The HOA re-alleges and incorporates by reference Paragraphs 1 through 160 above as if fully set forth herein.

A. Direct Liability

162. All of the Millennium Defendants are, and at all times relevant were, engaged in the mass production of condominiums for sale and use by members of the general public.

163. For example, MSD was involved in the production of the Tower's units because it sold certain of the Tower's residential units to the public. MPI was involved in the production of the Tower's units because it developed the Tower's residential units through its marketing efforts

on the Millennium Partners website, participated in the site selection process, participated in the structural engineering process, and participated in various other design and engineering efforts. MPM was involved in the production of the Tower's units because it sold various units in the Tower and its participated in the landscaping design process. MP LLC and MSH were involved in the production of the Tower's units because they managed the activities of their agents, including the Millennium Founders, relating to the development of the Millennium Tower. MSH was also involved in the selection of the finishes for the units in the Millennium Tower and managed the process of selling the Tower's units.

164. In or about 2005–2013, all of the Millennium Defendants participated in the design, development, construction, marketing, and sale of condominium units, buildings, structures, and improvements for the Millennium Tower. In doing so, all of the Millennium Defendants developed the Millennium Tower with individual units for use as residential dwellings.

165. In these capacities, all of the Millennium Defendants knew that the condominium units, buildings, and structures would be sold to, and used by, members of the general public for the purpose of residences. All of the Millennium Defendants knew, or reasonably should have known, that the persons who would purchase the condominium units would do so without inspection for the defects set forth herein.

166. All of the Millennium Defendants impliedly warranted that the real property and structures in the Millennium Tower, including, among other things, the foundation, Garage, subterranean structure, curtain wall, exterior wall panels, skylights, common areas, plaza and terrace decks, unit interiors, exterior doors, roofing, and utility connections, were of merchantable quality and were erected in a reasonable workmanlike manner.

167. All of the Millennium Defendants are strictly liable and responsible to the HOA for all damages suffered as a result of the defects and deficiencies at the Millennium Tower, including, among other things, excessive and differential settlement of the Tower and Podium, and defects and deficiencies in the foundation, Garage, subterranean structure, curtain wall, exterior wall panels, skylights, common areas, plaza and terrace decks, unit interiors (including

but not limited to excessive odor transfers between units), exterior doors, roofing, and utility connections.

168. Within the past year, the HOA discovered that the underlying soils and component structures of the Millennium Tower are, and have been, experiencing defective conditions, including, among other things, excessive and differential settlement of the Tower and the Podium, and defects and deficiencies in the foundation, Garage, subterranean structure, curtain wall, exterior wall panels, skylights, common areas, plaza and terrace decks, unit interiors (including but not limited to odors moving between units), exterior doors, roofing, and utility connections. Such defective components are not of merchantable quality, nor were they designed, erected, constructed, or installed in a workmanlike manner, but instead are defective and, as now known, demonstrate improper, nonexistent, and/or inadequate design, construction, manufacture and/or installation. The structures may be additionally defective in ways and to an extent not precisely known, but will be established at the time of trial according to proof.

169. The HOA properly notified all of the Millennium Defendants of the defective conditions of the Millennium Tower. Notwithstanding such notice, all of the Millennium Defendants have failed to acknowledge responsibility for all of the defective conditions or otherwise cause the appropriate restoration and/or repair to be made at their cost and expense.

170. The items generally referred to and particularly described herein were latent deficiencies in that the above-described defects arose out of, were attributable to, and are directly and proximately caused by the above-described latent deficiencies in the design, specifications, planning, supervision, construction, observation of construction, development, and improvement of the Millennium Tower. Before the HOA discovered them, such defects and deficiencies could not have been discovered by the exercise of reasonable diligence.

171. At all times relevant, the HOA relied on the skill of each of the Millennium Defendants to produce condominiums that are reasonably fit for their intended purpose.

172. The HOA is still not fully aware of all the causes, the full extent, and possible legal significance of the results or causes of the conditions described above due to the loss being continual and latent. The HOA is an organization of lay individuals who require expert

consultation to provide a review of the property conditions. The HOA is still not informed of any causes or entire results of the full extent of these latent deficiencies, nor is the HOA fully informed of the potential causes of the resultant distress due to the loss being continual and latent.

173. Any and all repair attempts by any of the Millennium Defendants failed to adequately correct the damages and deficiencies in the Millennium Tower thereby resulting in further property damage.

174. Instead of causing the necessary and required construction and repair of the Millennium Tower, all of the Millennium Defendants caused cosmetic, temporary, or ineffective repairs to be made to various portions of the Millennium Tower for the purpose of leading the HOA and its members to believe that the Millennium Defendants were resolving and correcting all deficiencies. By virtue of such conduct, each of the Millennium Defendants are estopped to assert that the HOA may not seek the damages herein sought.

175. The above-described defects arose out of, were attributed to, and are directly and proximately caused by the above-described deficiencies in the design, specification, planning, supervision, development, and improvement of the Millennium Tower and faulty repairs thereto, and before such defects were discovered by the HOA, they could not have been discovered by the exercise of reasonable diligence. As a direct and proximate result of the conduct herein alleged, the HOA has suffered damages in an amount to be proven at the time of trial.

B. Secondary Liability

176. Alternatively, the Millennium Defendants are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

177. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

178. The Millennium Defendants, the Millennium Founders, and Does 1 through 100, Inclusive are all jointly and severally liable for the HOA's damages for which defendants are strictly liable.

SIXTH CAUSE OF ACTION

Negligent Misrepresentation Sean Jeffries (directly liable); Millennium Defendants (all secondarily liable based on agency, respondeat superior, or secondary liability theories described in §IV); and Millennium Founders (all secondarily liable based on theories described in §IV), and Does 1 Through 100, Inclusive

179. The HOA re-alleges and incorporates by reference Paragraphs 1 through 178 above as if fully set forth herein.

A. Direct Liability

180. Sean Jeffries represented on February 28, 2014 to the HOA that he was not "aware to date of any information that gives us concern for the safety of the building or any significant impact on the structure."[48] This representation was demonstrably false, which Sean Jeffries knew at the time he made it, as the Tower had already exceeded the revised upper limit of the total expected lifetime settlement.

181. At the time, Sean Jeffries did not have any reasonable ground for believing his February 28, 2014 representation was true. As Sean Jeffries was aware, the Tower was originally predicted to sink no more than 4 to 6 inches over its lifetime, and that the predicted lifetime settlement of the Tower was later revised to 10.3 to 12.3 inches. At the time of his representation on February 28, 2014, Sean Jeffries also knew that the Tower had already exceeded its revised predicted lifetime settlement. Sean Jeffries also knew that the TJPA's construction activities would likely cause further differential settlement.

182. Sean Jeffries also made periodic presentations to the HOA at the executive session board meetings where he repeatedly assured the HOA that Millennium Partners was monitoring the building, was not aware of any concerns regarding building settlement, and that any settlement was within normal limits. Sean Jeffries made these misrepresentations orally to the members of the HOA's executive committee at certain executive board meeting sessions between January 2014 and January 2016. These meetings took place on or around January 2014, May

[48] Letter from Sean Jeffries to Jeff Peters re Millennium Tower (Feb. 28, 2016).

2014, October 6, 2014, November 2014, January 26, 2015, February 23, 2015, and October 19, 2015, January 14, 2016 in various conference rooms in the Millennium Tower. Sean Jeffries also did not have any reasonable ground for believing these representations were accurate when he made them because he knew that the Tower had already exceeded its revised predicted lifetime settlement, the settlement amount was not normal and was instead abnormal, and that the TJPA's construction activities would likely cause further differential settlement.

183. In a further misrepresentation to the HOA, Sean Jeffries signed the Amended Easement Amendment with the TJPA, purporting to represent the HOA but without the authority to do so, which resulted in his, not the HOA's, receiving monitoring reports from the TJPA. At the time, Sean Jeffries did not have any reasonable ground for believing he was authorized to sign the Amended Easement Agreement with the TJPA on behalf of the HOA without the HOA's authority to do so. After Sean Jeffries misrepresented that he was authorized to sign the Amended Easement Amendment with the TJPA on behalf of the HOA, Sean Jeffries or an employee and/or agent of one or more of the Millennium Defendants, and not the HOA, began receiving monitoring data collected by the TJPA, which further revealed that the Tower was settling vertically and differentially in excess of the design specifications, including the revised expected maximum settlement. Sean Jeffries did not disclose this data to the HOA, but instead concealed it.

184. Sean Jeffries intended that the HOA would rely on these representations by failing to take action to correct the defects and damage to the Millennium Tower of which it was not aware.

185. The HOA reasonably relied on Sean Jeffries' representations because the HOA reasonably believed that Sean Jeffries would fulfill his duty of disclosure.

186. In reliance on Sean Jeffries' representations, the HOA did not take corrective action to prevent continuing and future damage.

187. The HOA's reliance on Sean Jeffries' representations was a substantial factor in causing damages to the HOA, including by diminishing the value of the common areas of Millennium Tower and by delaying any corrective action that could reduce the extent of damage.

188. Because Sean Jeffries withheld information from the HOA, Sean Jeffries necessarily possess full information concerning the facts of their own negligent acts.

189. As a direct and proximate result of Sean Jeffries' negligent conduct, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

B. Secondary Liability

190. When making these negligent misrepresentations, Sean Jeffries was acting on behalf of MSD, for which he is an agent. Sean Jeffries was acting as the agent of MSD and made the above misrepresentations in the scope of his authority as an agent of MSD.

191. In the alternative, Sean Jeffries was acting on behalf of MSH, for which he is the Vice President. Sean Jeffries was acting as the agent and/or employee of MSH and made these misrepresentations in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

192. In the alternative, Sean Jeffries was acting on behalf of MPM, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

193. In the alternative, Sean Jeffries was acting on behalf of MP LLC, for which he is an agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

194. In the alternative, Sean Jeffries was acting on behalf of MPI, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

195. Alternatively, the Millennium Defendants are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

196. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

197. Sean Jeffries, the Millennium Defendants, the Millennium Founders, and Does 1 through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by their negligent misrepresentation.

SEVENTH CAUSE OF ACTION

Fraudulent Misrepresentation Against Sean Jeffries (directly liable); Millennium Defendants (all indirectly liable based on agency, respondeat superior or secondary liability theories described in §IV); and Millennium Founders (all secondarily liable based on liability theories described in §IV), and Does 1 Through 100, Inclusive

198. The HOA re-alleges and incorporates by reference Paragraphs 1 through 197 above as if fully set forth herein.

A. Direct Liability

199. Sean Jeffries represented on February 28, 2014 to the HOA that he was were not "aware to date of any information that gives us concern for the safety of the building or any significant impact on the structure."[49] This representation was demonstrably false, which Sean Jeffries knew at the time he made it, as Sean Jeffries knew that the Tower had already exceeded the revised upper limit of the total expected lifetime settlement.

200. At the time, Sean Jeffries knew that the Tower was originally predicted to sink no more than 4 to 6 inches over its lifetime, and that the predicted lifetime settlement of the Tower was later revised to 10.3 to 12.3 inches. At the time of the representation on February 28, 2014, Sean Jeffries knew that the Tower had already exceeded its revised predicted lifetime settlement. Sean Jeffries also knew that the TJPA's construction activities would likely cause further differential settlement.

201. On information and belief, Sean Jeffries also made periodic presentations to the HOA at the executive session board meetings where he repeatedly assured the HOA that Millennium Partners was monitoring the building, was not aware of any concerns regarding building settlement, and that any settlement was within normal limits. These misrepresentations

[49] Letter from Sean Jeffries to Jeff Peters re Millennium Tower (Feb. 28, 2016).

were made orally by Sean Jeffries to the members of the HOA's executive committee at certain executive board meeting sessions between January 2014 and January 2016. These meetings took place on or around January 2014, May 2014, October 6, 2014, November 2014, January 26, 2015, February 23, 2015, and October 19, 2015, January 14, 2016 in various conference rooms in the Millennium Tower. Sean Jeffries knew these representations were not accurate when he made them because he knew that the Tower had already exceeded its revised predicted lifetime settlement, the settlement amount was not normal and was instead abnormal, and that the TJPA's construction activities would likely cause further differential settlement.

202. In a further misrepresentation to the HOA, Sean Jeffries signed the Amended Easement Amendment with the TJPA, purporting to represent the HOA but without the authority to do so, which resulted in his, not the HOA's, receiving monitoring reports from the TJPA. After Sean Jeffries misrepresented that he was authorized to sign the Amended Easement Amendment with the TJPA on behalf of the HOA, Sean Jeffries or another employee or agent of one of the Millennium Defendants, and not the HOA, began receiving monitoring data collected by the TJPA, which further revealed that the Tower was settling vertically and differentially in excess of the design specifications, including the revised expected maximum settlement. Sean Jeffries did not disclose this data to the HOA, but instead concealed it.

203. Sean Jeffries intended that the HOA would rely on this representation by failing to take action to correct the defects and damage to the Millennium Tower of which it was not aware.

204. The HOA reasonably relied on Sean Jeffries' representations because the HOA reasonably believed that Sean Jeffries would fulfill his duty of disclosure.

205. In reliance on Sean Jeffries' representations, the HOA did not take corrective action to prevent continuing and future damage.

206. The HOA's reliance on Sean Jeffries' representations caused damages to the HOA, including by diminishing the value of the common areas of Millennium Tower and by delaying any corrective action that could reduce the extent of damage.

207. Because Sean Jeffries intentionally withheld information from the HOA, Sean

Jeffries necessarily possesses full information concerning the facts of his own fraudulent acts.

208. As a direct and proximate result of Sean Jeffries' fraudulent conduct, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

209. Because Sean Jeffries' conduct was malicious, oppressive, and fraudulent, and taken in knowing disregard of his legal duties, punitive damages should be awarded. Sean Jeffries knew that the construction and design of the Millennium Tower was deficient and that the Millennium Tower was suffering from vertical and differential settlement, and consciously and recklessly disregarded the probability of injury to residents of Millennium Tower units and to the common areas of the Millennium Tower by developing and marketing the Millennium Tower despite knowing that construction methods and design plans were deficient, and by continuing to market the units after receiving information that the building was sinking and tilting.

B. Secondary Liability

210. When making these fraudulent misrepresentations, Sean Jeffries was acting on behalf of MSD, for which he is an agent. Sean Jeffries was acting as the agent of MSD and his conduct was in the scope of his authority as an agent of MSD.

211. In the alternative, Sean Jeffries was acting on behalf of MSH, for which he is the Vice President. Sean Jeffries was acting as the agent and/or employee of MSH and his conduct was in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

212. In the alternative, Sean Jeffries was acting on behalf of MPM, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

213. In the alternative, Sean Jeffries was acting on behalf of MP LLC, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

214. In the alternative, Sean Jeffries was acting on behalf of MPI, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

215. Alternatively, the Millennium Defendants are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

216. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

217. Sean Jeffries, the Millennium Defendants, the Millennium Founders, and Does 1 through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by their fraudulent misrepresentation.

EIGHTH CAUSE OF ACTION

Fraudulent Concealment Against Sean Jeffries and Luciano (directly liable); Millennium Defendants (all secondarily liable based on agency, respondeat superior, or secondary liability theories described in §IV); and Millennium Founders (all secondarily liable based on theories described in §IV), and Does 1 Through 100, Inclusive

218. The HOA re-alleges and incorporates by reference Paragraphs 1 through 217 above as if fully set forth herein.

A. Direct Liability

219. As designated contact for receipt of monitoring data from the TJPA, Sean Jeffries owed a fiduciary duty to the HOA, its board, and its members, who relied on Sean Jeffries to provide documentation and information regarding the condition of the Millennium Tower and to direct certain remediation measures.

220. As a member of the HOA Board, Luciano owed a fiduciary duty to the HOA and its members. In making certain partial disclosures to the HOA and its members, Luciano and Sean Jeffries also had a duty of full and accurate disclosure to the HOA and its members. Finally, as the persons and entities with exclusive knowledge of material information about the condition of the Millennium Tower not available to the HOA, including the Tower's excessive

vertical and differential settlement, Sean Jeffries, and Luciano owed a duty of disclosure to the HOA and its members.

221. On information and belief, the HOA alleges that despite owing a duty of disclosure to the HOA, Sean Jeffries and Luciano intentionally failed to disclose certain facts regarding the excessive vertical and differential settlement of the Millennium Tower and instead actively concealed those facts for as long as possible.

222. Sean Jeffries, and Luciano knew that the Tower was originally predicted to sink no more than 4 to 6 inches over its lifetime. Sean Jeffries, and Luciano also knew that the predicted lifetime settlement of the Tower was later revised to 10.3 to 12.3 inches.

223. On information and belief, Sean Jeffries and Luciano received monitoring data on the settlement building continuously over a period of years, starting as early as 2010. Arup has prepared at least 58 memoranda to the TJPA providing updates on settlement monitoring through 2016. On information and belief, this same settlement data was sent by TJPA to Sean Jeffries and Luciano, who in turn transmitted the settlement data to DeSimone for evaluation. DeSimone then prepared its own analysis of the Arup data, summarized in numerous memoranda that were addressed to Steven Hood of Millennium Partners.[50]

224. The DeSimone memoranda, based upon the Arup monitoring data and produced directly to Sean Jeffries and Luciano, unequivocally show excessive vertical and differential settlement of the Millennium Tower. For example, a DeSimone Memorandum dated December 14, 2012, demonstrates the Tower had already sunk over 11 inches.

225. Yet the HOA was not made aware of the true nature of the wrongful conduct and the full extent to which the Tower was experiencing excessive vertical and differential settlement until 2016. Sean Jeffries, and Luciano failed to disclose to the HOA before 2016 that the Tower had exceeded the original predicted lifetime settlement range of 4 to 6 inches as of January 2009,

[50] *See, e.g.*, Memorandum from Nicolas Rodrigues to Steven Hood (Millennium Partners) re: 301 Mission Street - Settlement Monitoring (review of most recent settlement data provided by Millennium Partners to DeSimone) (Dec. 13, 2013); Email from Brian Dykes (TJPA) to Steven Hood Re: Instrument Monitoring (attaching June 28, 2013 Arup Memorandum Re: Manually Read Inclinometer Update) (July 16, 2013).

and Sean Jeffries and Luciano also failed to disclose to the HOA before 2016 that the Tower had already exceeded the revised predicted maximum lifetime settlement of 12.3 inches.

226. As of the signing of the First Amendment to the Easement Amendment, Sean Jeffries, and Luciano also knew that the TJPA's construction activities at the site of the Transit Center would likely cause additional vertical and differential settlement of the Tower and the Podium, and potentially other damages. As of early 2014, Sean Jeffries, and Luciano also knew that the TJPA's construction activities at the site of the Transit Center had already caused vertical and differential settlement of the Tower and the Podium, damage to the Garage, water intrusion, and other damages.

227. On information and belief, the HOA alleges that Sean Jeffries and others, including representatives of the TJPA, signed a confidentiality agreement on March 17, 2010 to conceal from the HOA and others the extent of the settlement and that the TJPA's construction activities at the site of the Transit Center, adjacent to the Millennium Tower, would likely cause additional vertical and differential settlement of the Tower and the Podium.

228. On information and belief, the HOA alleges that Sean Jeffries, in a further attempt to conceal from the HOA for as long as possible that the Tower was settling vertically and differentially in excess of the design specifications, signed the Amended Easement Amendment with the TJPA. Because Sean Jeffries signed the Amended Easement Amendment with the TJPA, Sean Jeffries or other employees of the Millennium Defendants, and not the HOA, began receiving monitoring data collected by the TJPA, which further revealed that the Tower was settling vertically and differentially in excess of the design specifications, including the revised expected maximum settlement. Sean Jeffries did not disclose this data to the HOA, but instead concealed it.

229. Sean Jeffries knew that the Millennium Tower was settling differentially at least by March 15, 2010, if not earlier, when Sean Jeffries and others employees of Millennium Defendants received monitoring data from Arup that discussed differential settlement. Despite knowing of the differential settlement and the detrimental impact of the TJPA's activities on the Millennium Tower, Sean Jeffries and Luciano failed to disclose to the HOA the full extent of the

wrongful conduct and its effects before 2016, including that the TJPA's construction activities at the site of the Transit Center had contributed to the excessive vertical and differential settlement of the Tower and the Podium far in excess of the design specifications, damage to the Garage, water intrusion, and other damages.

230. In his capacity as an executive for the Millennium Defendants, Luciano knew of the vertical and differential settlement of the Tower and Podium and other ongoing damages to the Property resulting from the design and construction defects and the TJPA's activities. Luciano, a Vice President at MPM and a member of the HOA's Board from approximately 2009 through 2016, wrongfully failed to disclose to the HOA and its members all material facts regarding the Tower and instead actively concealed them, in violation of his duty of disclosure to the HOA.

231. Sean Jeffries further represented on February 28, 2014 to the HOA that he was not "aware to date of any information that gives us concern for the safety of the building or any significant impact on the structure." This representation was demonstrably false, which Sean Jeffries knew at the time he made it, as Sean Jeffries knew that the Tower had already exceeded the revised upper limit of the total expected lifetime settlement. In a December 13, 2013 Memorandum to Millennium Partners, DeSimone observed that the total measured settlement was "now officially outside the maximum predicted value provided by Treadwell and Rollo (Langan)."

232. In failing to disclose these material facts while instead making misleading statements and only partially disclosing the true state of the Tower, Sean Jeffries, and Luciano intended to deceive the HOA, knowing that the HOA could not and would not take corrective action to address problems of which the HOA was not aware.

233. In reliance on Sean Jeffries and Luciano's misrepresentations and failures to disclose, the HOA did not take early corrective action to prevent future damage.

234. The HOA's reliance on the fraudulent concealment of Sean Jeffries, and Luciano caused damages to the HOA, including by diminishing the value of the common areas of the Millennium Tower.

235. Because Sean Jeffries, and Luciano intentionally withheld information from the HOA, Sean Jeffries, and Luciano necessarily possess full information concerning the facts of their own fraudulent acts.

236. As a direct and proximate result of the fraudulent conduct of Sean Jeffries, and Luciano, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

237. Because the conduct of Sean Jeffries and Luciano was malicious, oppressive, and fraudulent, and taken in knowing disregard of their legal duties, punitive damages should be awarded. Sean Jeffries and Luciano knew that the construction and design of the Millennium Tower was deficient and that the Millennium Tower was suffering from excessive vertical and differential settlement, and consciously and recklessly disregarded the probability of injury to residents of Millennium Tower units and to the common areas of the Millennium Tower by developing and marketing the Millennium Tower despite knowing that its construction methods and design plans were deficient, and by continuing to market the units after they received information that the building was sinking and tilting.

B. Secondary Liability

238. In engaging in these acts of fraudulent concealment, Sean Jeffries was acting on behalf of MSD, for which he is an agent. Sean Jeffries was acting as the agent of MSD and made the above misrepresentations in the scope of his authority as an agent of MSD.

239. In the alternative, Sean Jeffries was acting on behalf of MSH, for which he is the Vice President. Sean Jeffries was acting as the agent and/or employee of MSH and made these misrepresentations in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

240. In the alternative, Sean Jeffries was acting on behalf of MPM, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

241. In the alternative, Sean Jeffries was acting on behalf of MP LLC, for which he is

an agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

242. In the alternative, Sean Jeffries was acting on behalf of MPI, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

243. In engaging in these acts of fraudulent concealment, Luciano was acting on behalf of MSD, for which he is an agent and/or principal. Luciano was acting as the agent and/or employee of MSD and his conduct was in the scope of his authority as an agent of MSD and/or within the scope of this employment as an employee of MSD.

244. In the alternative, Luciano was acting on behalf of MSH, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MSH and his conduct was in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

245. In the alternative, Luciano was acting on behalf of MPM, for which he is the Tower's Property Manager. Luciano was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

246. In the alternative, Luciano was acting on behalf of MP LLC, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

247. In the alternative, Luciano was acting on behalf of MPI, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

248. Alternatively, the Millennium Defendants are secondarily liable for this cause of

action pursuant to the theories described in §IV *supra*.

249. The Millennium Founders are secondarily liable for this cause of action pursuant to the theories described in §IV *supra*.

250. Sean Jeffries, Luciano, the Millennium Defendants, the Millennium Founders, and Does 1 Through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by defendants' fraudulent concealment.

NINTH CAUSE OF ACTION

Breach of Fiduciary Duty Against Sean Jeffries, Luciano, and MPI (directly liable); Millennium Defendants (all indirectly liable based on agency and/or respondeat superior and all secondarily liable based on theories described in §IV); and Millennium Founders (all secondarily liable based on theories described in §IV), and Does 1 Through 100, Inclusive

251. The HOA re-alleges and incorporates by reference Paragraphs 1 through 250 above as if fully set forth herein.

A. Direct Liability

252. MPI owed a fiduciary duty to the HOA during the period when it was a member of the HOA's Board of Directors, which occurred during the period from the creation of the HOA Board in 2009 through at least part of 2011. For example, at the March 30, 2010 HOA meeting, all five members present at the Board meeting were officers, directors, or employees of MPI. The following individuals employed by MPI were all on the HOA's Board during the period from 2009 through at least part of 2011: Richard Baumert, Diana Nelson, Maijken Johnson, Carrie Leung, John Luciano, Jeff Jeffries, and Craig Mooney. In addition, each of these board members represented publicly that they were employed by "Millennium Partners," which referred to MPI. Each was acting on behalf of MPI when acting as board members of the HOA.

253. MPI knew that the building was settling excessively and differentially by March 15, 2010, if not earlier. Yet MPI breached its fiduciary duties to the Board by, among other acts and omissions, failing to maintain sufficient reserve and operating funds to maintain and repair the known defects; failing to act in the best interests of the HOA by immediately seeking to

repair known defects and halt ongoing damage to the building; and by acting in the best interests of MPI, not the HOA, through the concealment of information about the excessive and differential settlement from homeowners and other Board members. In so acting, MPI breached its fiduciary duties to the Board, including but not limited to its duties of care, good faith and fair dealing, and loyalty.

254. As designated contact for receipt of monitoring data from the TJPA, Sean Jeffries owed a fiduciary duty to the HOA, its board, and its members.

255. Despite owing this fiduciary duty, Sean Jeffries wrongfully failed to disclose to the HOA and its members all material facts regarding the substantial defects at the Millennium Tower. Such failure constituted a breach of his fiduciary duties to the Board, including but not limited to a breach of his duties of care, good faith and fair dealing, and loyalty to the HOA.

256. As a member of the HOA Board, Luciano owed a fiduciary duty to the HOA and its members. Board members are expected to act with good judgment, in good faith, and in the best interests of their organization.

257. Despite owing such a fiduciary duty, Luciano wrongfully failed to disclose to the HOA and its members all material facts regarding the substantial defects at the Millennium Tower. Such failure constituted a breach of his fiduciary duties to the Board, including but not limited to a breach of his duties of care, good faith and fair dealing, and loyalty to the HOA.

258. As a direct and proximate result of Sean Jeffries, Luciano and MPI's breaches, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

259. The HOA also seeks punitive or exemplary damages because Sean Jeffries, Luciano and MPI's conduct was malicious, oppressive, and fraudulent, and taken in knowing disregard of their legal duties. Sean Jeffries, Luciano, and MPI knew that the construction and design of the Millennium Tower was deficient and that the Millennium Tower was suffering from excessive vertical and differential settlement, and consciously and recklessly disregarded the probability of injury to future residents of Millennium Tower units and to the common areas of the Millennium Tower by developing and marketing the Millennium Tower despite knowing that its construction methods and design plans were deficient, and by continuing to market the

units after they received information that the building was sinking and tilting.

B. Secondary Liability

260. In engaging in this breach of fiduciary duty, Sean Jeffries was acting on behalf of MSD, for which he is the agent. Sean Jeffries was acting as the agent of MSD and his conduct was in the scope of his authority as an agent of MSD.

261. In the alternative, Sean Jeffries was acting on behalf of MSH, for which he is the Vice President. Sean Jeffries was acting as the agent and/or employee of MSH and his conduct was in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

262. In the alternative, Sean Jeffries was acting on behalf of MPM, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

263. In the alternative, Sean Jeffries was acting on behalf of MP LLC, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

264. In the alternative, Sean Jeffries was acting on behalf of MPI, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

265. In engaging in this breach of fiduciary duty, Luciano was acting on behalf of MSD, for which he is the agent. Luciano was acting as the agent of MSD and his conduct was in the scope of his authority as an agent of MSD.

266. In the alternative, Luciano was acting on behalf of MSH, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MSH and his conduct was in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

267. In the alternative, Luciano was acting on behalf of MPM, for which he is the Tower's Property Manager. Luciano was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

268. In the alternative, Luciano was acting on behalf of MP LLC, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

269. In the alternative, Luciano was acting on behalf of MPI, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

270. In the alternative, the Millennium Defendants are indirectly liable based on secondary liability theories described in §IV *supra*.

271. In addition, the Millennium Founders are indirectly liable based on secondary liability theories described in §IV *supra*.

272. Sean Jeffries, Luciano, MPI, the Millennium Defendants, the Millennium Founders, and Does 1 through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by defendants' breach of fiduciary duty.

TENTH CAUSE OF ACTION

Violation of Business and Professions Code § 17200 *et seq.* **Against Sean Jeffries Luciano, and Millennium Defendants (all directly liable); Millennium Defendants (all indirectly liable based on agency and/or respondeat superior and all secondarily liable based on theories described in §IV); and Millennium Founders (all indirectly liable based on all secondarily liable based on theories described in §IV), and Does 1 Through 100, Inclusive**

273. The HOA re-alleges and incorporates by reference Paragraphs 1 through 272 above as if fully set forth herein.

A. Direct Liability

274. California Business and Professions Code section 17200 *et seq.* prohibit unfair competition, including any unlawful, unfair, or fraudulent business act or practice.

275. The conduct of the Millennium Defendants, Sean Jeffries, and Luciano alleged herein constitutes unlawful, unfair, or fraudulent business acts or practices.

276. The Millennium Defendants, Sean Jeffries, and Luciano's unlawful, unfair, and fraudulent business acts and practices included a pattern of violations of California Civil Code section 1134(b) in that they repeatedly failed to disclose the nature and extent of the vertical and differential settlement of the Millennium Tower to the HOA or its members.

277. Sean Jeffries' unlawful, unfair, or fraudulent business acts or practices include his misrepresentations in the course of his dealings and communications with the HOA Board, and his failure to disclose the differential settlement of the Millennium Tower to the HOA or its members.

278. Luciano's unlawful, unfair, or fraudulent business acts or practices include his misrepresentations in the course of his dealings and communications with the HOA Board, and his failure to disclose the differential settlement of the Millennium Tower to the HOA or its members.

279. MPI's unlawful, unfair, or fraudulent business acts or practices include its failure to disclose the differential settlement of the Millennium Tower to the HOA or its members in breach of its fiduciary duty.

280. As a direct and proximate result of the conduct of the Millennium Defendants, Sean Jeffries and Luciano constituting unfair, unlawful, or fraudulent business practices, the HOA has suffered and will continue to suffer damages entitling it to restitution in an amount to be proved at trial.

281. The HOA also seeks an order that Sean Jeffries, John Luciano, and the Millennium Defendants, be required to provide restitution to the HOA to restore money or property acquired by means of the Millennium Defendants, Sean Jeffries and Luciano's unfair, unlawful, or fraudulent practices and that resulted in injury to the common areas of the

Millennium Tower.

B. Secondary Liability

282. Sean Jeffries was acting on behalf of MSD, for which he is the agent. Sean Jeffries was acting as the agent of MSD and his conduct was in the scope of his authority as an agent of MSD.

283. In the alternative, Sean Jeffries was acting on behalf of MSH, for which he is the Vice President. Sean Jeffries was acting as the agent and/or employee of MSH and his conduct was in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

284. In the alternative, Sean Jeffries was acting on behalf of MPM, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

285. In the alternative, Sean Jeffries was acting on behalf of MP LLC, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

286. In the alternative, Sean Jeffries was acting on behalf of MPI, for which he is the agent and/or principal. Sean Jeffries was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

287. Luciano was acting on behalf of MSD, for which he is the agent. Luciano was acting as the agent of MSD and his conduct was in the scope of his authority as an agent of MSD.

288. In the alternative, Luciano was acting on behalf of MSH, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MSH and his conduct was in the scope of his authority as an agent of MSH and/or within the scope of this employment as an employee of MSH.

289. In the alternative, Luciano was acting on behalf of MPM, for which he is the Tower's Property Manager. Luciano was acting as the agent and/or employee of MPM and his conduct was in the scope of his authority as an agent of MPM and/or within the scope of this employment as an employee of MPM.

290. In the alternative, Luciano was acting on behalf of MP LLC, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MP LLC and his conduct was in the scope of his authority as an agent of MP LLC and/or within the scope of this employment as an employee of MP LLC.

291. In the alternative, Luciano was acting on behalf of MPI, for which he is the agent and/or principal. Luciano was acting as the agent and/or employee of MPI and his conduct was in the scope of his authority as an agent of MPI and/or within the scope of this employment as an employee of MPI.

292. In the alternative, the Millennium Defendants indirectly liable based on secondary liability theories described in §IV *supra*.

293. In addition, the Millennium Founders indirectly liable based on secondary liability theories described in §IV *supra*.

294. Sean Jeffries, Luciano, the Millennium Defendants, the Millennium Founders, and Does 1 Through 100, Inclusive are all jointly and severally liable for the HOA's damages caused by defendants' violations of Business & Professions Code section 17200 *et seq*.

ELEVENTH CAUSE OF ACTION

Inverse Condemnation Against the TJPA

295. The HOA re-alleges and incorporates by reference Paragraphs 1 through 294 above as if fully set forth herein.

296. Inverse condemnation claims arise under Article I, section 19, of the California Constitution, which provides that "[p]rivate property may be taken or damaged for a public use and only when just compensation … has first been paid to … the owner." Cal. Const. art. I, § 19.

297. The construction of the Transit Center and Support System substantially affected the support, safety, and integrity of the Millennium Tower. The soil beneath the Millennium

Tower has been destabilized by the construction of the Transit Center and Support System, and the Property has suffered from material movement and/or settlement, which is expected to continue for the foreseeable future. This movement and settlement is both vertical and differential and has resulted, and will continue to result, in cracks in the foundations, slabs, and walls of the Millennium Tower, water intrusion through foundation walls, displacement of sewer and other utility connections, and other damage.

298. The TJPA's construction activities at the site of the Transit Center, adjacent to the Millennium Tower, have caused vertical and differential settlement of the Tower and Podium, damage to the Garage, water intrusion, and other damages.

299. Construction of the Transit Center is ongoing such that harm to the Millennium Tower is continuous and ongoing. Accordingly, the full extent of any actual or potential harm to the Millennium Tower is unknown and ongoing.

300. The TJPA's construction of the Transit Center is a substantial and proximate cause of the vertical and differential settlement of the Tower and Podium, damage to the Garage, water intrusion, and other damages.

301. The HOA has suffered a taking of its property by the TJPA entitling the HOA to just compensation under Article I, section 19, of the California Constitution and the Fifth and Fourteenth Amendments to the United States Constitution.

302. The HOA is also entitled to costs, disbursements, and expenses, including attorney, appraisal, and engineering fees pursuant to Code of Civil Procedure Section 1036.

TWELFTH CAUSE OF ACTION

Trespass Against the TJPA

303. The HOA re-alleges and incorporates by reference Paragraphs 1 through 302 above as if fully set forth herein.

304. By its construction of the shoring wall, buttress wall, and related construction activities, the TJPA has intentionally, recklessly, or negligently entered the Millennium Tower or negligently caused construction-related objects to enter the Millennium Tower.

305. This entry into the Millennium Tower exceeded the TJPA's permission to enter

the Property.

306. The TJPA's conduct damaged the HOA because it was a substantial factor in causing vertical and differential settlement of the Millennium Tower, as well as cracks in the foundations, slabs, and walls of the Tower, Podium and Garage, water intrusion through foundation walls, displacement of sewer and other plumbing pipes, and other damage.

307. Construction of the Transit Center is ongoing such that harm to the Millennium Tower is continuous and ongoing. Accordingly, the full extent of any actual or potential harm to the Millennium Tower is unknown and ongoing.

308. As a direct and proximate result of the TJPA's wrongful conduct, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

THIRTEENTH CAUSE OF ACTION

Nuisance Against the TJPA and the Salesforce Tower Defendants

309. The HOA re-alleges and incorporates by reference Paragraphs 1 through 308 above as if fully set forth herein.

310. The TJPA's construction of the Transit Center and the Salesforce Tower Defendants' construction of the Salesforce Tower has caused or contributed to the sinking and tilting of the Millennium Tower, and the other damages alleged herein.

311. The TJPA and the Salesforce Tower Defendants' use and maintenance of their properties has interfered with and continues to interfere with the HOA's and the HOA's members' use and enjoyment of the Millennium Tower common areas and has damaged and continues to damage the Millennium Tower. The excessive vertical and differential settlement is continuing and keeps adversely impacting the Millennium Tower, as alleged above.

312. The TJPA's activities in constructing the Transit Center and the Salesforce Tower Defendants' construction of the Salesforce Tower have substantially contributed to the Millennium Tower's excessive and differential settlement, as well as cracks in the foundations, slabs, and walls of the Tower, Podium and Garage, water intrusion through foundation walls, displacement of sewer and other plumbing pipes, and other damage and thereby have resulted in a diminution in the Millennium Tower's value.

313. Construction of the Transit Center and the Salesforce Tower is ongoing such that harm to the Millennium Tower is continuous and ongoing. Accordingly, the full extent of any actual or potential harm to the Millennium Tower is unknown and ongoing.

314. The substantial invasion of the HOA's interest in the use and enjoyment of the common areas is unreasonable.

315. As a result of the TJPA and the Salesforce Tower Defendants' construction activities, the HOA has suffered damages as set forth herein.

316. As a direct and proximate result of the TJPA and the Salesforce Tower Defendants' wrongful conduct, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

317. The TJPA and the Salesforce Tower Defendants are jointly and severally liable for the HOA's damages resulting from defendants' nuisance.

FOURTEENTH CAUSE OF ACTION

Violation of Statutory Duty to Provide Subjacent and Lateral Support Pursuant to California Civil Code § 832 Against the TJPA, the Salesforce Tower Defendants, and Does 1 Through 100, Inclusive

318. The HOA re-alleges and incorporates by reference Paragraphs 1 through 317 above as if fully set forth herein.

319. The Millennium Tower receives lateral and subjacent support from the soil underlying the Transit Center, which adjoins the Millennium Tower to the southwest, and the soil underlying the Salesforce Tower, which is directly across Fremont Street from the Millennium Tower.

320. The TJPA and the Salesforce Tower Defendants have directed excavation and dewatering work at the Transit Center, by and through their agents and/or employees.

321. The excavation and dewatering work, and the manner in which this work was undertaken, was deliberately designed and constructed for the purpose of constructing improvements at the Transit Center and the Salesforce Tower.

322. The excavations at the Transit Center and Salesforce Tower are deeper than the

standard depth of foundations as defined by statute.

323. On information and belief, the HOA alleges that the TJPA and the Salesforce Tower Defendants failed to exercise ordinary care and skill and take reasonable precautions to sustain the adjoining land, as required by California Civil Code Section 832.

324. As a direct and proximate cause of the TJPA's and the Salesforce Tower Defendants' excavation and dewatering at the Transit Center, the Millennium Tower was deprived of lateral and subjacent support. The TJPA's and the Salesforce Tower Defendants' construction, excavation, and dewatering resulted in harm to the Millennium Tower, and to the Millennium Tower experiencing differential and vertical settlement beyond even the revised maximum settlement prediction provided by Treadwell & Rollo in 2009 of 10.3-12.3 inches,[51] as well as in cracks in the foundations, slabs, and walls of the Tower, Garage and Podium, water intrusion through foundation walls, displacement of sewer and other plumbing pipes, and other damage.

325. Construction of the Transit Center and Salesforce Tower is ongoing such that harm to the Millennium Tower is continuous and ongoing. Accordingly, the full extent of any actual or potential harm to the Millennium Tower is unknown and ongoing.

326. As a direct and proximate result of the TJPA's and the Salesforce Tower Defendants' breach of duty pursuant to Section 832, the HOA has suffered and will continue to suffer damages in an amount to be proved at trial.

327. The TJPA and the Salesforce Tower Defendants are jointly and severally liable for the HOA's damages resulting from defendants' denial of subjacent and lateral support to the Millennium Tower.

FIFTEENTH CAUSE OF ACTION

Petition for Writ of Mandate to Compel Enforcement of CEQA Mitigation Measures Against TJPA

328. The HOA re-alleges and incorporates by reference Paragraphs 1 through 327

[51] Letter from Treadwell & Rollo to DBI (Feb. 19, 2009).

above as if fully set forth herein.

329. The FEIR and Mitigation Monitoring and Reporting Program set forth the enforceable mitigation measures that TJPA adopted under CEQA to avoid significant impacts on the environment, and the basic framework through which the enforceable mitigation measures will be monitored to ensure implementation. These mitigation measures included the obligation to monitor adjacent buildings for movement and take immediate action to control the movement if any is detected.

330. TJPA is responsible for both the implementation and monitoring of Mitigation Measures SG-1 through SG-5, as set forth in the Mitigation Monitoring and Reporting Program.

331. Despite TJPA's mandatory duty to implement, monitor, and enforce mitigation pursuant to the Mitigation Monitoring and Reporting Program, TJPA has failed to take required procedures or corrective measures to prevent the effects of the construction of the Transit Center, and that failure has led to an increased rate and increased amount of settlement of the Tower.

332. Construction of the Transit Center is ongoing. As such, any harm to the Tower from the Transit Center is continuous and repeated, and will remain so until impacts to the Tower resulting from Transit Center-related construction have stabilized. Until then, the full extent of any actual or potential harm to the Tower resulting from vertical or differential settlement is unknown and ongoing.

333. TJPA's failures as alleged herein breached mandatory duties and were not discretionary acts.

334. TJPA's duty to take corrective action is mandatory and subject to a writ of mandate notwithstanding any discretionary component in the manner in which the agency performs its mandatory duty. *See Coachella Valley Unified Sch. Dist. v. State of Cal.*, 176 Cal. App. 4th 93, 113 (2009) ("And, while a party may not invoke the remedy to force a public entity to exercise discretionary powers in any particular manner, if the entity refuses to act, mandate is available to compel the exercise of those discretionary powers in some way."); *L. A. Cty. Emps. Ass'n, Local 660 v. Cty. of L.A.*, 33 Cal. App. 3d 1, 8 (1973) ("While mandamus will not lie to compel governmental officials to exercise their discretionary powers in a particular manner, it

will lie to compel them to exercise them in some manner."). Mandate is appropriate to compel TJPA to exercise discretion and take corrective action as required by law.

335. The HOA has a direct and beneficial interest in ensuring that TJPA performs the Mitigation Measures, which were intended to protect the Tower, and has exhausted all other available remedies.

336. The HOA has a beneficial right to TJPA's performance of its duties based on the HOA's interest in mitigating further harmful effects to the Tower from subsidence and issues related to the removal of lateral and subjacent support due to neighboring construction and dewatering activities.

337. The HOA seeks only equitable, non-monetary relief as to this cause of action. The HOA has no plain, speedy, and adequate remedy at law, in that unless this Court issues a writ mandating TJPA to undertake the obligations and responsibilities it is charged with under relevant local and state law, there is no assurance TJPA will perform its mandatory duties.

338. A dispute has arisen between the HOA and TJPA in that the HOA believes and contends, for the reasons set forth above, that TJPA's actions as set forth above were unlawful and invalid. The HOA is informed and believe, and on that basis contends, that TJPA contends in all respects to the contrary.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for relief as follows:

1. For compensatory and special damages, according to proof at trial but believed to exceed Two Hundred Million Dollars ($200,000,000);

2. For interest thereon at the maximum legal rate;

3. For statutory damages as set forth in California Civil Code section 895 *et seq.*;

4. For expert fees and investigative costs regarding the nature and extent of the violations of standards, defective conditions, resulting damages, and appropriate method of repairing these damages and defective conditions in accordance with *Stearman v. Centex Homes*, 78 Cal. App. 4th 611 (2000), according to proof at trial;

5. For an order that the Millennium Defendants be required to disgorge the profits they have wrongfully obtained and provide the HOA restitution;

6. For injunctive relief to prevent the defendants' conduct that is continuing to cause damage to the HOA and to the Tower and is a nuisance, and to remedy and repair the Tower's defects;

7. For cost of relocation, loss of use, substitute housing, and mitigation expenses;

8. For punitive and/or statutory exemplary damages;

9. For costs of suit and reasonable attorneys' fees incurred herein; and

10. For an award holding all defendants jointly and severally liable for all of the HOA's damages, costs, fees, and interests arising from the defendants' joint tortious conduct.

11. For a writ of mandate commanding TJPA to carry out its obligations to implement the monitoring and mitigation measures set forth in the Mitigation Monitoring and Reporting Program, including specifically Mitigation Measures SG 1, 4 and 5, under which TJPA is obligated to monitor adjacent buildings for movement, and if movement is detected, take immediate action to control the movement.

12. For any and all other relief the Court deems just and proper.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury trial on all triable issues.

Dated: October 13, 2017

DANIEL M. PETROCELLI
VISION WINTER
O'MELVENY & MYERS LLP

By: _____
Daniel M. Petrocelli
Attorneys for Plaintiff

VERIFICATION

I, Steven Mayer, declare:

I am the President of the Millennium Tower Association ("MTA"), a party to this action, and am authorized to make this verification on its behalf. I have read paragraphs 11-13, 19-22, 44, 77-89, and 329-338 of the foregoing PLAINTIFF MILLENNIUM TOWER ASSOCIATION'S THIRD AMENDED COMPLAINT 1) VIOLATION OF CAL. CIV. CODE § 895 ET SEQ.; 2) NEGLIGENCE; 3) BREACH OF EXPRESS WARRANTIES; 4) BREACH OF IMPLIED WARRANTIES; 5) STRICT LIABILITY; 6) NEGLIGENT MISREPRESENTATION; 7) FRAUDULENT MISREPRESENTATION; 8) FRAUDULENT CONCEALMENT; 9) BREACH OF FIDUCIARY DUTY; 10) VIOLATION OF CAL. BUS. & PROF. CODE § 17200 ET SEQ.; 11) INVERSE CONDEMNATION; 12) TRESPASS; 13) NUISANCE; AND 14) VIOLATION OF CAL. CIV. CODE § 832; AND 15) VERIFIED PETITION FOR WRIT OF MANDATE ("Verified Petition for Writ of Mandate") and know its contents. I am informed and believe and on that ground allege that the matters stated in paragraphs 11-13, 19-22, 44, 77-89, and 329-338 of the Verified Petition for Writ of Mandate are true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on October 13, 2017 at San Francisco, California.

Steven Mayer

PROOF OF SERVICE

I am over the age of eighteen years and not a party to the within action. I am a resident of or employed in the county where the service described below occurred. My business address is 2765 Sand Hill Road, Menlo Park, California 94025-7019.

On October 13, 2017, I served true and correct copies of the following document(s):

THIRD AMENDED COMPLAINT FOR: 1) VIOLATION OF CAL. CIV. CODE § 895 ET SEQ.; 2) NEGLIGENCE; 3) BREACH OF EXPRESS WARRANTIES; 4) BREACH OF IMPLIED WARRANTIES; 5) STRICT LIABILITY; 6) NEGLIGENT MISREPRESENTATION; 7) FRAUDULENT MISREPRESENTATION; 8) FRAUDULENT CONCEALMENT; 9) BREACH OF FIDUCIARY DUTY; 10) VIOLATION OF CAL. BUS. & PROF. CODE § 17200 ET SEQ.; 11) INVERSE CONDEMNATION; 12) TRESPASS; 13) NUISANCE; 14) VIOLATION OF CAL. CIV. CODE § 832; AND 15) VERIFIED PETITION FOR WRIT OF MANDATE.

on the following persons at the locations and/or electronic transmission address as follows:

Please see Service List below.

in the manner indicated below:

☐ **BY UNITED STATES MAIL**: Following ordinary business practices, I sealed true and correct copies of the above documents in addressed envelope(s) and placed them at my workplace for collection and mailing with the United States Postal Service. I am readily familiar with the practices of the O'Melveny & Myers LLP's office for collecting and processing mail. In the ordinary course of business, the sealed envelope(s) that I placed for collection would be deposited, postage prepaid, with the United States Postal Service that same day.

☐ **BY PERSONAL SERVICE**: I sealed true and correct copies of the above documents in addressed envelope(s) and caused such envelope(s) to be delivered by hand at the above locations by a professional messenger service. **A declaration from the messenger who made the delivery ☐ is attached or ☐ will be filed separately with the court.**

☐ **BY OVERNIGHT DELIVERY**: I sealed true and correct copies of the above documents in addressed envelope(s) and placed them at my workplace for collection and delivery by overnight courier service. I am readily familiar with the practices of the O'Melveny & Myers LLP's office for sending overnight deliveries. In the ordinary course of business, the sealed envelope (&) that I placed for collection would be collected by a courier the same day.

☒ **BY ELECTRONIC MAIL:** I caused the documents to be sent to the person(s) at the electronic service address (es) listed below. Such document(s) were transmitted *via* electronic mail from the electronic address: ddiaz@omm.com ☒ in portable document format ("PDF") Adobe Acrobat or ☐ in Word document format. OR

☒ **BY ELECTRONIC FILING:** I electronically served the above referenced document(s) through File & ServeXpress. E-Service in this action was completed on all parties listed on the service list with File & ServeXpress. This service complies with the Court's Local Rule 2.10 for allowance of documents to be voluntarily filed and served upon interested parties via File & ServeXpress E-Service System.

I declare under penalty of perjury under the laws of the State of California that the above is true and correct. Executed on October 13, 2017, at Menlo Park, California.

Diana Diaz

SERVICE LIST

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Allan Steyer D. Scott Macrae STEYER LOWENTHAL BOODROOKAS ALVAREZ & SMITH LLP One California Street, Third Floor San Francisco, CA 94111 Email: asteyer@steyerlaw.com smacrae@steyerlaw.com Telephone: (415) 421-3400 Facsimile: (415) 421-2234	Attorneys for Plaintiffs Maui Peaks Corporation vs. Mission Street Development LLC, et al. Case No. CGC-17-560322

EXHIBIT 6

CITY AND COUNTY OF SAN FRANCISCO

OFFICE OF THE CITY ATTORNEY

DENNIS J. HERRERA
City Attorney

September 20, 2016

Christopher Jeffries
Partner
Millennium Partners I, Inc.
735 Market Street
San Francisco, CA 94103

Re: **Service of Administrative Subpoena on Millennium Partners I, Inc.**

Dear Mr. Jeffries:

Enclosed please find an administrative subpoena seeking information regarding real estate disclosures tendered to actual purchasers of residential units located at 301 Mission Street, San Francisco, CA 94105 (the "Property").

I have serious concerns that the disclosures required by state law pursuant to California Civil Code Section 1102 et seq. did not contain information about the settling of the Property, and as such, did not accurately inform the purchasers of the more than 400 units of the conditions at the Property.

I trust that you will work to gather the responsive documents and tender them to my office in the manner and within the timelines outlined in the subpoena. Should you have any questions, or wish to discuss this matter further, please contact Deputy City Attorney Yvonne Meré at (415) 554-3874.

Very truly yours,

DENNIS J. HERRERA
City Attorney

cc: United Corporate Services, Inc.
608 University Ave
Sacramento, CA 95825

CITY AND COUNTY OF SAN FRANCISCO
OFFICE OF THE CITY ATTORNEY

ADMINISTRATIVE SUBPOENA

To: **Millennium Partners I, Inc. Which Will Do In California as New York SF Millennium Partners I, Inc. as developers of the property located at 301 Mission Street, San Francisco, CA 94105, also known as the Millennium Tower**

Pursuant to San Francisco Administrative Code §§ 2A.231, California Civil Code §§ 3479, 3480, Code of Civil Procedure § 731, and in furtherance of an investigation, the San Francisco City Attorney's Office hereby commands you, within fifteen (15) days after service, to produce and permit inspection and copying of all documents, records, and other materials described in **Exhibit A**, by mailing such materials, together with a certification, dated and signed under penalty of perjury under the laws of the State of California that the documents provided are true, correct and complete copies of all documents responsive to this Administrative Subpoena, to the following location:

Office of the City Attorney
Attn: Yvonne R. Meré, Deputy City Attorney
1390 Market Street, 7th Floor
San Francisco, CA 94102

The subpoenaed items are relevant to an investigation of possible violations of law, including California Civil Code §§ 1102 *et seq.*, 3479, 3480 at 301 Mission Street, San Francisco, California 94105, and the documents requested are believed to contain evidence of such violations.

If you have any questions regarding compliance with this subpoena, contact: Yvonne R. Meré, Deputy City Attorney (State Bar No. 173594), Tel. (415) 554-3874, Fax (415) 437-4644.

Please be advised that destruction or concealment of any items requested will result in a referral to law enforcement for criminal prosecution pursuant to California Penal Code § 135.

Failure to comply with the commands of this subpoena may subject you to citation for contempt or other penalties before the Superior Court of the State of California.

Signed in the City and County of San Francisco this 20th day of September 2016.

By: _____
Yvonne R. Meré, as Deputy City Attorney for the City and County of San Francisco

EXHIBIT A

1. Any and all disclosures required by California Civil Code § 1102.6 and tendered to actual purchasers of residential units at 301 Mission Street.

PROOF OF SERVICE

I, Sophia Garcia, declare as follows:

I am a citizen of the United States, over the age of eighteen years and not a party to the above-entitled action. I am employed at the City Attorney's Office of San Francisco, Fox Plaza Building, 1390 Market Street, Seventh Floor, San Francisco, CA 94102.

On September 20, 2016, I served the following document(s):

ADMINISTRATIVE SUBPOENA

on the following persons at the locations specified:

United Corporate Services, Inc.
608 University Ave
Sacramento, CA 95825

Christopher Jeffries
Partner
Millennium Partners I, Inc.
735 Market Street
San Francisco, CA 94103

in the manner indicated below:

☒ **BY UNITED STATES MAIL**: Following ordinary business practices, I sealed true and correct copies of the above documents in addressed envelope(s) and placed them at my workplace for collection and mailing with the United States Postal Service. I am readily familiar with the practices of the San Francisco City Attorney's Office for collecting and processing mail. In the ordinary course of business, the sealed envelope(s) that I placed for collection would be deposited, postage prepaid, with the United States Postal Service that same day.

☒ **BY PERSONAL SERVICE**: I sealed true and correct copies of the above documents in addressed envelope(s) and caused such envelope(s) to be delivered by hand at the above locations by a professional messenger service. **A declaration from the messenger who made the delivery ☐ is attached** or ☐ **will be filed separately with the court.**

☐ **BY OVERNIGHT DELIVERY**: I sealed true and correct copies of the above documents in addressed envelope(s) and placed them at my workplace for collection and delivery by overnight courier service. I am readily familiar with the practices of the San Francisco City Attorney's Office for sending overnight deliveries. In the ordinary course of business, the sealed envelope(s) that I placed for collection would be collected by a courier the same day.

I declare under penalty of perjury pursuant to the laws of the State of California that the foregoing is true and correct. Executed September 20, 2016, at San Francisco, California.

_____
Sophia Garcia

THE SILVERSTEIN LAW FIRM
A Professional Corporation

215 NORTH MARENGO AVENUE, 3RD FLOOR
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PHONE: (626) 449-4200 FAX: (626) 449-4205
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June 29, 2018

VIA EMAIL California.Jobs@opr.ca.gov
Scott.Morgan@opr.ca.gov

Governor's Office of Planning and Research
State Clearing House
Scott Morgan, Director
1400 Tenth Street, Room 117
Sacramento, CA 95814

Re: **Supplemental Objections** to ELDP Application by MCAF Vine, LLC
State Clearing House Tracking No. 2018051002; Hollywood Center Project

Dear Director Morgan:

Please accept this letter as a supplement to the June 1, 2018 letter which I previously filed in opposition to the above-referenced ELDP Application.

As noted two days ago in the June 27, 2018 New York Times:

> "Los Angeles, Salt Lake City, San Jose and Seattle are among the cities that have buildings that could suffer more damage than anticipated or in the worst case, have a greater potential for collapse, engineers said. . . . In some areas of Los Angeles County . . . the new projections nearly double the previous estimates for the type of ground shaking that is most threatening to a tall building. . . . The revised estimates for Los Angeles are the result of a five-year project by the Southern California Earthquake Center, a research organization of seismologists and engineers, that used some of the country's most powerful supercomputers to study how earthquake shaking moves through local ground conditions. . . . The new

> projections of shaking in Los Angeles and other cities only apply to buildings of about 20 stories or more." (**Exh. 7**.)[1]

When – not if – the Hollywood Earthquake Fault ruptures, placing the Millennium developer's proposed 30+ and 40+ story towers on this site would not only kill and injure thousands of occupants, residents, workers and visitors, but it would cause enormous environmental impacts should the buildings also topple over onto surrounding structures, as well as blocking streets for weeks or months creating severe traffic impacts, which in turn would impact emergency services and response times.

Our June 1, 2018 letter and several other objection letters referenced the unique site constraints and dangers associated with this proposed development due to the California Geological Survey's Alquist-Priolo mapping of the 7.0-magnitude active[2] Hollywood Earthquake Fault across the site. The State's concerns about the safety of this site began as early as 2013. (See **Exh. 8** [July 20, 2013 Letter from California State Geologist to Los Angeles City Council noting impending completion of Alquist-Priolo map].)

Since that time, the Alquist-Priolo Map has been completed, and the California Geological Survey has unequivocally concluded that the active earthquake fault runs through the site. (See **Exh. 2** to our June 1, 2018 letter.) The State of California has been loudly sounding the alarm bell about the public health, safety, and welfare from potential development of this site.

As our Supreme Court has held, the Environmental Impact Report under CEQA

> "is an 'environmental 'alarm bell' whose purpose it is to alert the public and its responsible officials to environmental changes before

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[1] We are continuing exhibit numbering sequentially beginning from the last exhibit number listed in our June 1, 2018 objection letter.

[2] Millennium Partners has argued that no active earthquake fault traverses the property. These self-serving claims do not hold water, nor do they override the State's official conclusion, as published pursuant to the Alquist-Priolo Act, that the active Hollywood Earthquake Fault crosses the property. Millennium Partners also claim they did nothing wrong in San Francisco. A 58-story sinking and tilting building says otherwise.

> they have reached ecological points of no return.' [Citation.] The EIR is also intended 'to demonstrate to an apprehensive citizenry that the agency has, in fact, analyzed and considered the ecological implications of its action.' [Citations.] Because the EIR must be certified or rejected by public officials, it is a document of accountability. If CEQA is scrupulously followed, the public will know the basis on which its responsible officials either approve or reject environmentally significant action, and the public, being duly informed, can respond accordingly to action with which it disagrees. [Citations.] The EIR process protects not only the environment but also informed self-government." Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 392.

For multiple reasons, this project and site are highly inappropriate for the expedited CEQA process that ELDP status would allow.

The irregularities by Millennium previously on this site as shown by this firm's successful litigation in StopTheMillenniumHollywood.com, et al. v. City of Los Angeles, et al., Los Angeles Superior Court Case No. BS144606 (see also **Exh. 1** to our June 1, 2018 letter), coupled with the outrageousness of Millennium's attempt to obtain ELDP status in the face of prior State opposition to that earlier proposed development of largely the same project on the site, smacks of the same type of reckless practices seen with Millennium's current "Leaning Tower of San Francisco" disaster.

As also noted in our June 1, 2018 letter, Caltrans submitted multiple objections against the prior iteration of this project at this location. (**Exh. 3** to our June 1, 2018 letter.)

The instant ELDP application abuses the law and devalues the rationale for granting such privileged ELDP status. Not only is this project unbuildable and therefore unworthy, but this particular applicant has zero credibility. However, if a project could ever be built within safety standards at this site, that project should require the *fullest* consideration under CEQA, and not the ELDP expedited process that would richly reward perhaps the single-most notorious developer in the state – a developer as to which two state agencies have loudly sounded alarm bells.

Finally, if these facts and others already presented by multiple stakeholders have not persuaded you to deny this ELDP application, then we urge you to consult with your own experts, the California Geological Survey and Caltrans, to seek their independent opinions as to whether this project, this property, and this developer merit receiving ELDP status.

Thank you again for your attention to these issues of public health, safety, and welfare.

Very truly yours,

ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
Attachments

EXHIBIT 7

A Seismic Change in Predicting How Earthquakes Will Shake Tall Buildings

Earthquake engineers attending a conference in Los Angeles on Thursday were encouraged to communicate more effectively with the public. Credit: Monica Almeida forT he New York Times

By Thomas Fuller

June 27, 2018

LOS ANGELES — In their quest to make tall buildings safe during earthquakes, engineers have for decades relied on calculations that represent the tremors and convulsions that a building can endure. Some of the world's top earthquake experts now say the projections significantly underestimate the severity of shaking that buildings in several West Coast cities are likely to undergo during earthquakes.

The research, presented Wednesday at a gathering of earthquake experts in Los Angeles, has significant consequences in the ways tall buildings are designed. Los Angeles, Salt Lake City, San Jose and Seattle are among the cities that have buildings that could suffer more damage than anticipated or in the worst case, have a greater potential for collapse, engineers said.

“There are going to be large changes coming,” Norman Abrahamson, a seismologist at the University of California, Berkeley, told hundreds of engineers gathered for the conference. “We now know how far-off our ground motion models have been.”

In some areas of Los Angeles County like Century City, Culver City, Long Beach or Santa Monica, the new projections nearly double the previous estimates for the type of ground shaking that is most threatening to a tall building.

Ibbi Almufti, a researcher with the engineering firm Arup, said the significance of the new projections was “huge.”

“It’s going to amplify the shaking in terms of intensity but also the duration,” he said. “Those two things combined can have quite a damaging effect that right now we are probably not capturing.”

Greater shaking could also “bring out the vulnerabilities” in older buildings already known to have defects, Mr. Almufti said.

The revised estimates for Los Angeles are the result of a five-year project by the Southern California Earthquake Center, a research organization of seismologists and engineers, that used some of the country’s most powerful supercomputers to study how earthquake shaking moves through local ground conditions.

For decades experts have arrived at their calculations of shaking by observing conditions in California, Japan, Taiwan and other seismically active places and taking an average. But they discovered that grouping far-flung regions created imprecise estimates.

The crucial changes in the new models are that they rely on local conditions, not global averages, and they model the ground more deeply. The Los Angeles model relied on measurements of thousands of local earthquakes, most of them imperceptible but which offered more precise information on how seismic shock waves travel through the earth.

Understanding how earthquakes affect cities like Los Angeles, Mexico City and Seattle have long bedeviled earthquake experts because they sit in large basins where seismic waves are trapped and amplified. The effects are often compared to the way a bowl of Jell-O reacts when jolted.

The new projections of shaking in Los Angeles and other cities only apply to buildings of about 20 stories or more. But Professor Abrahamson said calculations that would be rolled out over the next few years would offer revisions of shaking for all structures and areas across the West. In some cases, the revisions will predict lower shaking estimates than previously thought.

California has not had a major earthquake since 1994 when a 6.7 magnitude earthquake struck northern Los Angeles neighborhood of Northridge, killing more than 60 people and causing widespread damage. But the seismic faults in California can produce earthquakes that release

well more than 50 times more energy than Northridge. There are no reliable ways of knowing where and when the next big earthquake will strike.

The new projections have been met with resistance by some engineers, some of whom fear that it could drive away developers.

In Seattle, where earthquakes have the potential to be even stronger than in California, engineers will be required to take into account new projections of shaking that are 33 percent higher than the old ones, said C.B. Crouse, an expert in ground motions who helped write the new guidelines.

“That’s a significant increase from the standpoint of building design,” Mr. Crouse said. But because of pushback by engineers in Seattle, the use of the new projections in building codes has been delayed until December.

“The structural engineers said this is really going to cause a problem with developers up here,” he said. “They said, ‘We can’t institute this immediately.’”

Jim Malley, a structural engineer who helped organize the conference, said implementation was a concern.

“We have to incorporate it,” he said of the new data. “We haven’t settled on how.”

Even more difficult is the question of how to handle existing buildings in areas where the ground shaking is projected to be significantly higher.

“These cities and buildings are already in place,” said Thomas H. Heaton, the director of the Earthquake Engineering Research Laboratory at the California Institute of Technology. “Now what do we do?”

At a time of a severe shortage of housing in California, where the median price of a home is now above $600,000, requiring retrofits would be an added and heavy financial burden.

John Vidale, the director of the Southern California Earthquake Center, said the revised projections would ultimately help engineers.

“What we are doing is mapping out things more precisely,” he said. “We are making more accurate maps. And we are shrinking the uncertainties.”

EXHIBIT 8

DEPARTMENT OF CONSERVATION

CALIFORNIA GEOLOGICAL SURVEY

801 K STREET • MS 12-30 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 445-1825 • **FAX** 916 / 445-5718 • **TDD** 916 / 324-2555 • **WEBSITE** conservation.ca.gov

July 20, 2013

Honorable Herb Wesson, President
Los Angeles City Council

c/o June Lagmay, City Clerk
City of Los Angeles
200 North Spring Street
City Hall – Room 360
Los Angeles, CA 90012

Re: Commencement of Alquist-Priolo Fault Zone Study, Hollywood Fault Zone
Millennium Hollywood Project; EIR No. ENV-2011-0675-EIR

Dear Council President Wesson:

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Division 2, Chapter 7.5, Sections 2621 *et seq*.) requires the State Geologist to place Earthquake Fault Zones around faults deemed to be sufficiently active and well-defined. Under this Act, cities and counties affected by the zones must regulate certain development projects within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

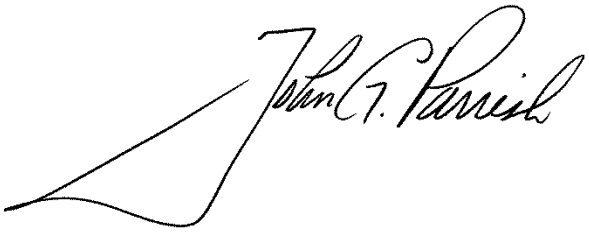
Based on a number of independent geological investigations, and recent work by the California Geological Survey (CGS) culminating in the *2010 Fault Activity Map of California*, CGS has commenced a detailed study of the Hollywood Fault and its associated splay faults for possible zoning as "Active" (as defined by the State Mining and Geology Board in the California Code of Regulations, Section 3601(a)) pursuant to the Alquist-Priolo Act. This investigation and resultant maps and reports are scheduled for completion by the end of this year or early in 2014.

It is our understanding that the Los Angeles City Council and the Planning Commission are in the process of reviewing plans for the prospective Millennium Hollywood Project, which may fall within an Earthquake Fault Zone should our investigations conclude that an active portion of the Hollywood Fault lies within the project site. If sufficient information results in the placement of an Earthquake Fault Zone, it will provide the City with new information for its consideration of current and future proposed developments all along the Hollywood Fault.

COPY

Results of this investigation will be provided to the City of Los Angeles immediately upon their release, and the City will have an opportunity to examine and comment on the Preliminary version of the maps and reports. Please do not hesitate to contact the CGS at any time if you have questions regarding this fault-zoning process.

Sincerely,



John G. Parrish, Ph. D., PG
State Geologist

COPY

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310-798-2400 Ext. 1

May 31, 2018

Mr. Ken Alex, Director
Office of Planning and Research
Office of Governor Edmund G. Brown, Jr.
1400 10th Street
Sacramento, California 95814

Via email: California.Jobs@opr.ca.gov

Re: Opposition to Certification of the Hollywood Center Project (Millennium), Application 2018051002 as an Environmental Leadership Development Project.

Dear Mr. Alex:

On behalf of Coalition to Preserve LA, we have reviewed MCAF Vine LLC's application requesting the Governor's certification that the Hollywood Center Project (a.k.a. Millennium) and object to its certification pursuant to AB 900. The application contains significant omissions and misstatements that should result in the application being rejected altogether. Most pronounced among the applicant's omissions is the fact that the proposed project is sited astride the Hollywood Fault Zone. Any construction of an occupied building across this fault is unsafe folly.

There are a number of reasons MCAF's AB 900 application cannot be approved as submitted, as explained below:

• Public Resources Code § 21178(e) plainly states that AB 900 covers "projects [that] are privately financed or financed from revenues generated from the projects themselves and *do not require taxpayer financing."* (Emphasis added.) This standard alone eliminates the Project's eligibility because the City of Los Angeles' proposed zone change and height district change (Application, p. 24) is a form of public subsidy that will allow development of a project that does not comply with current zoning or height restrictions that apply to all other property in the same area.

• Public Resources Code § 21183(c) requires that the project not cause a net increase in greenhouse gases. The project results in a net increase in generation of greenhouse gases, which require extensive purchases of credits to offset. Offsetting emissions does not equate to avoiding a net increase in greenhouse gasses. Rather, measures such as transportation demand management, requirements for Vehicle Mile Traveled reductions and other measures set forth in the application (Application Exhibit 7, p. 27) must include every feasible measure to reduce greenhouse gas emissions. We request that CARB carefully consider whether every feasible greenhouse gas reduction measure has been implemented before allowing the applicant to purchase carbon credits and undertake other unenforceable offset measures. (Exhibit 7, p. 45.)

• Public Resources Code § 21180(b)(1) requires the project to provide at least 15 percent greater transportation efficiency than comparable projects. MCAF has failed to meet this standard. MCAF's AB 900 application (Application, p. 9) does not include any comparisons to other actual high rise development projects and provides no analysis demonstrating that the 15% standard has been met. Instead, the MCAF application manufactures a comparison to a strawman theoretical "Comparable Residential Project." (Exhibit 4, pp. 9-11.) The Application must include information about actual residential and hotel projects of similar size and location to provide a realistic assessment of how the proposed project compares with a verifiable baseline. In the same way the California Environmental Quality Act requires comparison to a real world, actual existing conditions baseline (*Communities for a Better Environment v. South Coast Air Quality Management Dist.* (2010) 48 Cal.4th 310), the Governor's certification must require comparison to real world projects, not theoretical ones.

• Pursuant to the Governor's Guidelines, "[t]he project's Draft Environmental Impact Report must be circulated for public review *after* the Governor certifies the project for CEQA streamlining." (Emphasis added.) Because the City of Los Angeles has already circulated and certified an EIR for the Millennium/Hollywood Center Project, there must be an assurance from the City that it will prepare an EIR specific to the Hollywood Center Project with its new proposals and configurations, rather than relying on the previously circulated, and now judicially invalidated, EIR for the Millennium project.

• The application incorrectly asserts the Project is consistent with planning goals, policies, and objectives of the City of Los Angeles. (Application, p. 23.) Instead, the Project clearly is *not* consistent with the City of Los Angeles' regulatory standards for the project site. The application explicitly states "the Project will

seek a zone change to C2-SN, a Height District Change to remove the D Limitation" and other approvals. (Application, p. 24.) Proposed projects must be consistent with existing zoning and general plan designations before, they should be certified as ELDP projects. Clearly, the Project here is not consistent with the City's zoning and height limit regulations because it seeks to change them.

Furthermore, the Project fails to comply with State laws, thereby potentially placing human lives at risk.[1] The applicant lacks candor in disclosing such a major potential risk inherent in the Project. In violation of the Alquist-Priolo Earthquake Fault Zoning Act, the Project would site human occupied development on a location that has been identified by the State Geologist as the site of an active earthquake fault. (http://www.latimes.com/local/la-me-hollywood-fault-millennium-20130802-story.html). In fact, this fault runs directly through the proposed Project site. (Enclosure 1.)

As the Los Angeles Superior Court explained in its 2015 ruling granting a petition for writ of mandate to set aside approval of the applicant's prior iteration of the Hollywood Center project, the Alquist-Priolo Earthquake Fault Zoning Act ("Alquist-Priolo"), (Pub. Res. Code §2621 et seq.,) was enacted to prohibit the construction of buildings for human occupancy across the trace of active faults. (*California Oak Found. v. Regents of Univ. of California*, (2010) 188 Cal.App.4th 227, 247; *Better Alternatives for Neighborhoods v. Heyman*, (1989) 212 Cal.App.3d 663, 670.) Alquist-Priolo's purpose is in part to "provide policies and criteria to assist cities, counties, and state agencies in the exercise of their responsibility to prohibit the location of developments and structures for human occupancy across the trace of active faults." (Pub. Res. Code§ 2621.5.) It is also meant to "provide the citizens of the state with increased safety and to minimize the loss of life during and immediately following earthquakes by facilitating seismic retrofitting to strengthen buildings, including historical buildings, against ground shaking." (*Id.*)

While the City of Los Angeles apparently disagrees with the State's Geologist, OPR should not recommend, and the Governor should not certify, a project that the State's Geologist has identified as unsafe and non-compliant with Alquist-Priolo as an Environmental Leadership project. Such a certification

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[1] The Project proponent, Millennium Partners, is the same developer who built the now-infamous Millennium Tower in San Francisco. This tower has recently gained notoriety for its faulty construction planning that has led to the sinking and leaning of the large residential tower. (https://www.sfgate.com/bayarea/article/Millennium-Tower-keeps-on-sinking-but-there-may-11297935.php .)

endangers residents and would tend to bring the entire Environmental Leadership certification program into disrepute.

Conclusion.

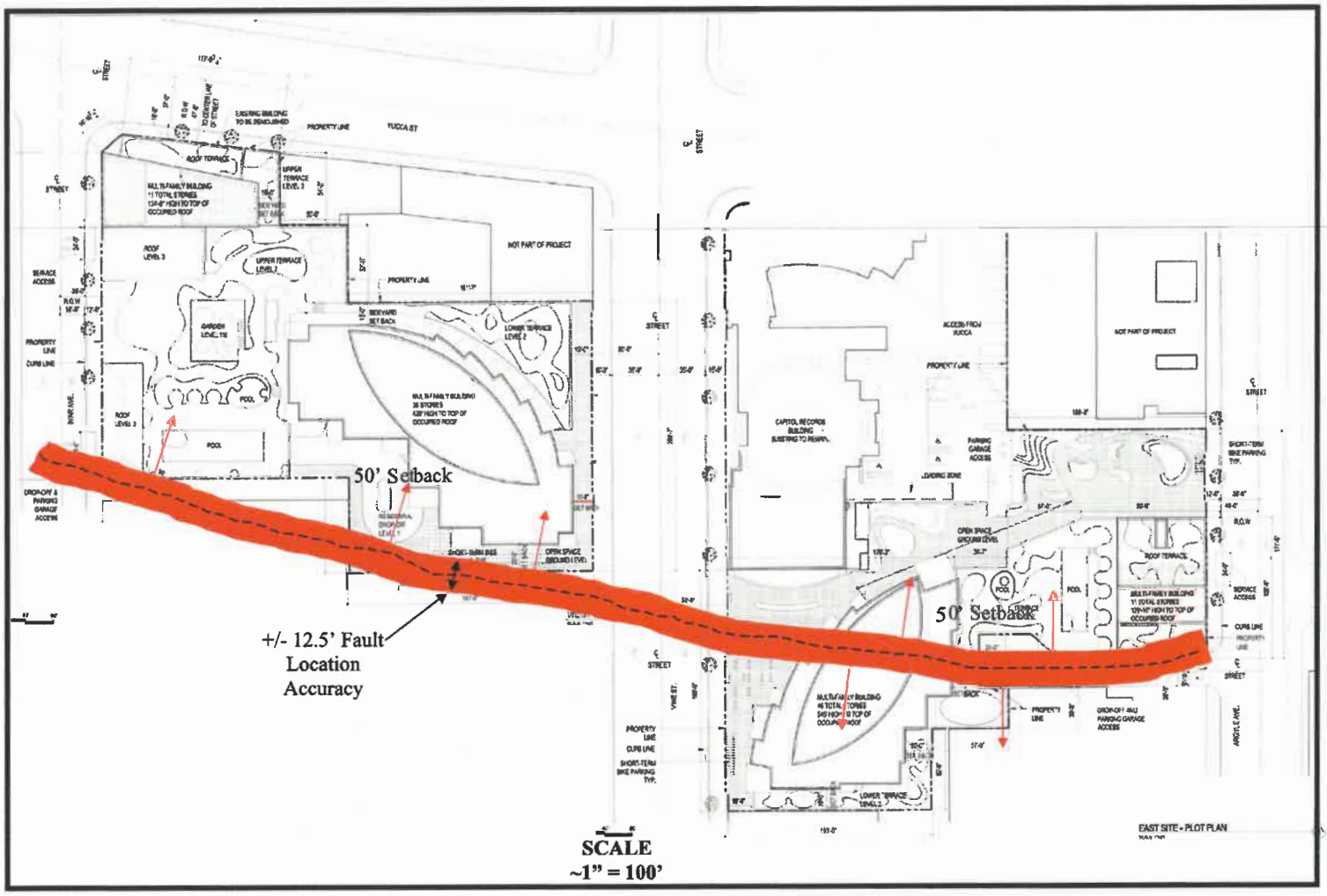
We request that the Governor not certify the Hollywood Center/Millennium Project. It does not meet the requirements of AB 900 and the application does not support such a determination. Instead, the Project would put human health at risk. It does not deserve assistance as an Environmental Leadership project.

Thank you for your consideration.

Sincerely,

Douglas P. Carstens

ENCLOSURE 1



PROPOSED HOLLYWOOD CENTER – APPROXIMATE LOCATION OF HOLLYWOOD FAULT

Director Ken Alex
Office of Planning and Research
Office of Governor Edmund G. Brown, Jr.
1400 10th Street
Sacramento, California 95814

Re: Opposition to Certification of the Hollywood Center Project
(aka Millennium), Application 2018051002 as an Environmental Leadership
Development Project.

Dear Mr. Alex:

Regarding the MCAF Vine LLC's (Millennium Partners) application to the Governor to certify the Hollywood Center Project – known as the Millennium – (Pub. Res. Code §2621 et seq.,) I urge you to reject certification of this environmentally unsustainable and dangerous plan to build two skyscrapers atop and next to the Hollywood Earthquake fault, which has been formally identified and located by the California State Geologist.

The Project's proponent, Millennium Partners, is the developer who built the sinking Millennium Tower in San Francisco. This tower is now notorious around the world for its faulty construction planning, which led to the sinking and leaning of the residential skyscraper -- a rare event globally, or in modern times.

You should reject this application because:

It fails on the net greenhouse gas test:
A project seeking Environmental Leadership Development Project (ELDP) can't cause a net increase in GHG, and the applicant must include every feasible measure to reduce greenhouse gas emissions, such as requirements for Vehicle Mile Traveled. I urge California Air Resources Board (CARB) to recognize that every feasible GHG reduction has NOT been included to justify a purchase by the applicant of carbon credits. See Public Resources Code § 21183(TK).

It fails under requirements of AB 900:
Under AB 900, this request must be rejected in whole. The City of L.A. has proposed zone and height district changes for this Project, where carefully reasoned height restrictions apply to it and all other land in the area. A city's granting of zone and height changes IS a public subsidy that is widely recognized as helping a developer's financial bottom line.

It fails to protect human life as required by state law:
The applicant is not being honest in disclosing the risk of an earthquake. In violation of the Alquist-Priolo Earthquake Fault Zoning Act, these skyscrapers would place occupants on property identified by the State Geologist as underlaid by an active fault. L.A. Superior Court said, in its 2015 ruling to set aside approval of the applicant's previous version of Hollywood Center project (the Millennium), that the Alquist-Priolo Earthquake Fault Zoning Act **prohibits construction** of buildings for human occupancy that lay across traces of an active fault. The State Geologist, not the City of LA, is recognized globally in these matters. The OPR should not recommend, and the Governor should not certify as an Environmental Leadership project, a project the State's Geologist has officially found unsafe and non-compliant with Alquist-Priolo.

It fails on the real-world transportation efficiency test:

The project must create at least 15% more transportation efficiency than comparable projects. Hera again, MCAF has completely failed. Its AB 900 application does NOT compare its proposed skyscrapers to real-life high-rises and contains ZERO analysis demonstrating it meets the 15% standard. It sets up a phony comparison to an imaginary "Comparable Residential Project." No. MCAF must present a verifiable baseline using actual residential and hotel projects of similar size and locale. The Governor's certification is required to compare this application to real world projects.

It fails on the local planning policies test:
The applicant wrongly claims the Project is consistent with City of Los Angeles planning goals, policies, and objectives. Proposed projects must be consistent with **existing zoning and general plan designations** before being certified as ELDP projects: it would need deviations including “a zone change to C2-SN, a Height District Change to remove the D Limitation." That’s not consistent!

Sincerely,

Alexa A. Williams

Dear Mr. Alex:

Regarding the MCAF Vine LLC's (Millennium Partners) application to the Governor to certify the Hollywood Center Project – known as the Millennium – (Pub. Res. Code §2621 et seq.,) I urge you to reject certification of this environmentally unsustainable and dangerous plan to build two skyscrapers atop and next to the Hollywood Earthquake fault, which has been formally identified and located by the California State Geologist.

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(Please see map included below.)

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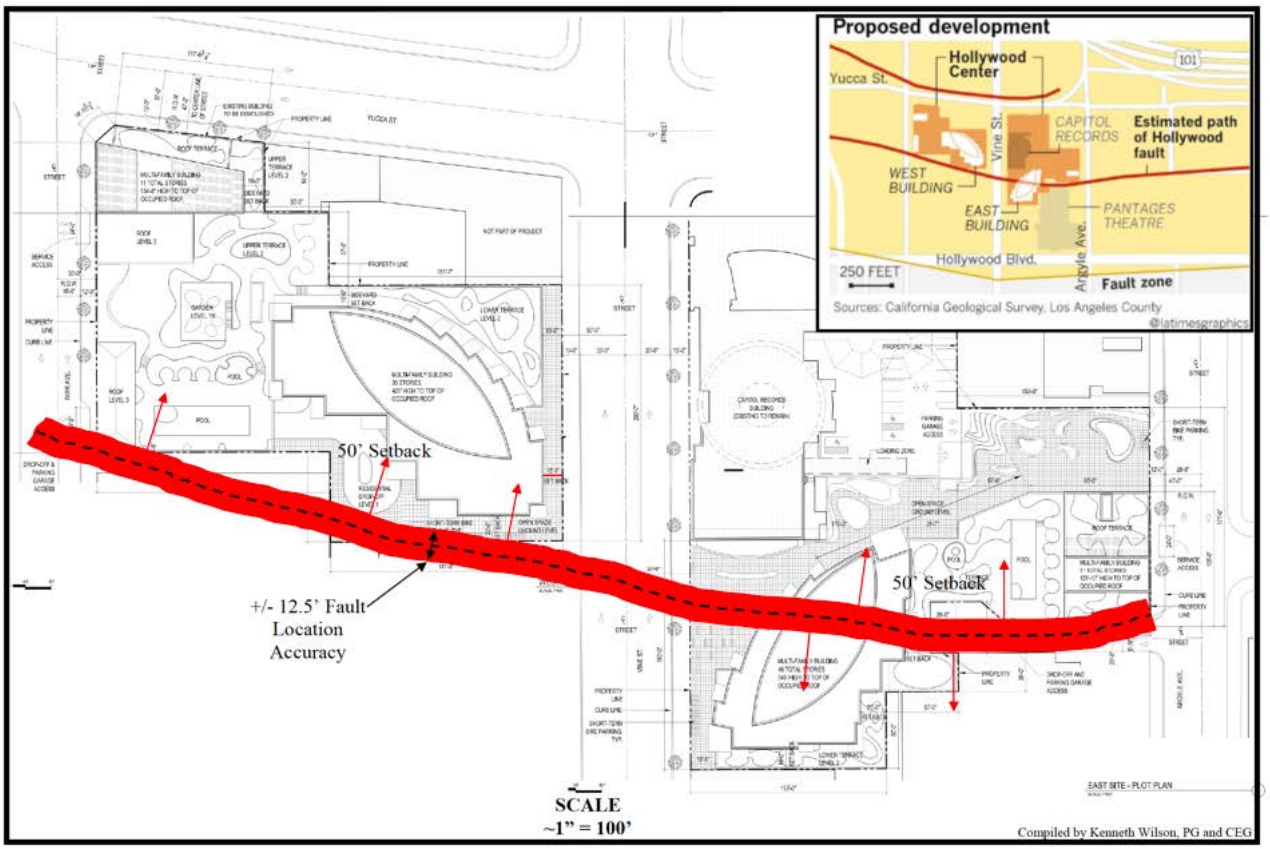
Sincerely,

Alex Kondracke



PROPOSED HOLLYWOOD CENTER – APPROXIMATE LOCATION OF HOLLYWOOD FAULT

Brian Dyer
1835 Grace Avenue
Los Angeles, CA 90028

June 1, 2018

Governor's Office of Planning & Research
Re: HOLLYWOOD CENTER PROJECT
Tracking Number: 2018051002

Re: AELDP for Hollywood Center Project

Please do not grant an AELDP for the Hollywood Center Project (HCP) as it does not meet AELDP qualification 2.a.3 (a 15% great transportation efficiency). The people who live and work in Hollywood rely on the State as arbiters of their safety and quality of life. This project does not yet meet those standards and will require a full EIR to answer environmental, geological and ethical process questions.

The original project at this site, proposed by the same developer, was not allowed because of inadequate and unrealistic traffic studies. In the five years sense, the onramps that would be affected are now also affected by newer development in Hollywood. Per the attached University of California Berkeley study, "Developing a New Methodology for Analyzing Potential Displacement," Millennium's Hollywood will most probably achieve little improvement, and most likely do the reverse. It will attract multiple car residences and disenfranchise those who truly need public transportation. Already, with the raising rents in Hollywood have risen dramatically. Development has come in raising affordable housing. Apartments that previously had one car to a low-income family now carry two to three cars as two or more independent millennials share the apartment to be able to afford the rent. Where there was one car circling, looking for parking in the Historic Hollywood, limited parking core, there are now one or two more cars added into the cycle. The bleeding into the neighborhoods from the backed up onramps to the 101 Freeway. CalTrans already expressed its opposition to a project on the same site with two tall towers next to the 101 Freeway. The tallest being was brought down from 52 stories to 35 at Los Angeles City Council's insistence. Why would 45 stories be considered now appropriate on the site? Since 2015, two other tall buildings have been built next to the 101 Freeway onramps, building up traffic that now extends blocks into the neighborhoods, idling the cars which belch emissions waiting to enter an already crowded, bottle-necked freeway system. A full EIR will pinpoint the hotspots that need attention. An AELDP will not.

The geological study on the fault running under the site lends itself to an ethical positioning that the State will not wish to be caught up in, as well as Geological issue. The original trenching and geotechnical study to qualify the fault was performed by Group Delta, a geotechnical firm that specializes in large, infrastructure and transportation projects (refer to Group Delta's website). The State disagreed with Group Delta's findings that the fault was inactive. However, the project does not rest with the State, it rests with the City. This in and of itself, could be considered a disagreement, but the ethical question comes when you consider Millennium's other proposed infrastructure project for Los

Angeles, the Hollywood Central Park (CAP Park.) CAP Park would overlay for a full mile the 101 Freeway, from Santa Monica Blvd., up to Gower, which would affect the same onramps mentioned earlier in the letter, plus a few more. This project at a low projection would be more than $1 billion. CAP Park's Form 900 (CAP Park is a 501(c)3 shows six of its Board Members being associated with the Millennium Partners, including its Chairman, Phil Aarons. The non-profit's president was a de facto lobbyist for Millennium Partners' for "Millennium Hollywood." Both projects, HCP and CAP Park will rely on Group Delta's study. Most troublesome is that the Los Angeles City Council voted to not have certain aspects of the Private/Public Park project be put out for bid, leaving a path for Group Delta, in a quid pro quo process, to become the CAP Park project manager and reap millions.

While the above maybe true or false, the dilemma is we can never know. The network that Millennium Partners has built with Group Delta, the Los Angeles City Council, and now is trying to do with the State will only obfuscate the truth. The site for this project is too complex for an AELDP which relies on studies paid for by the developer.

As mentioned above, the people who live and work in Hollywood rely on the State as arbiters of their safety and quality of life. The only way to assure that happens, with this particular developer, is to have a full EIR done with impartial consultants.

Sincerely

Brian Dyer

Sincerely

Brian Dyer

CitizenAudit.org

efile GRAPHIC print - DO NOT PROCESS | As Filed Data - | DLN: 93493294006223

Form **990**

Department of the Treasury
Internal Revenue Service

Return of Organization Exempt From Income Tax

Under section 501(c), 527, or 4947(a)(1) of the Internal Revenue Code (except black lung benefit trust or private foundation)

▶ The organization may have to use a copy of this return to satisfy state reporting requirements

OMB No 1545-0047

2012

Open to Public Inspection

A For the 2012 calendar year, or tax year beginning 02-01-2012 , 2012, and ending 01-31-2013

B Check if applicable
- ☐ Address change
- ☐ Name change
- ☐ Initial return
- ☐ Terminated
- ☐ Amended return
- ☐ Application pending

C Name of organization
FRIENDS OF THE HOLLYWOOD CAP PARK

Doing Business As

Number and street (or P O box if mail is not delivered to street address) | Room/suite
1680 N VINE STREET

City or town, state or country, and ZIP + 4
HOLLYWOOD, CA 90028

D Employer identification number
26-4236328

E Telephone number
(310) 274-8682

G Gross receipts $ 157,668

F Name and address of principal officer

H(a) Is this a group return for affiliates? ☐ Yes ☑ No

H(b) Are all affiliates included? ☐ Yes ☑ No
If "No," attach a list (see instructions)

H(c) Group exemption number ▶

I Tax-exempt status ☑ 501(c)(3) ☐ 501(c) ( ) ◀ (insert no) ☐ 4947(a)(1) or ☐ 527

J Website: ▶ hollywoodcentralpark org

K Form of organization ☑ Corporation ☐ Trust ☐ Association ☐ Other ▶

L Year of formation 2009

M State of legal domicile CA

Part I Summary

1 Briefly describe the organization's mission or most significant activities
TO RAISE FUNDS TO CREATE A NEW PARK IN HOLLYWOOD, ONE OF THE MOST DENSE AND GREEN SPACE STARVED NEIGHBORHOODS IN LOS ANGELES, BY COVERING A PORTION OF THE HOLLYWOOD FREEWAY (US 101) WITH A 44 ACRE STREET LEVEL REGIONAL PARK

2 Check this box ▶☐ if the organization discontinued its operations or disposed of more than 25% of its net assets

Activities & Governance

3	Number of voting members of the governing body (Part VI, line 1a)	**3**	34
4	Number of independent voting members of the governing body (Part VI, line 1b)	**4**	34
5	Total number of individuals employed in calendar year 2012 (Part V, line 2a)	**5**	0
6	Total number of volunteers (estimate if necessary)	**6**	61
7a	Total unrelated business revenue from Part VIII, column (C), line 12	**7a**	0
b	Net unrelated business taxable income from Form 990-T, line 34	**7b**	

		Prior Year	Current Year
8	Contributions and grants (Part VIII, line 1h)	8,678	3,382
9	Program service revenue (Part VIII, line 2g)		0
10	Investment income (Part VIII, column (A), lines 3, 4, and 7d)	5	1,212
11	Other revenue (Part VIII, column (A), lines 5, 6d, 8c, 9c, 10c, and 11e)	38,437	60,923
12	Total revenue—add lines 8 through 11 (must equal Part VIII, column (A), line 12)	47,120	65,517
13	Grants and similar amounts paid (Part IX, column (A), lines 1–3)		0
14	Benefits paid to or for members (Part IX, column (A), line 4)		0
15	Salaries, other compensation, employee benefits (Part IX, column (A), lines 5–10)		0
16a	Professional fundraising fees (Part IX, column (A), line 11e)		0
b	Total fundraising expenses (Part IX, column (D), line 25) ▶0		
17	Other expenses (Part IX, column (A), lines 11a–11d, 11f–24e)	37,145	51,603
18	Total expenses Add lines 13–17 (must equal Part IX, column (A), line 25)	37,145	51,603
19	Revenue less expenses Subtract line 18 from line 12	9,975	13,914

		Beginning of Current Year	End of Year
20	Total assets (Part X, line 16)	67,070	1,260,305
21	Total liabilities (Part X, line 26)	22,679	1,202,000
22	Net assets or fund balances Subtract line 21 from line 20	44,391	58,305

Part II Signature Block

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete Declaration of preparer (other than officer) is based on all information of which preparer has any knowledge

Sign Here

****** | 2013-10-19
Signature of officer | Date

SCOTT CAMPBELL Treasurer
Type or print name and title

Paid Preparer Use Only

Print/Type preparer's name	Preparer's signature	Date	Check ☐ if self-employed	PTIN
FABIO VASCO				P00332485
Firm's name ▶ GTL LLP			Firm's EIN ▶	
Firm's address ▶ 12800 RIVERSIDE DR 3RD FL STUDIO CITY, CA 916073331			Phone no (818) 509-0066	

May the IRS discuss this return with the preparer shown above? (see instructions) ☑ Yes ☐ No

Part III **Statement of Program Service Accomplishments**

Check if Schedule O contains a response to any question in this Part III . . . . . ☐

1 Briefly describe the organization's mission

THE ORGANIZATION WAS APPROVED TO RECEIVE $2,000,000 FROM CRA/LA TO COMPLETE THE CEQA/NEPA ENVIRONMENTAL DOCUMENTS FOR THE PARK THE LOS ANGELES CITY COUNCIL APPROVED THE EXPENDITURE BY MOTION AND UNANIMOUS VOTE IN NOVEMBER 2011 UNFORTUNATELY THE CALIFORNIA STATE SUPREME COURT DISBANDED REDEVELOPMENT AGENCIES WITH THEIR 12/27/11 RULING AND THE FUNDING AGREEMENT WAS SUBSEQUENTLY CANCELLED, ADVOCATED ON BEHALF OF THE ORGANIZATION WITH THE US DEPARTMENT OF TRANSPORTATION AND METRO REGARDING FEDERAL HIGHWAY INFRASTRUCTURE FUNDING, PARTNERED WITH LABOE, METRO AND LA COUNCIL DISTRICTS 4 & 13 REGARDING FUNDING AND DESIGN POST EIR/EIS, CONTINUED PARTNERSHIP WITH CITY PARKS ALLIANCE, A NATIONAL ORGANIZATION LOCATED IN WASHINGTON, DC TO UTILIZE HOLLYWOOD CENTRAL PARK AS A NATIONAL MODEL IN CREATING A REGIONAL PARK IN A DENSE URBAN ENVIRONMENT, LAUNCHED INTERACTIVE WEBSITE WITH RELEVANT INFORMATION FOR STAKEHOLDERS AND GOVERNMENT AGENCIES (HTTP //HOLLYWOODCENTRALPARK ORG), TO KEEP THE COMMUNITY I

2 Did the organization undertake any significant program services during the year which were not listed on the prior Form 990 or 990-EZ? . . . . . ☐ Yes ☑ No

If "Yes," describe these new services on Schedule O

3 Did the organization cease conducting, or make significant changes in how it conducts, any program services? . . . . . ☐ Yes ☑ No

If "Yes," describe these changes on Schedule O

4 Describe the organization's program service accomplishments for each of its three largest program services, as measured by expenses Section 501(c)(3) and 501(c)(4) organizations are required to report the amount of grants and allocations to others, the total expenses, and revenue, if any, for each program service reported

4a (Code) (Expenses $ 41,820 including grants of $) (Revenue $)

THE HOLLYWOOD CENTRAL PARK IS A LANDMARK INFRASTRUCTURE PROJECT THAT WILL CREATE MORE THAN 40,000 DIRECT AND INDIRECT JOBS OVER 10 YEARS, PROVIDE ECONOMIC STIMULUS AND LONG TERM ECONOMIC SECURITY, PROVIDE HEALTHY COMMUNITIES AND PROVIDE CHILDREN WITH OPEN GREEN SPACE IN WHICH TO GROW AND THRIVE THE HOLLYWOOD CENTRAL PARK WILL TRANSFORM HOLLYWOOD'S DISADVANTAGED COMMUNITIES INTO THRIVING ECONOMIC ENGINES AND IS AN INVESTMENT IN OUR CHILDREN, OUR COMMUNITY AND OUR FUTURE

4b (Code) (Expenses $ including grants of $) (Revenue $)

IN ACCORDANCE WITH US GAAP CONTRIBUTION OF SERVICES ARE RECOGNIZED IF THE SERVICES RECEIVED (a) CREATE OR ENHANCE NONFINANCIAL ASSETS OR (b) REQUIRE SPECIALIZED SKILLS THAT ARE PROVIDED BY INDIVIDUALS POSSESSING THOSE SKILLS, AND (c) THE SERVICES AND COSTS WOULD TYPICALLY NEED TO BE PURCHASED IF NOT PROVIDED BY DONATION CONTRIBUTED SERVICES THAT DO NOT MEET THE CRITERIA ARE NOT RECOGNIZED FHCP RECEIVES A SIGNIFICANT AMOUNT OF DONATED SERVICES FROM UNPAID PROFESSIONAL VOLUNTEERS WHO ASSIST IN CARRYING OUT THE ORGANIZATION'S PROGRAM SERVICES SEE SCH D AND SCH O FOR DETAIL

4c (Code) (Expenses $ including grants of $) (Revenue $)

4d Other program services (Describe in Schedule O)

(Expenses $ including grants of $) (Revenue $)

4e **Total program service expenses** ▶ 41,820

Part IV Checklist of Required Schedules

			Yes	No
1	Is the organization described in section 501(c)(3) or 4947(a)(1) (other than a private foundation)? *If "Yes," complete Schedule A*	1	Yes	
2	Is the organization required to complete *Schedule B, Schedule of Contributors* (see instructions)?	2	Yes	
3	Did the organization engage in direct or indirect political campaign activities on behalf of or in opposition to candidates for public office? *If "Yes," complete Schedule C, Part I*	3		No
4	**Section 501(c)(3) organizations.** Did the organization engage in lobbying activities, or have a section 501(h) election in effect during the tax year? *If "Yes," complete Schedule C, Part II*	4		No
5	Is the organization a section 501(c)(4), 501(c)(5), or 501(c)(6) organization that receives membership dues, assessments, or similar amounts as defined in Revenue Procedure 98-19? *If "Yes," complete Schedule C, Part III*	5		No
6	Did the organization maintain any donor advised funds or any similar funds or accounts for which donors have the right to provide advice on the distribution or investment of amounts in such funds or accounts? *If "Yes," complete Schedule D, Part I*	6		No
7	Did the organization receive or hold a conservation easement, including easements to preserve open space, the environment, historic land areas, or historic structures? *If "Yes," complete Schedule D, Part II*	7		No
8	Did the organization maintain collections of works of art, historical treasures, or other similar assets? *If "Yes," complete Schedule D, Part III*	8		No
9	Did the organization report an amount in Part X, line 21 for escrow or custodial account liability, serve as a custodian for amounts not listed in Part X, or provide credit counseling, debt management, credit repair, or debt negotiation services? *If "Yes," complete Schedule D, Part IV*	9		No
10	Did the organization, directly or through a related organization, hold assets in temporarily restricted endowments, permanent endowments, or quasi-endowments? *If "Yes," complete Schedule D, Part V*	10		No
11	If the organization's answer to any of the following questions is "Yes," then complete Schedule D, Parts VI, VII, VIII, IX, or X as applicable			
a	Did the organization report an amount for land, buildings, and equipment in Part X, line 10? *If "Yes," complete Schedule D, Part VI.*	11a		No
b	Did the organization report an amount for investments—other securities in Part X, line 12 that is 5% or more of its total assets reported in Part X, line 16? *If "Yes," complete Schedule D, Part VII*	11b		No
c	Did the organization report an amount for investments—program related in Part X, line 13 that is 5% or more of its total assets reported in Part X, line 16? *If "Yes," complete Schedule D, Part VIII*	11c		No
d	Did the organization report an amount for other assets in Part X, line 15 that is 5% or more of its total assets reported in Part X, line 16? *If "Yes," complete Schedule D, Part IX*	11d		No
e	Did the organization report an amount for other liabilities in Part X, line 25? *If "Yes," complete Schedule D, Part X*	11e		No
f	Did the organization's separate or consolidated financial statements for the tax year include a footnote that addresses the organization's liability for uncertain tax positions under FIN 48 (ASC 740)? *If "Yes," complete Schedule D, Part X*	11f		No
12a	Did the organization obtain separate, independent audited financial statements for the tax year? *If "Yes," complete Schedule D, Parts XI and XII*	12a	Yes	
b	Was the organization included in consolidated, independent audited financial statements for the tax year? *If "Yes," and if the organization answered "No" to line 12a, then completing Schedule D, Parts XI and XII is optional*	12b		No
13	Is the organization a school described in section 170(b)(1)(A)(ii)? *If "Yes," complete Schedule E*	13		No
14a	Did the organization maintain an office, employees, or agents outside of the United States?	14a		No
b	Did the organization have aggregate revenues or expenses of more than $10,000 from grantmaking, fundraising, business, investment, and program service activities outside the United States, or aggregate foreign investments valued at $100,000 or more? *If "Yes," complete Schedule F, Parts I and IV*	14b		No
15	Did the organization report on Part IX, column (A), line 3, more than $5,000 of grants or assistance to any organization or entity located outside the United States? *If "Yes," complete Schedule F, Parts II and IV*	15		No
16	Did the organization report on Part IX, column (A), line 3, more than $5,000 of aggregate grants or assistance to individuals located outside the United States? *If "Yes," complete Schedule F, Parts III and IV*	16		No
17	Did the organization report a total of more than $15,000 of expenses for professional fundraising services on Part IX, column (A), lines 6 and 11e? *If "Yes," complete Schedule G, Part I (see instructions)*	17		No
18	Did the organization report more than $15,000 total of fundraising event gross income and contributions on Part VIII, lines 1c and 8a? *If "Yes," complete Schedule G, Part II*	18	Yes	
19	Did the organization report more than $15,000 of gross income from gaming activities on Part VIII, line 9a? *If "Yes," complete Schedule G, Part III*	19		No
20a	Did the organization operate one or more hospital facilities? *If "Yes," complete Schedule H*	20a		No
b	If "Yes" to line 20a, did the organization attach a copy of its audited financial statements to this return?	20b		

Part IV Checklist of Required Schedules *(continued)*

21	Did the organization report more than $5,000 of grants and other assistance to any government or organization in the United States on Part IX, column (A), line 1? *If "Yes," complete Schedule I, Parts I and II*	**21**		No
22	Did the organization report more than $5,000 of grants and other assistance to individuals in the United States on Part IX, column (A), line 2? *If "Yes," complete Schedule I, Parts I and III*	**22**		No
23	Did the organization answer "Yes" to Part VII, Section A, line 3, 4, or 5 about compensation of the organization's current and former officers, directors, trustees, key employees, and highest compensated employees? *If "Yes," complete Schedule J*	**23**		No
24a	Did the organization have a tax-exempt bond issue with an outstanding principal amount of more than $100,000 as of the last day of the year, that was issued after December 31, 2002? *If "Yes," answer lines 24b through 24d and complete Schedule K. If "No," go to line 25*	**24a**		No
b	Did the organization invest any proceeds of tax-exempt bonds beyond a temporary period exception?	**24b**		No
c	Did the organization maintain an escrow account other than a refunding escrow at any time during the year to defease any tax-exempt bonds?	**24c**		No
d	Did the organization act as an "on behalf of" issuer for bonds outstanding at any time during the year?	**24d**		No
25a	**Section 501(c)(3) and 501(c)(4) organizations.** Did the organization engage in an excess benefit transaction with a disqualified person during the year? *If "Yes," complete Schedule L, Part I*	**25a**		No
b	Is the organization aware that it engaged in an excess benefit transaction with a disqualified person in a prior year, and that the transaction has not been reported on any of the organization's prior Forms 990 or 990-EZ? *If "Yes," complete Schedule L, Part I*	**25b**		No
26	Was a loan to or by a current or former officer, director, trustee, key employee, highest compensated employee, or disqualified person outstanding as of the end of the organization's tax year? *If "Yes," complete Schedule L, Part II*	**26**		No
27	Did the organization provide a grant or other assistance to an officer, director, trustee, key employee, substantial contributor or employee thereof, a grant selection committee member, or to a 35% controlled entity or family member of any of these persons? *If "Yes," complete Schedule L, Part III*	**27**		No
28	Was the organization a party to a business transaction with one of the following parties (see Schedule L, Part IV instructions for applicable filing thresholds, conditions, and exceptions)			
a	A current or former officer, director, trustee, or key employee? *If "Yes," complete Schedule L, Part IV*	**28a**		No
b	A family member of a current or former officer, director, trustee, or key employee? *If "Yes," complete Schedule L, Part IV*	**28b**		No
c	An entity of which a current or former officer, director, trustee, or key employee (or a family member thereof) was an officer, director, trustee, or direct or indirect owner? *If "Yes," complete Schedule L, Part IV*	**28c**		No
29	Did the organization receive more than $25,000 in non-cash contributions? *If "Yes," complete Schedule M*	**29**		No
30	Did the organization receive contributions of art, historical treasures, or other similar assets, or qualified conservation contributions? *If "Yes," complete Schedule M*	**30**		No
31	Did the organization liquidate, terminate, or dissolve and cease operations? *If "Yes," complete Schedule N, Part I*	**31**		No
32	Did the organization sell, exchange, dispose of, or transfer more than 25% of its net assets? *If "Yes," complete Schedule N, Part II*	**32**		No
33	Did the organization own 100% of an entity disregarded as separate from the organization under Regulations sections 301 7701-2 and 301 7701-3? *If "Yes," complete Schedule R, Part I*	**33**		No
34	Was the organization related to any tax-exempt or taxable entity? *If "Yes," complete Schedule R, Part II, III, or IV, and Part V, line 1*	**34**		No
35a	Did the organization have a controlled entity within the meaning of section 512(b)(13)?	**35a**		No
b	If 'Yes' to line 35a, did the organization receive any payment from or engage in any transaction with a controlled entity within the meaning of section 512(b)(13)? *If "Yes," complete Schedule R, Part V, line 2*	**35b**		No
36	**Section 501(c)(3) organizations.** Did the organization make any transfers to an exempt non-charitable related organization? *If "Yes," complete Schedule R, Part V, line 2*	**36**		No
37	Did the organization conduct more than 5% of its activities through an entity that is not a related organization and that is treated as a partnership for federal income tax purposes? *If "Yes," complete Schedule R, Part VI*	**37**		No
38	Did the organization complete Schedule O and provide explanations in Schedule O for Part VI, lines 11b and 19? **Note.** All Form 990 filers are required to complete Schedule O	**38**	Yes	

Part V Statements Regarding Other IRS Filings and Tax Compliance

Check if Schedule O contains a response to any question in this Part V . . . . . ☐

				Yes	No
1a	Enter the number reported in Box 3 of Form 1096 Enter -0- if not applicable . .	1a	0		
b	Enter the number of Forms W-2G included in line 1a *Enter -0-* if not applicable	1b	0		
c	Did the organization comply with backup withholding rules for reportable payments to vendors and reportable gaming (gambling) winnings to prize winners?	1c			No
2a	Enter the number of employees reported on Form W-3, Transmittal of Wage and Tax Statements, filed for the calendar year ending with or within the year covered by this return	2a	0		
b	If at least one is reported on line 2a, did the organization file all required federal employment tax returns? **Note.** If the sum of lines 1a and 2a is greater than 250, you may be required to e-file (see instructions)	2b			No
3a	Did the organization have unrelated business gross income of $1,000 or more during the year? . . .	3a			No
b	If "Yes," has it filed a Form 990-T for this year? *If "No," provide an explanation in Schedule O*	3b			No
4a	At any time during the calendar year, did the organization have an interest in, or a signature or other authority over, a financial account in a foreign country (such as a bank account, securities account, or other financial account)?	4a			No
b	If "Yes," enter the name of the foreign country ▶ _____ See instructions for filing requirements for Form TD F 90-22 1, Report of Foreign Bank and Financial Accounts				
5a	Was the organization a party to a prohibited tax shelter transaction at any time during the tax year? . .	5a			No
b	Did any taxable party notify the organization that it was or is a party to a prohibited tax shelter transaction?	5b			No
c	If "Yes," to line 5a or 5b, did the organization file Form 8886-T?	5c			
6a	Does the organization have annual gross receipts that are normally greater than $100,000, and did the organization solicit any contributions that were not tax deductible as charitable contributions? . . .	6a			No
b	If "Yes," did the organization include with every solicitation an express statement that such contributions or gifts were not tax deductible?	6b			
7	**Organizations that may receive deductible contributions under section 170(c).**				
a	Did the organization receive a payment in excess of $75 made partly as a contribution and partly for goods and services provided to the payor?	7a			No
b	If "Yes," did the organization notify the donor of the value of the goods or services provided?	7b			
c	Did the organization sell, exchange, or otherwise dispose of tangible personal property for which it was required to file Form 8282?	7c			No
d	If "Yes," indicate the number of Forms 8282 filed during the year	7d	0		
e	Did the organization receive any funds, directly or indirectly, to pay premiums on a personal benefit contract?	7e			No
f	Did the organization, during the year, pay premiums, directly or indirectly, on a personal benefit contract? . .	7f			No
g	If the organization received a contribution of qualified intellectual property, did the organization file Form 8899 as required?	7g			No
h	If the organization received a contribution of cars, boats, airplanes, or other vehicles, did the organization file a Form 1098-C?	7h			No
8	**Sponsoring organizations maintaining donor advised funds and section 509(a)(3) supporting organizations.** Did the supporting organization, or a donor advised fund maintained by a sponsoring organization, have excess business holdings at any time during the year?	8			No
9	**Sponsoring organizations maintaining donor advised funds.**				
a	Did the organization make any taxable distributions under section 4966?	9a			No
b	Did the organization make a distribution to a donor, donor advisor, or related person?	9b			No
10	**Section 501(c)(7) organizations.** Enter				
a	Initiation fees and capital contributions included on Part VIII, line 12 . . .	10a			
b	Gross receipts, included on Form 990, Part VIII, line 12, for public use of club facilities	10b			
11	**Section 501(c)(12) organizations.** Enter				
a	Gross income from members or shareholders	11a			
b	Gross income from other sources (Do not net amounts due or paid to other sources against amounts due or received from them)	11b			
12a	**Section 4947(a)(1) non-exempt charitable trusts.** Is the organization filing Form 990 in lieu of Form 1041?	12a			No
b	If "Yes," enter the amount of tax-exempt interest received or accrued during the year	12b			
13	**Section 501(c)(29) qualified nonprofit health insurance issuers.**				
a	Is the organization licensed to issue qualified health plans in more than one state? **Note.** See the instructions for additional information the organization must report on Schedule O	13a			No
b	Enter the amount of reserves the organization is required to maintain by the states in which the organization is licensed to issue qualified health plans	13b			
c	Enter the amount of reserves on hand	13c			
14a	Did the organization receive any payments for indoor tanning services during the tax year?	14a			No
b	If "Yes," has it filed a Form 720 to report these payments? *If "No," provide an explanation in Schedule O* . .	14b			

Part VI **Governance, Management, and Disclosure** *For each "Yes" response to lines 2 through 7b below, and for a "No" response to lines 8a, 8b, or 10b below, describe the circumstances, processes, or changes in Schedule O. See instructions.*

Check if Schedule O contains a response to any question in this Part VI . . . . . ☑

Section A. Governing Body and Management

				Yes	No
1a	Enter the number of voting members of the governing body at the end of the tax year	**1a**	34		
	If there are material differences in voting rights among members of the governing body, or if the governing body delegated broad authority to an executive committee or similar committee, explain in Schedule O				
b	Enter the number of voting members included in line 1a, above, who are independent	**1b**	34		
2	Did any officer, director, trustee, or key employee have a family relationship or a business relationship with any other officer, director, trustee, or key employee?	**2**		Yes	
3	Did the organization delegate control over management duties customarily performed by or under the direct supervision of officers, directors or trustees, or key employees to a management company or other person? .	**3**			No
4	Did the organization make any significant changes to its governing documents since the prior Form 990 was filed?	**4**			No
5	Did the organization become aware during the year of a significant diversion of the organization's assets? .	**5**			No
6	Did the organization have members or stockholders?	**6**			No
7a	Did the organization have members, stockholders, or other persons who had the power to elect or appoint one or more members of the governing body?	**7a**			No
b	Are any governance decisions of the organization reserved to (or subject to approval by) members, stockholders, or persons other than the governing body?	**7b**			No
8	Did the organization contemporaneously document the meetings held or written actions undertaken during the year by the following				
a	The governing body?	**8a**		Yes	
b	Each committee with authority to act on behalf of the governing body?	**8b**		Yes	
9	Is there any officer, director, trustee, or key employee listed in Part VII, Section A, who cannot be reached at the organization's mailing address? *If "Yes," provide the names and addresses in Schedule O*	**9**			No

Section B. Policies (*This Section B requests information about policies not required by the Internal Revenue Code.*)

			Yes	No
10a	Did the organization have local chapters, branches, or affiliates?	**10a**		No
b	If "Yes," did the organization have written policies and procedures governing the activities of such chapters, affiliates, and branches to ensure their operations are consistent with the organization's exempt purposes?	**10b**		
11a	Has the organization provided a complete copy of this Form 990 to all members of its governing body before filing the form?	**11a**	Yes	
b	Describe in Schedule O the process, if any, used by the organization to review this Form 990			
12a	Did the organization have a written conflict of interest policy? *If "No," go to line 13*	**12a**	Yes	
b	Were officers, directors, or trustees, and key employees required to disclose annually interests that could give rise to conflicts?	**12b**	Yes	
c	Did the organization regularly and consistently monitor and enforce compliance with the policy? *If "Yes," describe in Schedule O how this was done*	**12c**	Yes	
13	Did the organization have a written whistleblower policy?	**13**		No
14	Did the organization have a written document retention and destruction policy?	**14**		No
15	Did the process for determining compensation of the following persons include a review and approval by independent persons, comparability data, and contemporaneous substantiation of the deliberation and decision?			
a	The organization's CEO, Executive Director, or top management official	**15a**		No
b	Other officers or key employees of the organization	**15b**		No
	If "Yes" to line 15a or 15b, describe the process in Schedule O (see instructions)			
16a	Did the organization invest in, contribute assets to, or participate in a joint venture or similar arrangement with a taxable entity during the year?	**16a**		No
b	If "Yes," did the organization follow a written policy or procedure requiring the organization to evaluate its participation in joint venture arrangements under applicable federal tax law, and take steps to safeguard the organization's exempt status with respect to such arrangements?	**16b**		

Section C. Disclosure

17 List the States with which a copy of this Form 990 is required to be filed ▶ CA

18 Section 6104 requires an organization to make its Form 1023 (or 1024 if applicable), 990, and 990-T (501(c)(3)s only) available for public inspection Indicate how you made these available Check all that apply

☐ Own website ☐ Another's website ☑ Upon request ☐ Other (explain in Schedule O)

19 Describe in Schedule O whether (and if so, how), the organization made its governing documents, conflict of interest policy, and financial statements available to the public during the tax year

20 State the name, physical address, and telephone number of the person who possesses the books and records of the organization

▶ LAURIE GOLDMAN 1680 N VINE ST STE 1000 HOLLYWOOD, CA (323) 466-3875

Part VII Compensation of Officers, Directors,Trustees, Key Employees, Highest Compensated Employees, and Independent Contractors

Check if Schedule O contains a response to any question in this Part VII . . . . . ☐

Section A. Officers, Directors, Trustees, Key Employees, and Highest Compensated Employees

1a Complete this table for all persons required to be listed Report compensation for the calendar year ending with or within the organization's tax year

- List all of the organization's **current** officers, directors, trustees (whether individuals or organizations), regardless of amount of compensation Enter -0- in columns (D), (E), and (F) if no compensation was paid
- List all of the organization's **current** key employees, if any See instructions for definition of "key employee "
- List the organization's five **current** highest compensated employees (other than an officer, director, trustee or key employee) who received reportable compensation (Box 5 of Form W-2 and/or Box 7 of Form 1099-MISC) of more than $100,000 from the organization and any related organizations
- List all of the organization's **former** officers, key employees, or highest compensated employees who received more than $100,000 of reportable compensation from the organization and any related organizations
- List all of the organization's **former directors or trustees** that received, in the capacity as a former director or trustee of the organization, more than $10,000 of reportable compensation from the organization and any related organizations

List persons in the following order individual trustees or directors, institutional trustees, officers, key employees, highest compensated employees, and former such persons

☑ Check this box if neither the organization nor any related organization compensated any current officer, director, or trustee

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W- 2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional Trustee	Officer	Key employee	Highest compensated employee	Former			
See Additional Data Table										

Part VII **Section A. Officers, Directors, Trustees, Key Employees, and Highest Compensated Employees** *(continued)*

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional Trustee	Officer	Key employee	Highest compensated employee	Former			
1b **Sub-Total** ▶										
c **Total from continuation sheets to Part VII, Section A** ▶										
d **Total (add lines 1b and 1c)** ▶										

2 Total number of individuals (including but not limited to those listed above) who received more than $100,000 of reportable compensation from the organization ▶0

			Yes	No
3	Did the organization list any **former** officer, director or trustee, key employee, or highest compensated employee on line 1a? *If "Yes," complete Schedule J for such individual*	**3**		No
4	For any individual listed on line 1a, is the sum of reportable compensation and other compensation from the organization and related organizations greater than $150,000? *If "Yes," complete Schedule J for such individual*	**4**		No
5	Did any person listed on line 1a receive or accrue compensation from any unrelated organization or individual for services rendered to the organization? *If "Yes," complete Schedule J for such person*	**5**		No

Section B. Independent Contractors

1 Complete this table for your five highest compensated independent contractors that received more than $100,000 of compensation from the organization Report compensation for the calendar year ending with or within the organization's tax year

(A) Name and business address	(B) Description of services	(C) Compensation

2 Total number of independent contractors (including but not limited to those listed above) who received more than $100,000 of compensation from the organization ▶0

Part VIII Statement of Revenue

Check if Schedule O contains a response to any question in this Part VIII . . . . . ☐

			(A) Total revenue	(B) Related or exempt function revenue	(C) Unrelated business revenue	(D) Revenue excluded from tax under sections 512, 513, or 514
Contributions, Gifts, Grants and Other Similar Amounts	1a Federated campaigns . .	1a				
	b Membership dues	1b				
	c Fundraising events	1c				
	d Related organizations . . .	1d				
	e Government grants (contributions)	1e				
	f All other contributions, gifts, grants, and similar amounts not included above	1f	3,382			
	g Noncash contributions included in lines 1a-1f $					
	h **Total.** Add lines 1a-1f . . . . . ▶		3,382			
Program Service Revenue		Business Code				
	2a					
	b					
	c					
	d					
	e					
	f All other program service revenue					
	g **Total.** Add lines 2a–2f . . . . . ▶		0			
	3 Investment income (including dividends, interest, and other similar amounts) . . . . . ▶		1,212	1,212		
	4 Income from investment of tax-exempt bond proceeds . . ▶		0			
	5 Royalties . . . . . ▶		0			
		(i) Real / (ii) Personal				
	6a Gross rents					
	b Less rental expenses					
	c Rental income or (loss)					
	d Net rental income or (loss) . . . . . ▶		0			
		(i) Securities / (ii) Other				
	7a Gross amount from sales of assets other than inventory					
	b Less cost or other basis and sales expenses					
	c Gain or (loss)					
	d Net gain or (loss) . . . . . ▶		0			
Other Revenue	8a Gross income from fundraising events (not including $ _____ of contributions reported on line 1c) See Part IV, line 18 . .	a 153,074				
	b Less direct expenses . . .	b 92,151				
	c Net income or (loss) from fundraising events . . ▶		60,923			60,923
	9a Gross income from gaming activities See Part IV, line 19 . . .	a				
	b Less direct expenses . . .	b				
	c Net income or (loss) from gaming activities . . ▶		0			
	10a Gross sales of inventory, less returns and allowances .	a				
	b Less cost of goods sold . .	b				
	c Net income or (loss) from sales of inventory . . ▶		0			
	Miscellaneous Revenue	Business Code				
	11a					
	b					
	c					
	d All other revenue					
	e **Total.** Add lines 11a–11d . . . . . ▶		0			
	12 **Total revenue.** See Instructions . . . . . ▶		65,517	1,212		60,923

Part IX Statement of Functional Expenses

Section 501(c)(3) and 501(c)(4) organizations must complete all columns All other organizations must complete column (A)

Check if Schedule O contains a response to any question in this Part IX . . . . . ☐

Do not include amounts reported on lines 6b, 7b, 8b, 9b, and 10b of Part VIII.	(A) Total expenses	(B) Program service expenses	(C) Management and general expenses	(D) Fundraising expenses
1 Grants and other assistance to governments and organizations in the United States See Part IV, line 21	0			
2 Grants and other assistance to individuals in the United States See Part IV, line 22	0			
3 Grants and other assistance to governments, organizations, and individuals outside the United States See Part IV, lines 15 and 16	0			
4 Benefits paid to or for members	0			
5 Compensation of current officers, directors, trustees, and key employees	0			
6 Compensation not included above, to disqualified persons (as defined under section 4958(f)(1)) and persons described in section 4958(c)(3)(B)	0			
7 Other salaries and wages	0			
8 Pension plan accruals and contributions (include section 401(k) and 403(b) employer contributions)	0			
9 Other employee benefits	0			
10 Payroll taxes	0			
11 Fees for services (non-employees)				
a Management	0			
b Legal	0			
c Accounting	2,800		2,800	
d Lobbying	0			
e Professional fundraising services See Part IV, line 17	0			
f Investment management fees	0			
g Other (If line 11g amount exceeds 10% of line 25, column (A) amount, list line 11g expenses on Schedule O)	0			
12 Advertising and promotion	0			
13 Office expenses	398		398	
14 Information technology	6,346	6,346		
15 Royalties	0			
16 Occupancy	0			
17 Travel	0			
18 Payments of travel or entertainment expenses for any federal, state, or local public officials	0			
19 Conferences, conventions, and meetings	8,724	8,724		
20 Interest	0			
21 Payments to affiliates	0			
22 Depreciation, depletion, and amortization	0			
23 Insurance	0			
24 Other expenses Itemize expenses not covered above (List miscellaneous expenses in line 24e If line 24e amount exceeds 10% of line 25, column (A) amount, list line 24e expenses on Schedule O)				
a COMMUNITY OUTREACH	820		820	
b EDUCATION	1,571		1,571	
c BOARD MEETINGS	4,042		4,042	
d BAD DEBT	26,750	26,750		
e All other expenses	152		152	
25 **Total functional expenses.** Add lines 1 through 24e	51,603	41,820	9,783	0
26 **Joint costs.** Complete this line only if the organization reported in column (B) joint costs from a combined educational campaign and fundraising solicitation Check here ▶ ☐ if following SOP 98-2 (ASC 958-720)				

Part X Balance Sheet

Check if Schedule O contains a response to any question in this Part X . . . . . ☐

			(A) Beginning of year		(B) End of year
Assets	1	Cash—non-interest-bearing	14,951	1	197,090
	2	Savings and temporary cash investments	1,004	2	1,027,215
	3	Pledges and grants receivable, net	48,615	3	36,000
	4	Accounts receivable, net	2,500	4	0
	5	Loans and other receivables from current and former officers, directors, trustees, key employees, and highest compensated employees Complete Part II of Schedule L		5	0
	6	Loans and other receivables from other disqualified persons (as defined under section 4958(f)(1)), persons described in section 4958(c)(3)(B), and contributing employers and sponsoring organizations of section 501(c)(9) voluntary employees' beneficiary organizations (see instructions) Complete Part II of Schedule L		6	0
	7	Notes and loans receivable, net		7	0
	8	Inventories for sale or use		8	0
	9	Prepaid expenses and deferred charges		9	0
	10a	Land, buildings, and equipment cost or other basis Complete Part VI of Schedule D — 10a			
	b	Less accumulated depreciation — 10b		10c	0
	11	Investments—publicly traded securities		11	0
	12	Investments—other securities See Part IV, line 11		12	0
	13	Investments—program-related See Part IV, line 11		13	0
	14	Intangible assets		14	0
	15	Other assets See Part IV, line 11		15	0
	16	**Total assets.** Add lines 1 through 15 (must equal line 34)	67,070	16	1,260,305
Liabilities	17	Accounts payable and accrued expenses	22,679	17	2,000
	18	Grants payable		18	
	19	Deferred revenue		19	1,200,000
	20	Tax-exempt bond liabilities		20	
	21	Escrow or custodial account liability Complete Part IV of Schedule D		21	
	22	Loans and other payables to current and former officers, directors, trustees, key employees, highest compensated employees, and disqualified persons Complete Part II of Schedule L		22	
	23	Secured mortgages and notes payable to unrelated third parties		23	
	24	Unsecured notes and loans payable to unrelated third parties		24	
	25	Other liabilities (including federal income tax, payables to related third parties, and other liabilities not included on lines 17-24) Complete Part X of Schedule D		25	
	26	**Total liabilities.** Add lines 17 through 25	22,679	26	1,202,000
Net Assets or Fund Balances		**Organizations that follow SFAS 117 (ASC 958), check here ▶ ☐ and complete lines 27 through 29, and lines 33 and 34.**			
	27	Unrestricted net assets		27	
	28	Temporarily restricted net assets		28	
	29	Permanently restricted net assets		29	
		Organizations that do not follow SFAS 117 (ASC 958), check here ▶ ☑ and complete lines 30 through 34.			
	30	Capital stock or trust principal, or current funds		30	
	31	Paid-in or capital surplus, or land, building or equipment fund		31	
	32	Retained earnings, endowment, accumulated income, or other funds	44,391	32	58,305
	33	Total net assets or fund balances	44,391	33	58,305
	34	Total liabilities and net assets/fund balances	67,070	34	1,260,305

Part XI Reconcilliation of Net Assets

Check if Schedule O contains a response to any question in this Part XI . . . . . ☐

1	Total revenue (must equal Part VIII, column (A), line 12)	1	65,517
2	Total expenses (must equal Part IX, column (A), line 25)	2	51,603
3	Revenue less expenses Subtract line 2 from line 1	3	13,914
4	Net assets or fund balances at beginning of year (must equal Part X, line 33, column (A))	4	44,391
5	Net unrealized gains (losses) on investments	5	
6	Donated services and use of facilities	6	
7	Investment expenses	7	
8	Prior period adjustments	8	
9	Other changes in net assets or fund balances (explain in Schedule O)	9	
10	Net assets or fund balances at end of year Combine lines 3 through 9 (must equal Part X, line 33, column (B))	10	58,305

Part XII Financial Statements and Reporting

Check if Schedule O contains a response to any question in this Part XII . . . . . ☐

			Yes	No
1	Accounting method used to prepare the Form 990 ☐ Cash ☑ Accrual ☐ Other _____ If the organization changed its method of accounting from a prior year or checked "Other," explain in Schedule O			
2a	Were the organization's financial statements compiled or reviewed by an independent accountant?	2a	Yes	
	If 'Yes,' check a box below to indicate whether the financial statements for the year were compiled or reviewed on a separate basis, consolidated basis, or both ☑ Separate basis ☐ Consolidated basis ☐ Both consolidated and separate basis			
b	Were the organization's financial statements audited by an independent accountant?	2b		No
	If 'Yes,' check a box below to indicate whether the financial statements for the year were audited on a separate basis, consolidated basis, or both ☐ Separate basis ☐ Consolidated basis ☐ Both consolidated and separate basis			
c	If "Yes," to line 2a or 2b, does the organization have a committee that assumes responsibility for oversight of the audit, review, or compilation of its financial statements and selection of an independent accountant?	2c	Yes	
	If the organization changed either its oversight process or selection process during the tax year, explain in Schedule O			
3a	As a result of a federal award, was the organization required to undergo an audit or audits as set forth in the Single Audit Act and OMB Circular A-133?	3a		No
b	If "Yes," did the organization undergo the required audit or audits? If the organization did not undergo the required audit or audits, explain why in Schedule O and describe any steps taken to undergo such audits	3b		

Additional Data

Software ID: 12000229
Software Version: 2012v2.0
EIN: 26-4236328
Name: FRIENDS OF THE HOLLYWOOD CAP PARK

Form 990, Part VII - Compensation of Officers, Directors,Trustees, Key Employees, Highest Compensated Employees, and Independent Contractors

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional Trustee	Officer	Key employee	Highest compensated employee	Former			
AILEEN GETTY BOARD MEMBER	1 00 0 00							0	0	0
KATE FOLB BOARD MEMBER	5 00 0 00							0	0	0
DREW COLQUITT BOARD MEMBER	1 00 0 00							0	0	0
TRICIA LA BELLE BOARD MEMBER	1 00 0 00							0	0	0
SCOTT RYNDERS BOARD MEMBER	8 00 0 00							0	0	0
JOHN GOODWIN BOARD MEMBER	7 00 0 00							0	0	0
BRADLEY GLENN BOARD MEMBER	1 00 0 00							0	0	0
ALMA BOGDAN-TURNER BOARD MEMBER	1 00 0 00							0	0	0
HELMI HISSERICH BOARD MEMBER	1 00 0 00							0	0	0
CHRIS BARTON BOARD MEMBER	1 00 0 00							0	0	0
CHRISTI VAN CLEVE BOARD MEMBER	1 00 0 00							0	0	0
TOM TRYIN BOARD MEMBER	1 00 0 00							0	0	0
THADDEUS SMITH BOARD MEMBER	3 00 0 00							0	0	0
NICOLE SHAHENIAN BOARD MEMBER	3 00 0 00							0	0	0
SUSAN POLIFRONIO BOARD MEMBER	4 00 0 00							0	0	0
JEROLD NEUMAN BOARD MEMBER	3 00 0 00							0	0	0
JACOB LIPA BOARD MEMBER	11 00 0 00							0	0	0
ED HUNT BOARD MEMBER	4 00 0 00							0	0	0
ALFREDO HERNANDEZ BOARD MEMBER	17 00 0 00							0	0	0
PHILIP HART BOARD MEMBER	1 00 0 00							0	0	0
CHERYL GASKILL BOARD MEMBER	16 00 0 00							0	0	0
DAVID GAJDA BOARD MEMBER	1 00 0 00							0	0	0
BRIAN FOLB BOARD MEMBER	5 00 0 00							0	0	0
BETTY FRASER BOARD MEMBER	1 00 0 00							0	0	0
HEATHER COCHRAN BOARD MEMBER	1 00 0 00							0	0	0

Form 990, Part VII - Compensation of Officers, Directors,Trustees, Key Employees, Highest Compensated Employees, and Independent Contractors

(A) Name and Title	(B) Average hours per week (list any hours for related organizations below dotted line)	(C) Position (do not check more than one box, unless person is both an officer and a director/trustee)						(D) Reportable compensation from the organization (W-2/1099-MISC)	(E) Reportable compensation from related organizations (W-2/1099-MISC)	(F) Estimated amount of other compensation from the organization and related organizations
		Individual trustee or director	Institutional Trustee	Officer	Key employee	Highest compensated employee	Former			
SCOTT CAMPBELL BOARD MEMBER	4 00 0 00							0	0	0
DOUG CAMPBELL BOARD MEMBER	1 00 0 00							0	0	0
GEORGE ABOU-DAOUD BOARD MEMBER	1 00 0 00							0	0	0
JEFF BRIGGS COUNSEL	1 00 0 00			X				0	0	0
DAVID EADS Secretary	4 00 0 00			X				0	0	0
TERRI GERGER Treasurer	19 00 0 00			X				0	0	0
ALFRED FRAIJO Vice President	15 00 0 00			X				0	0	0
LAURIE GOLDMAN President	40 00 0 00			X				0	0	0
PHIL AARONS Chairman	6 00 0 00			X				0	0	0

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SCHEDULE A (Form 990 or 990EZ)

Department of the Treasury
Internal Revenue Service

Public Charity Status and Public Support

Complete if the organization is a section 501(c)(3) organization or a section 4947(a)(1) nonexempt charitable trust.

▶ **Attach to Form 990 or Form 990-EZ.** ▶ **See separate instructions.**

OMB No 1545-0047

2012

Open to Public Inspection

Name of the organization
FRIENDS OF THE HOLLYWOOD CAP PARK

Employer identification number
26-4236328

Part I Reason for Public Charity Status (All organizations must complete this part.) See instructions.

The organization is not a private foundation because it is (For lines 1 through 11, check only one box)

1 ☐ A church, convention of churches, or association of churches described in **section 170(b)(1)(A)(i).**

2 ☐ A school described in **section 170(b)(1)(A)(ii).** (Attach Schedule E)

3 ☐ A hospital or a cooperative hospital service organization described in **section 170(b)(1)(A)(iii).**

4 ☐ A medical research organization operated in conjunction with a hospital described in **section 170(b)(1)(A)(iii).** Enter the hospital's name, city, and state _____

5 ☐ An organization operated for the benefit of a college or university owned or operated by a governmental unit described in **section 170(b)(1)(A)(iv).** (Complete Part II)

6 ☐ A federal, state, or local government or governmental unit described in **section 170(b)(1)(A)(v).**

7 ☑ An organization that normally receives a substantial part of its support from a governmental unit or from the general public described in **section 170(b)(1)(A)(vi).** (Complete Part II)

8 ☐ A community trust described in **section 170(b)(1)(A)(vi)** (Complete Part II)

9 ☐ An organization that normally receives (1) more than 33 1/3% of its support from contributions, membership fees, and gross receipts from activities related to its exempt functions—subject to certain exceptions, and (2) no more than 33 1/3% of its support from gross investment income and unrelated business taxable income (less section 511 tax) from businesses acquired by the organization after June 30, 1975 See **section 509(a)(2).** (Complete Part III)

10 ☐ An organization organized and operated exclusively to test for public safety See **section 509(a)(4).**

11 ☐ An organization organized and operated exclusively for the benefit of, to perform the functions of, or to carry out the purposes of one or more publicly supported organizations described in section 509(a)(1) or section 509(a)(2) See **section 509(a)(3).** Check the box that describes the type of supporting organization and complete lines 11e through 11h

a ☐ Type I **b** ☐ Type II **c** ☐ Type III - Functionally integrated **d** ☐ Type III - Non-functionally integrated

e ☐ By checking this box, I certify that the organization is not controlled directly or indirectly by one or more disqualified persons other than foundation managers and other than one or more publicly supported organizations described in section 509(a)(1) or section 509(a)(2)

f If the organization received a written determination from the IRS that it is a Type I, Type II, or Type III supporting organization, check this box ☐

g Since August 17, 2006, has the organization accepted any gift or contribution from any of the following persons?

		Yes	No
(i) A person who directly or indirectly controls, either alone or together with persons described in (ii) and (iii) below, the governing body of the supported organization?	**11g(i)**		
(ii) A family member of a person described in (i) above?	**11g(ii)**		
(iii) A 35% controlled entity of a person described in (i) or (ii) above?	**11g(iii)**		

h Provide the following information about the supported organization(s)

(i) Name of supported organization	(ii) EIN	(iii) Type of organization (described on lines 1 - 9 above or IRC section (see instructions))	(iv) Is the organization in col (i) listed in your governing document?		(v) Did you notify the organization in col (i) of your support?		(vi) Is the organization in col (i) organized in the U S ?		(vii) Amount of monetary support
			Yes	No	Yes	No	Yes	No	
Total									

Part II **Support Schedule for Organizations Described in Sections 170(b)(1)(A)(iv) and 170(b)(1)(A)(vi)**
(Complete only if you checked the box on line 5, 7, or 8 of Part I or if the organization failed to qualify under Part III. If the organization fails to qualify under the tests listed below, please complete Part III.)

Section A. Public Support

Calendar year (or fiscal year beginning in) ▶	(a) 2008	(b) 2009	(c) 2010	(d) 2011	(e) 2012	(f) Total
1 Gifts, grants, contributions, and membership fees received (Do not include any "unusual grants ")		23,299	94,970	8,678	3,382	130,329
2 Tax revenues levied for the organization's benefit and either paid to or expended on its behalf						0
3 The value of services or facilities furnished by a governmental unit to the organization without charge						0
4 **Total.** Add lines 1 through 3		23,299	94,970	8,678	3,382	130,329
5 The portion of total contributions by each person (other than a governmental unit or publicly supported organization) included on line 1 that exceeds 2% of the amount shown on line 11, column (f)						0
6 **Public support.** Subtract line 5 from line 4						130,329

Section B. Total Support

Calendar year (or fiscal year beginning in) ▶	(a) 2008	(b) 2009	(c) 2010	(d) 2011	(e) 2012	(f) Total
7 Amounts from line 4		23,299	94,970	8,678	3,382	130,329
8 Gross income from interest, dividends, payments received on securities loans, rents, royalties and income from similar sources		1	2	5	1,212	1,220
9 Net income from unrelated business activities, whether or not the business is regularly carried on						0
10 Other income Do not include gain or loss from the sale of capital assets (Explain in Part IV)				38,437	60,923	99,360
11 **Total support** (Add lines 7 through 10)						230,909

12 Gross receipts from related activities, etc (see instructions) **12**

13 **First five years.** If the Form 990 is for the organization's first, second, third, fourth, or fifth tax year as a 501(c)(3) organization, check this box and **stop here** . . . . . ▶ ☑

Section C. Computation of Public Support Percentage

14 Public support percentage for 2012 (line 6, column (f) divided by line 11, column (f))	**14**	0 %
15 Public support percentage for 2011 Schedule A, Part II, line 14	**15**	

16a **33 1/3% support test—2012.** If the organization did not check the box on line 13, and line 14 is 33 1/3% or more, check this box and **stop here.** The organization qualifies as a publicly supported organization ▶ ☐

b **33 1/3% support test—2011.** If the organization did not check a box on line 13 or 16a, and line 15 is 33 1/3% or more, check this box and **stop here.** The organization qualifies as a publicly supported organization ▶ ☐

17a **10%-facts-and-circumstances test—2012.** If the organization did not check a box on line 13, 16a, or 16b, and line 14 is 10% or more, and if the organization meets the "facts-and-circumstances" test, check this box and **stop here.** Explain in Part IV how the organization meets the "facts-and-circumstances" test The organization qualifies as a publicly supported organization ▶ ☐

b **10%-facts-and-circumstances test—2011.** If the organization did not check a box on line 13, 16a, 16b, or 17a, and line 15 is 10% or more, and if the organization meets the "facts-and-circumstances" test, check this box and **stop here.** Explain in Part IV how the organization meets the "facts-and-circumstances" test The organization qualifies as a publicly supported organization ▶ ☐

18 **Private foundation.** If the organization did not check a box on line 13, 16a, 16b, 17a, or 17b, check this box and see instructions ▶ ☐

Part III **Support Schedule for Organizations Described in Section 509(a)(2)**
(Complete only if you checked the box on line 9 of Part I or if the organization failed to qualify under Part II. If the organization fails to qualify under the tests listed below, please complete Part II.)

Section A. Public Support

Calendar year (or fiscal year beginning in) ▶	(a) 2008	(b) 2009	(c) 2010	(d) 2011	(e) 2012	(f) Total
1 Gifts, grants, contributions, and membership fees received (Do not include any "unusual grants ")						
2 Gross receipts from admissions, merchandise sold or services performed, or facilities furnished in any activity that is related to the organization's tax-exempt purpose						
3 Gross receipts from activities that are not an unrelated trade or business under section 513						
4 Tax revenues levied for the organization's benefit and either paid to or expended on its behalf						
5 The value of services or facilities furnished by a governmental unit to the organization without charge						
6 **Total.** Add lines 1 through 5						
7a Amounts included on lines 1, 2, and 3 received from disqualified persons						
b Amounts included on lines 2 and 3 received from other than disqualified persons that exceed the greater of $5,000 or 1% of the amount on line 13 for the year						
c Add lines 7a and 7b						
8 **Public support** (Subtract line 7c from line 6)						

Section B. Total Support

Calendar year (or fiscal year beginning in) ▶	(a) 2008	(b) 2009	(c) 2010	(d) 2011	(e) 2012	(f) Total
9 Amounts from line 6						
10a Gross income from interest, dividends, payments received on securities loans, rents, royalties and income from similar sources						
b Unrelated business taxable income (less section 511 taxes) from businesses acquired after June 30, 1975						
c Add lines 10a and 10b						
11 Net income from unrelated business activities not included in line 10b, whether or not the business is regularly carried on						
12 Other income Do not include gain or loss from the sale of capital assets (Explain in Part IV)						
13 **Total support.** (Add lines 9, 10c, 11, and 12)						

14 **First five years.** If the Form 990 is for the organization's first, second, third, fourth, or fifth tax year as a 501(c)(3) organization, check this box and **stop here** ▶☐

Section C. Computation of Public Support Percentage

15	Public support percentage for 2012 (line 8, column (f) divided by line 13, column (f))	15	
16	Public support percentage from 2011 Schedule A, Part III, line 15	16	

Section D. Computation of Investment Income Percentage

17	Investment income percentage for **2012** (line 10c, column (f) divided by line 13, column (f))	17	
18	Investment income percentage from **2011** Schedule A, Part III, line 17	18	

19a **33 1/3% support tests—2012.** If the organization did not check the box on line 14, and line 15 is more than 33 1/3%, and line 17 is not more than 33 1/3%, check this box and **stop here.** The organization qualifies as a publicly supported organization ▶☐

b **33 1/3% support tests—2011.** If the organization did not check a box on line 14 or line 19a, and line 16 is more than 33 1/3% and line 18 is not more than 33 1/3%, check this box and **stop here.** The organization qualifies as a publicly supported organization ▶☐

20 **Private foundation.** If the organization did not check a box on line 14, 19a, or 19b, check this box and see instructions ▶☐

Part IV **Supplemental Information.** Complete this part to provide the explanations required by Part II, line 10; Part II, line 17a or 17b; and Part III, line 12. Also complete this part for any additional information. (See instructions).

Facts And Circumstances Test

Explanation

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SCHEDULE D (Form 990)

Department of the Treasury
Internal Revenue Service

Supplemental Financial Statements

▶ Complete if the organization answered "Yes," to Form 990, Part IV, line 6, 7, 8, 9, 10, 11a, 11b, 11c, 11d, 11e, 11f, 12a, or 12b
▶ Attach to Form 990. ▶ See separate instructions.

OMB No 1545-0047

2012

Open to Public Inspection

Name of the organization
FRIENDS OF THE HOLLYWOOD CAP PARK

Employer identification number
26-4236328

Part I Organizations Maintaining Donor Advised Funds or Other Similar Funds or Accounts. Complete if the organization answered "Yes" to Form 990, Part IV, line 6.

		(a) Donor advised funds	(b) Funds and other accounts
1	Total number at end of year		
2	Aggregate contributions to (during year)		
3	Aggregate grants from (during year)		
4	Aggregate value at end of year		

5 Did the organization inform all donors and donor advisors in writing that the assets held in donor advised funds are the organization's property, subject to the organization's exclusive legal control? ☐ Yes ☐ No

6 Did the organization inform all grantees, donors, and donor advisors in writing that grant funds can be used only for charitable purposes and not for the benefit of the donor or donor advisor, or for any other purpose conferring impermissible private benefit? ☐ Yes ☐ No

Part II Conservation Easements. Complete if the organization answered "Yes" to Form 990, Part IV, line 7.

1 Purpose(s) of conservation easements held by the organization (check all that apply)
☐ Preservation of land for public use (e g , recreation or education) ☐ Preservation of an historically important land area
☐ Protection of natural habitat ☐ Preservation of a certified historic structure
☐ Preservation of open space

2 Complete lines 2a through 2d if the organization held a qualified conservation contribution in the form of a conservation easement on the last day of the tax year

		Held at the End of the Year
a	Total number of conservation easements	2a
b	Total acreage restricted by conservation easements	2b
c	Number of conservation easements on a certified historic structure included in (a)	2c
d	Number of conservation easements included in (c) acquired after 8/17/06, and not on a historic structure listed in the National Register	2d

3 Number of conservation easements modified, transferred, released, extinguished, or terminated by the organization during the tax year ▶ _____

4 Number of states where property subject to conservation easement is located ▶ _____

5 Does the organization have a written policy regarding the periodic monitoring, inspection, handling of violations, and enforcement of the conservation easements it holds? ☐ Yes ☐ No

6 Staff and volunteer hours devoted to monitoring, inspecting, and enforcing conservation easements during the year ▶ _____

7 Amount of expenses incurred in monitoring, inspecting, and enforcing conservation easements during the year ▶ $ _____

8 Does each conservation easement reported on line 2(d) above satisfy the requirements of section 170(h)(4)(B)(i) and section 170(h)(4)(B)(ii)? ☐ Yes ☐ No

9 In Part XIII, describe how the organization reports conservation easements in its revenue and expense statement, and balance sheet, and include, if applicable, the text of the footnote to the organization's financial statements that describes the organization's accounting for conservation easements

Part III Organizations Maintaining Collections of Art, Historical Treasures, or Other Similar Assets. Complete if the organization answered "Yes" to Form 990, Part IV, line 8.

1a If the organization elected, as permitted under SFAS 116 (ASC 958), not to report in its revenue statement and balance sheet works of art, historical treasures, or other similar assets held for public exhibition, education, or research in furtherance of public service, provide, in Part XIII, the text of the footnote to its financial statements that describes these items

b If the organization elected, as permitted under SFAS 116 (ASC 958), to report in its revenue statement and balance sheet works of art, historical treasures, or other similar assets held for public exhibition, education, or research in furtherance of public service, provide the following amounts relating to these items

(i) Revenues included in Form 990, Part VIII, line 1 ▶ $ _____

(ii) Assets included in Form 990, Part X ▶ $ _____

2 If the organization received or held works of art, historical treasures, or other similar assets for financial gain, provide the following amounts required to be reported under SFAS 116 (ASC 958) relating to these items

a Revenues included in Form 990, Part VIII, line 1 ▶ $ _____

b Assets included in Form 990, Part X ▶ $ _____

Part III Organizations Maintaining Collections of Art, Historical Treasures, or Other Similar Assets *(continued)*

3 Using the organization's acquisition, accession, and other records, check any of the following that are a significant use of its collection items (check all that apply)

- a ☐ Public exhibition
- b ☐ Scholarly research
- c ☐ Preservation for future generations
- d ☐ Loan or exchange programs
- e ☐ Other

4 Provide a description of the organization's collections and explain how they further the organization's exempt purpose in Part XIII

5 During the year, did the organization solicit or receive donations of art, historical treasures or other similar assets to be sold to raise funds rather than to be maintained as part of the organization's collection? ☐ Yes ☐ No

Part IV Escrow and Custodial Arrangements. Complete if the organization answered "Yes" to Form 990, Part IV, line 9, or reported an amount on Form 990, Part X, line 21.

1a Is the organization an agent, trustee, custodian or other intermediary for contributions or other assets not included on Form 990, Part X? ☐ Yes ☐ No

b If "Yes," explain the arrangement in Part XIII and complete the following table

		Amount
c Beginning balance	1c	
d Additions during the year	1d	
e Distributions during the year	1e	
f Ending balance	1f	

2a Did the organization include an amount on Form 990, Part X, line 21? ☐ Yes ☐ No

b If "Yes," explain the arrangement in Part XIII Check here if the explanation has been provided in Part XIII . . . . . ☐

Part V Endowment Funds. Complete if the organization answered "Yes" to Form 990, Part IV, line 10.

	(a) Current year	(b) Prior year	(c) Two years back	(d) Three years back	(e) Four years back
1a Beginning of year balance					
b Contributions					
c Net investment earnings, gains, and losses					
d Grants or scholarships					
e Other expenditures for facilities and programs					
f Administrative expenses					
g End of year balance					

2 Provide the estimated percentage of the current year end balance (line 1g, column (a)) held as

- a Board designated or quasi-endowment ▶
- b Permanent endowment ▶
- c Temporarily restricted endowment ▶

The percentages in lines 2a, 2b, and 2c should equal 100%

3a Are there endowment funds not in the possession of the organization that are held and administered for the organization by

		Yes	No
(i) unrelated organizations	3a(i)		
(ii) related organizations	3a(ii)		
b If "Yes" to 3a(ii), are the related organizations listed as required on Schedule R?	3b		

4 Describe in Part XIII the intended uses of the organization's endowment funds

Part VI Land, Buildings, and Equipment. See Form 990, Part X, line 10.

Description of property	(a) Cost or other basis (investment)	(b) Cost or other basis (other)	(c) Accumulated depreciation	(d) Book value
1a Land				
b Buildings				
c Leasehold improvements				
d Equipment				
e Other				
Total. Add lines 1a through 1e *(Column (d) must equal Form 990, Part X, column (B), line 10(c).)* ▶				

Part VII Investments—Other Securities. See Form 990, Part X, line 12.

(a) Description of security or category (including name of security)	(b) Book value	(c) Method of valuation Cost or end-of-year market value
(1) Financial derivatives		
(2) Closely-held equity interests		
Other		
Total. *(Column (b) must equal Form 990, Part X, col (B) line 12)* ▶		

Part VIII Investments—Program Related. See Form 990, Part X, line 13.

(a) Description of investment type	(b) Book value	(c) Method of valuation Cost or end-of-year market value
Total. *(Column (b) must equal Form 990, Part X, col (B) line 13)* ▶		

Part IX Other Assets. See Form 990, Part X, line 15.

(a) Description	(b) Book value
Total. *(Column (b) must equal Form 990, Part X, col.(B) line 15.)* . . . . . ▶	

Part X Other Liabilities. See Form 990, Part X, line 25.

1 (a) Description of liability	(b) Book value
Federal income taxes	
Total. *(Column (b) must equal Form 990, Part X, col (B) line 25)* ▶	

2. Fin 48 (ASC 740) Footnote In Part XIII, provide the text of the footnote to the organization's financial statements that reports the organization's liability for uncertain tax positions under FIN 48 (ASC 740) Check here if the text of the footnote has been provided in Part XIII ☐

Part XI Reconciliation of Revenue per Audited Financial Statements With Revenue per Return

1	Total revenue, gains, and other support per audited financial statements			1	65,517
2	Amounts included on line 1 but not on Form 990, Part VIII, line 12				
a	Net unrealized gains on investments	2a			
b	Donated services and use of facilities	2b	337,895		
c	Recoveries of prior year grants	2c			
d	Other (Describe in Part XIII)	2d			
e	Add lines **2a** through **2d**			2e	337,895
3	Subtract line **2e** from line **1**			3	-272,378
4	Amounts included on Form 990, Part VIII, line 12, but not on line **1**				
a	Investment expenses not included on Form 990, Part VIII, line 7b	4a			
b	Other (Describe in Part XIII)	4b	337,895		
c	Add lines **4a** and **4b**			4c	337,895
5	Total revenue Add lines **3** and **4c.** (This must equal Form 990, Part I, line 12)			5	65,517

Part XII Reconciliation of Expenses per Audited Financial Statements With Expenses per Return

1	Total expenses and losses per audited financial statements			1	51,603
2	Amounts included on line 1 but not on Form 990, Part IX, line 25				
a	Donated services and use of facilities	2a			
b	Prior year adjustments	2b			
c	Other losses	2c			
d	Other (Describe in Part XIII)	2d			
e	Add lines **2a** through **2d**			2e	
3	Subtract line **2e** from line **1**			3	51,603
4	Amounts included on Form 990, Part IX, line 25, but not on line **1:**				
a	Investment expenses not included on Form 990, Part VIII, line 7b	4a			
b	Other (Describe in Part XIII)	4b			
c	Add lines **4a** and **4b**			4c	
5	Total expenses Add lines **3** and **4c.** (This must equal Form 990, Part I, line 18)			5	51,603

Part XIII Supplemental Information

Complete this part to provide the descriptions required for Part II, lines 3, 5, and 9, Part III, lines 1a and 4, Part IV, lines 1b and 2b, Part V, line 4, Part X, line 2, Part XI, lines 2d and 4b, and Part XII, lines 2d and 4b Also complete this part to provide any additional information

Identifier	Return Reference	Explanation
Part XI, Line 4b	Part XI, Line 4b Other revenue amounts included on 990 but not included in F/S	DONATED SERVICES $319895 USE OF FACILITIES $18000

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SCHEDULE G (Form 990 or 990-EZ)

Department of the Treasury
Internal Revenue Service

Supplemental Information Regarding Fundraising or Gaming Activities

Complete if the organization answered "Yes" to Form 990, Part IV, lines 17, 18, or 19, or if the organization entered more than $15,000 on Form 990-EZ, line 6a. Form 990-EZ filers are not required to complete this part.

▶ **Attach to Form 990 or Form 990-EZ.** ▶ **See separate instructions.**

OMB No 1545-0047

2012

Open to Public Inspection

Name of the organization
FRIENDS OF THE HOLLYWOOD CAP PARK

Employer identification number
26-4236328

Part I Fundraising Activities. Complete if the organization answered "Yes" to Form 990, Part IV, line 17.

1 Indicate whether the organization raised funds through any of the following activities Check all that apply

a ☐ Mail solicitations
b ☐ Internet and email solicitations
c ☐ Phone solicitations
d ☐ In-person solicitations
e ☐ Solicitation of non-government grants
f ☐ Solicitation of government grants
g ☐ Special fundraising events

2a Did the organization have a written or oral agreement with any individual (including officers, directors, trustees or key employees listed in Form 990, Part VII) or entity in connection with professional fundraising services? ☐ **Yes** ☑ **No**

b If "Yes," list the ten highest paid individuals or entities (fundraisers) pursuant to agreements under which the fundraiser is to be compensated at least $5,000 by the organization

(i) Name and address of individual or entity (fundraiser)	**(ii)** Activity	**(iii)** Did fundraiser have custody or control of contributions? Yes	No	**(iv)** Gross receipts from activity	**(v)** Amount paid to (or retained by) fundraiser listed in col **(i)**	**(vi)** Amount paid to (or retained by) organization
Total . . . . . ▶						

3 List all states in which the organization is registered or licensed to solicit funds or has been notified it is exempt from registration or licensing

Part II **Fundraising Events.** Complete if the organization answered "Yes" to Form 990, Part IV, line 18, or reported more than $15,000 of fundraising event contributions and gross income on Form 990-EZ, lines 1 and 6b. List events with gross receipts greater than $5,000.

		(a) Event #1 GALA DINNER (event type)	(b) Event #2 (event type)	(c) Other events (total number)	(d) Total events (add col (a) through col (c))
Revenue	1 Gross receipts	153,074			153,074
	2 Less Contributions				
	3 Gross income (line 1 minus line 2)	153,074			153,074
Direct Expenses	4 Cash prizes				
	5 Noncash prizes				
	6 Rent/facility costs				
	7 Food and beverages	45,425			45,425
	8 Entertainment	4,000			4,000
	9 Other direct expenses	42,726			42,726
	10 Direct expense summary Add lines 4 through 9 in column (d) ▶				(92,151)
	11 Net income summary Combine line 3, column (d), and line 10 ▶				60,923

Part III **Gaming.** Complete if the organization answered "Yes" to Form 990, Part IV, line 19, or reported more than $15,000 on Form 990-EZ, line 6a.

		(a) Bingo	(b) Pull tabs/Instant bingo/progressive bingo	(c) Other gaming	(d) Total gaming (add col (a) through col (c))
Revenue	1 Gross revenue				
Direct Expenses	2 Cash prizes				
	3 Non-cash prizes				
	4 Rent/facility costs				
	5 Other direct expenses				
	6 Volunteer labor	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
	7 Direct expense summary Add lines 2 through 5 in column (d) ▶				
	8 Net gaming income summary Combine lines 1 and 7 in column (d) ▶				

9 Enter the state(s) in which the organization operates gaming activities _____

a Is the organization licensed to operate gaming activities in each of these states? ☐ Yes ☐ No

b If "No," explain _____

10a Were any of the organization's gaming licenses revoked, suspended or terminated during the tax year? ☐ Yes ☐ No

b If "Yes," explain _____

Does the organization operate gaming activities with nonmembers? . . . . . ☐ Yes ☐ No

12 Is the organization a grantor, beneficiary or trustee of a trust or a member of a partnership or other entity formed to administer charitable gaming? . . . . . ☐ Yes ☐ No

13 Indicate the percentage of gaming activity operated in

a	The organization's facility	13a	
b	An outside facility	13b	

14 Enter the name and address of the person who prepares the organization's gaming/special events books and records

Name ▶ .....

Address ▶ .....

15a Does the organization have a contract with a third party from whom the organization receives gaming revenue? . . . . . ☐ Yes ☐ No

b If "Yes," enter the amount of gaming revenue received by the organization ▶ $ _____ and the amount of gaming revenue retained by the third party ▶ $ _____

c If "Yes," enter name and address of the third party

Name ▶ .....

Address ▶ .....

16 Gaming manager information

Name ▶ .....

Gaming manager compensation ▶ $ .....

Description of services provided ▶ .....

☐ Director/officer ☐ Employee ☐ Independent contractor

17 Mandatory distributions

a Is the organization required under state law to make charitable distributions from the gaming proceeds to retain the state gaming license? . . . . . ☐ Yes ☐ No

b Enter the amount of distributions required under state law distributed to other exempt organizations or spent in the organization's own exempt activities during the tax year ▶ $

Part IV Supplemental Information. Complete this part to provide the explanations required by Part I, line 2b, columns (iii) and (v), and Part III, lines 9, 9b, 10b, 15b, 15c, 16, and 17b, as applicable. Also complete this part to provide any additional information (see instructions).

Identifier	Return Reference	Explanation

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SCHEDULE O
(Form 990 or 990-EZ)

Department of the Treasury
Internal Revenue Service

Supplemental Information to Form 990 or 990-EZ

Complete to provide information for responses to specific questions on Form 990 or to provide any additional information.
▶ Attach to Form 990 or 990-EZ.

OMB No 1545-0047

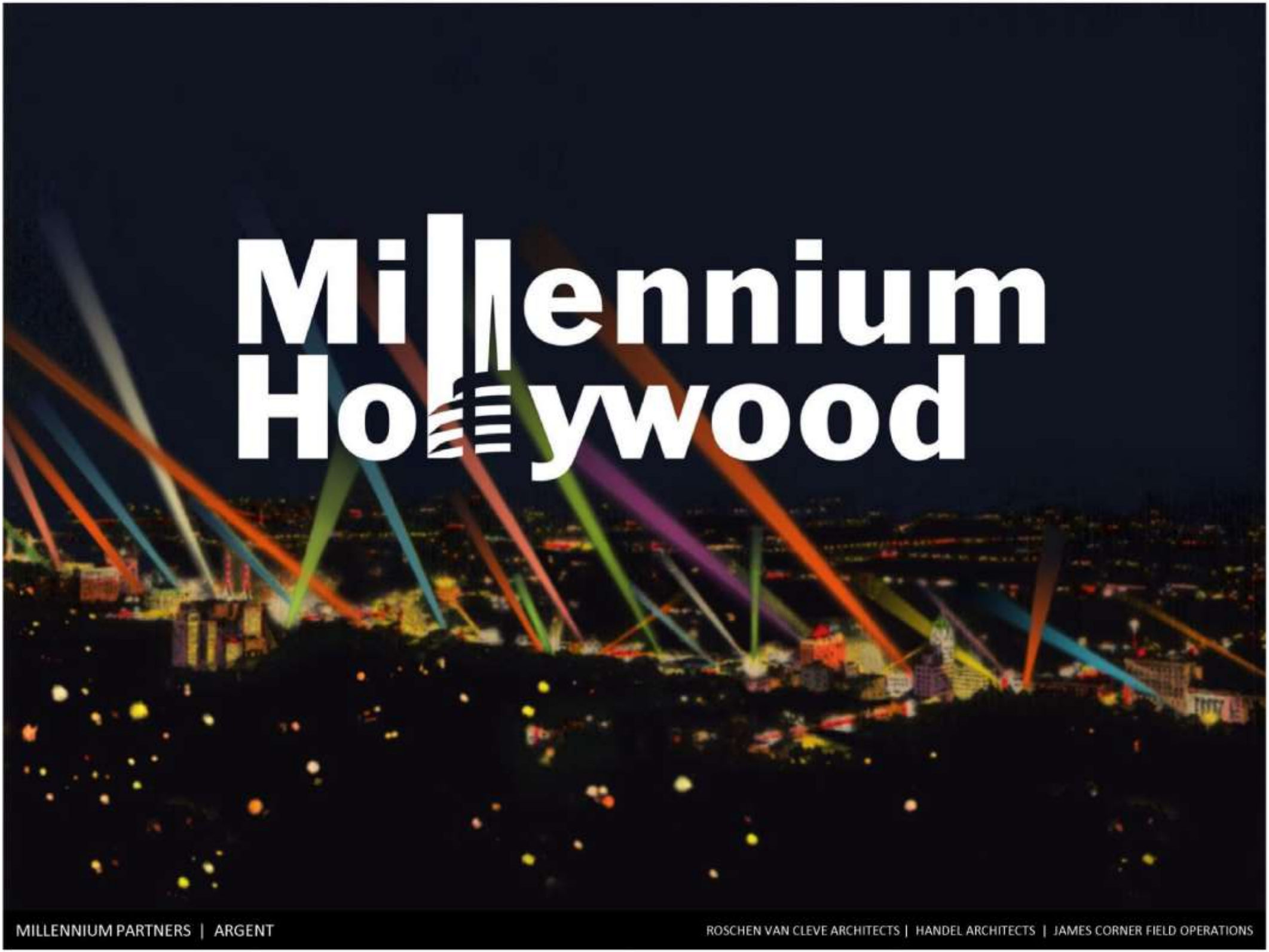
2012

Open to Public Inspection

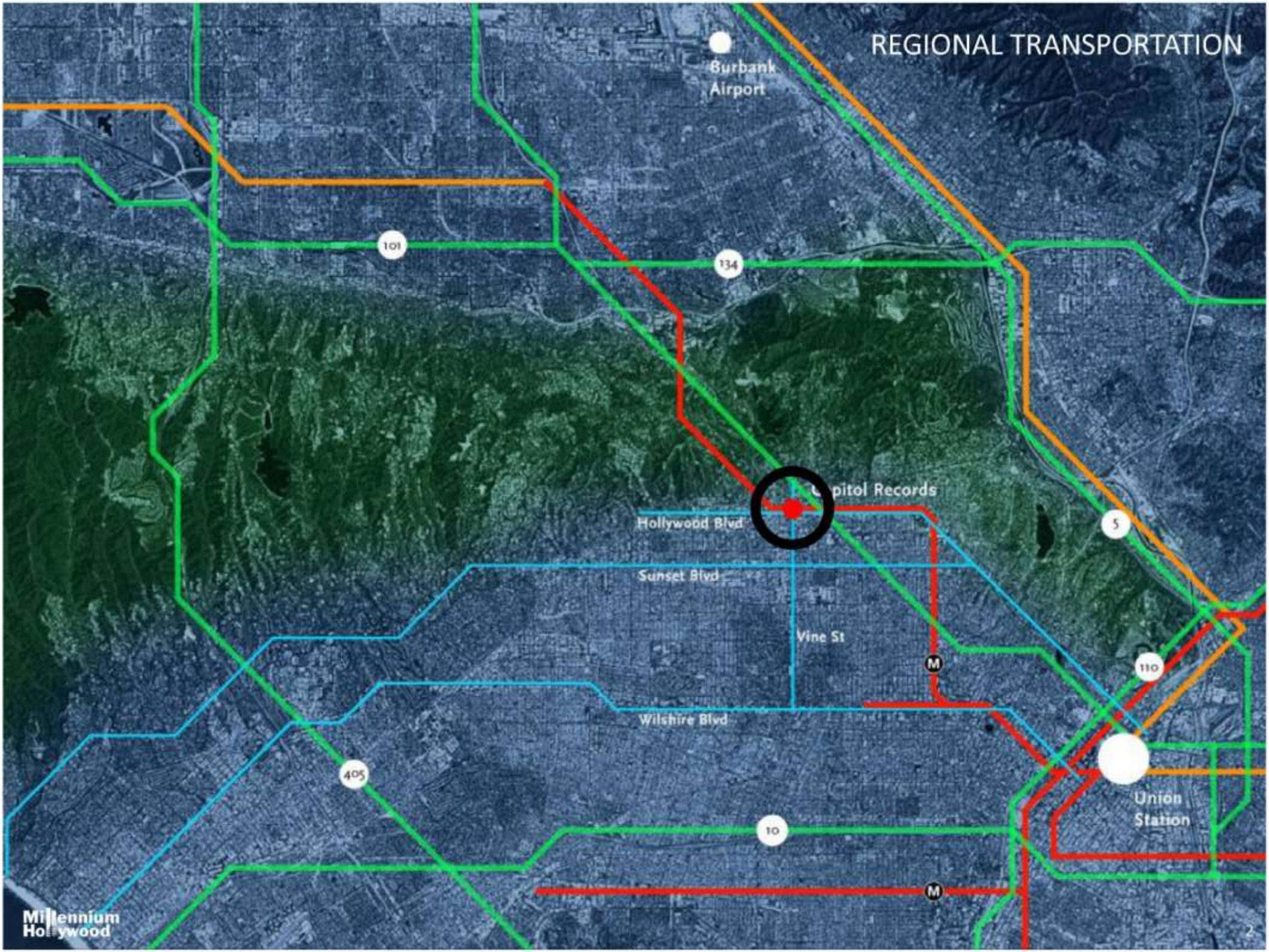
Name of the organization
FRIENDS OF THE HOLLYWOOD CAP PARK

Employer identification number
26-4236328

Identifier	Return Reference	Explanation
	SCHEDULE D - DONATED SERVICES	IN ACCORDANCE WITH US GAAP CONTRIBUTIONS OF SERVICES ARE RECOGNIZED IF THE SERVICES RECEIVED (a) CREATE OR ENHANCE NONFINANCIAL ASSETS OR (b) REQUIRE SPECIALIZED SKILLS THAT ARE PROVIDED BY INDIVIDUALS POSSESSING THOSE SKILLS, AND (c) THE SERVICES AND COSTS WOULD TYPICALLY NEED TO BE PURCHASED IF NOT PROVIDED BY DONATION CONTRIBUTED SERVICES THAT DO NOT MEET THE CRITERIA ARE NOT RECOGNIZED FHCP RECEIVES A SIGNIFICANT AMOUNT OF DONATED SERVICES FROM UNPAID PROFESSIONAL VOLUNTEERS WHO ASSIST IN CARRYING OUT THE ORGANIZATION'S PROGRAM SERVICES THE DONATED SERVICES CONTRIBUTED ARE AS FOLLOWS HOURSAARONS, CHAIRMAN 413GEORGE ABOU-DAOUD 35BARTON 25BOGDAN-TURNER 40BRIGGS, COUNSEL 45EADS, SECRETARY 198CAMPBELL, D 45CAMPBELL, S 196COCHRAN 35FRASER 49FRAIJO, VICE PRES 758FOLB, B 269GAJDA 35GASKILL 844GERGER, TREASURER 981GLENN 45GOLDMAN, PRESIDENT 2,083GOODWIN 268HART 10HERNANDEZ 897HISSERICH 10HUNT 186LA BELLE 42LIPA 597NEUMAN 143POLIFRONIO 183SHAHENIAN 165SMITH 131RYNDERS 392TRYIN 12VAN CLEVE 42COLQUITT 35FOLB, K 249GETTY 20AROSTA 7ARAK 10BELL 7BLANCHE, G 10BLANCHE, I 10CARTER 10CORDOVA 9CRETER 8FERNANDEZ 10FUKUNAGA 9GALANTE 9GATES 7HADRABA 7KNOTT 8KRAKE 8LARSON 7LEE 125MACCORA 7MARQUEZ 7MUNOZ 9MURPHY 7COLE 7RAY 5REEVE 7RODRIGUEZ 7RUSSELL 7SEMERDJIAN 7SEQUIERA 7SIGAFOOS 7TILTON 25TURNER 7WARNER 15WEHBE 10WHITE 10WONG 10YARIMYAN 10 TOTAL 9,910 @ $32 38 = $320,886
	RELATED PARTY CONTRIBUTION	THE BOARD OF DIRECTORS ON JULY 31, 2012 NEGOTIATED AND APPROVED A CONTRIBUTION FROM THE AILEEN GETTY FOUNDATION THE CONTRIBUTION WAS RECEIVED IN SEPTEMBER 2012 MS AILEEN GETTY WAS ELECTED TO THE BOARD OF DIRECTORS IN OCTOBER 2012, AND TOOK HER SEAT AS A DIRECTOR EFFECTIVE JANUARY 2013 MS AILEEN GETTY'S CONTRIBUTION PROCEEDED HER DIRECTORSHIP
Form 990, Part VI, Line 19	Form 990, Part VI, Line 19 Other Organization Documents Publicly Available	DOCUMENTS, POLICIES AND FINANCIAL STATEMENTS ARE DOWNLOADED TO GUIDE STAR ONCE TAX RETURNS ARE FILED
Form 990, Part VI, Line 12c	Form 990, Part VI, Line 12c Explanation of Monitoring and Enforcement of Conflicts	THE BOARD HAS A CONFLICT OF INTEREST POLICY AND REVIEWS ANNUALLY
Form 990, Part VI, Line 11b	Form 990, Part VI, Line 11b Form 990 Review Process	FORM EMAILED TO EXECUTIVE COMMITTEE FOR REVIEW, FOLLOWED BY AN EMAIL TO THE BOARD OF DIRECTORS
Form 990, Part VI, Line 2	Form 990, Part VI, Line 2 Description of Business or Family Relationship of Officers, Directors, Et	34 DIRECTORS HAVE BEEN DULY ELECTED TO THE BOARD OF THESE 34 DIRECTORS, 6 HAVE BUSINESS RELATIONSHIPS OUTSIDE THE SCOPE OF THE FRIENDS OF THE HOLLYWOOD CAP PARK CHAIRMAN AND DIRECTOR PHIL AARONS, FOUNDING PARTNER OF MILLENNIUM PARTNERS IS THE EMPLOYER OF DIRECTOR TOM TRYIN VICE PRESIDENT AND DIRECTOR ALFRED FRAIJO, JR AN ATTORNEY AT SHEPPARD MULLIN RICHTER AND HAMPTON, IS THE LEGAL CONSULTANT TO CHAIRMAN/DIRECTOR PHIL AARONS/MILLENNIUM PARTNERS PRESIDENT AND DIRECTOR LAURIE GOLDMAN IS A COMMUNITY RELATIONS CONSULTANT TO CHAIRMAN/DIRECTOR PHIL AARONS/MILLENNIUM PARTNERS DIRECTOR JEROLD NEUMAN AN ATTORNEY AT SHEPPARD MULLIN RICHTER AND HAMPTON, IS THE LEGAL CONSULTANT TO CHAIRMAN/DIRECTOR PHIL AARONS/MILLEMMIUM PARTNERS DIRECTOR CHRISTI VAN CLEVE IS AN ARCHITECT CONSULTANT TO DIRECTOR PHIL AARONS/MILLENNIUM PARTNERS DIRECTOR TOM TRYIN IS AN EMPLOYEE OF CHAIRMAN AND DIRECTOR PHIL AARONS/MILLENNIUM PARTNERS DIRECTOR BRIAN FOLB AND DIRECTOR KATE FOLB ARE HUSBAND AND WIFE

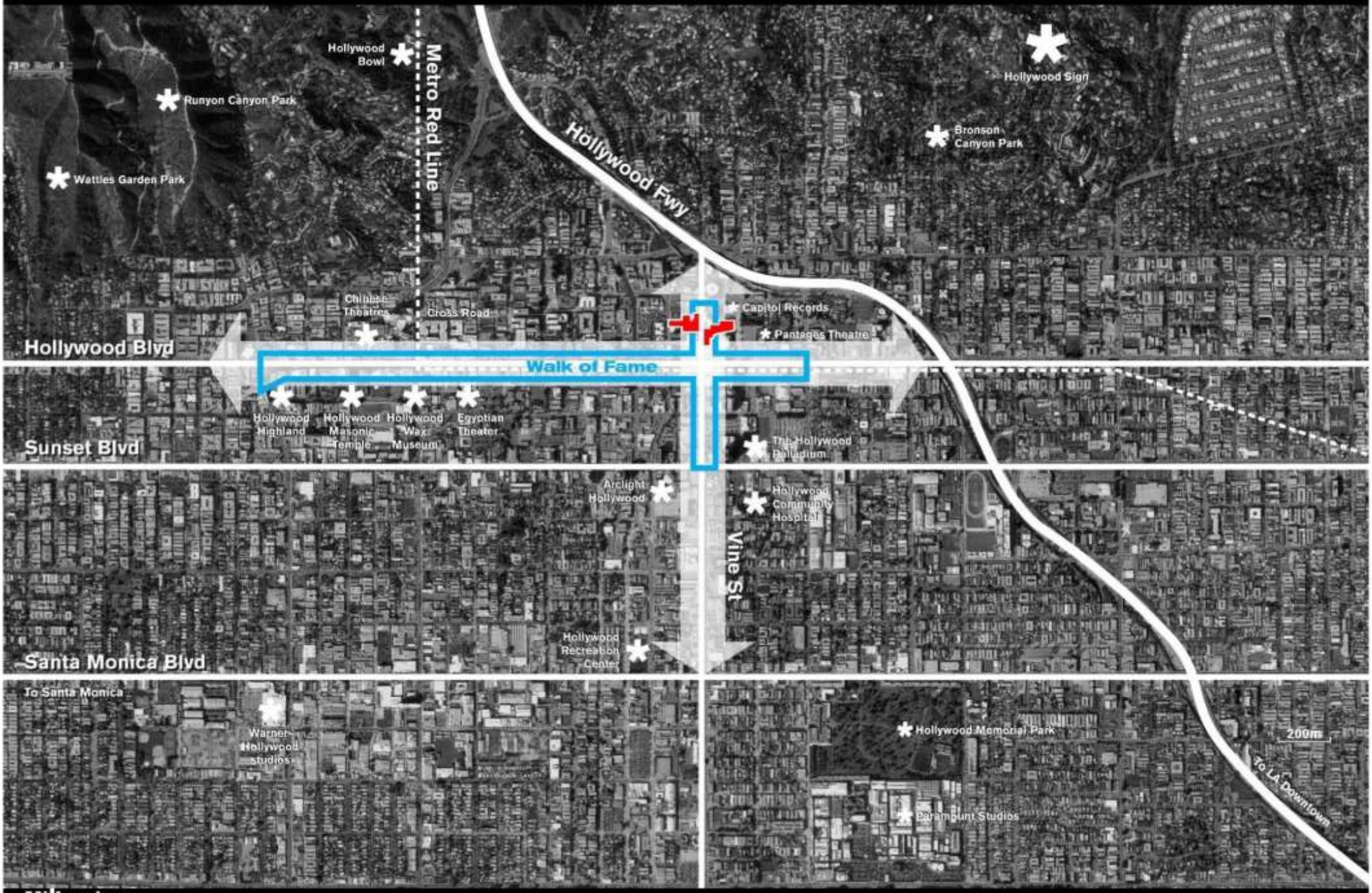

Millennium
Hollywood
MILLENNIUM PARTNERS | ARGENT
ROSCHEN VAN CLEVE ARCHITECTS | HANDEL ARCHITECTS | JAMES CORNER FIELD OPERATIONS

CO-0001-742


REGIONAL TRANSPORTATION
Burbank Airport
101
134
Capitol Records
Hollywood Blvd
Sunset Blvd
Vine St
5
M
110
Wilshire Blvd
405
10
Union Station
M
Millennium Hollywood
2

CO-0001-743

NEIGHBORHOOD CROSSROADS



CO-0001-744

CO-0001-745

HOLLYWOOD AND VINE
CAPITOL RECORDS
PANTAGES PARKING
Millennium Hollywood
5

CO-0001-746

PRESERVE SITE LINES

CO-0001-747

HOLLYWOOD TRADITIONS: BUILDINGS

CO-0001-748

HOLLYWOOD TRADITIONS: BUILDINGS

CO-0001-749

HISTORIC HOLLYWOOD OPEN SPACES
Little Country Church

CO-0001-750

HISTORIC HOLLYWOOD OPEN SPACES
Walk of Fame

CO-0001-751

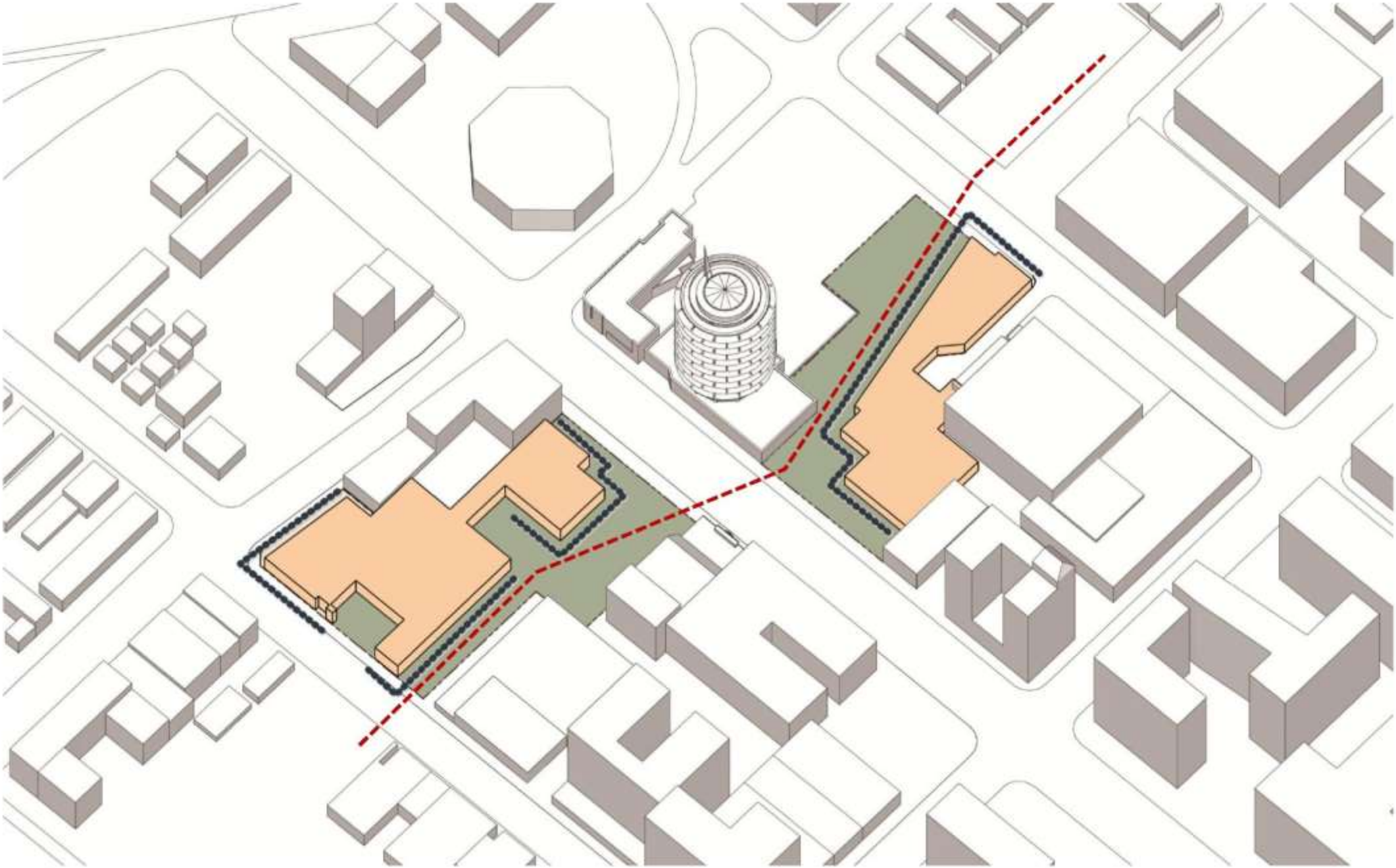
NEW COURTYARD SEQUENCE

CO-0001-752

SCALE COMPARISONS

CO-0001-753

ACTIVE GROUND FLOOR



CO-0001-754

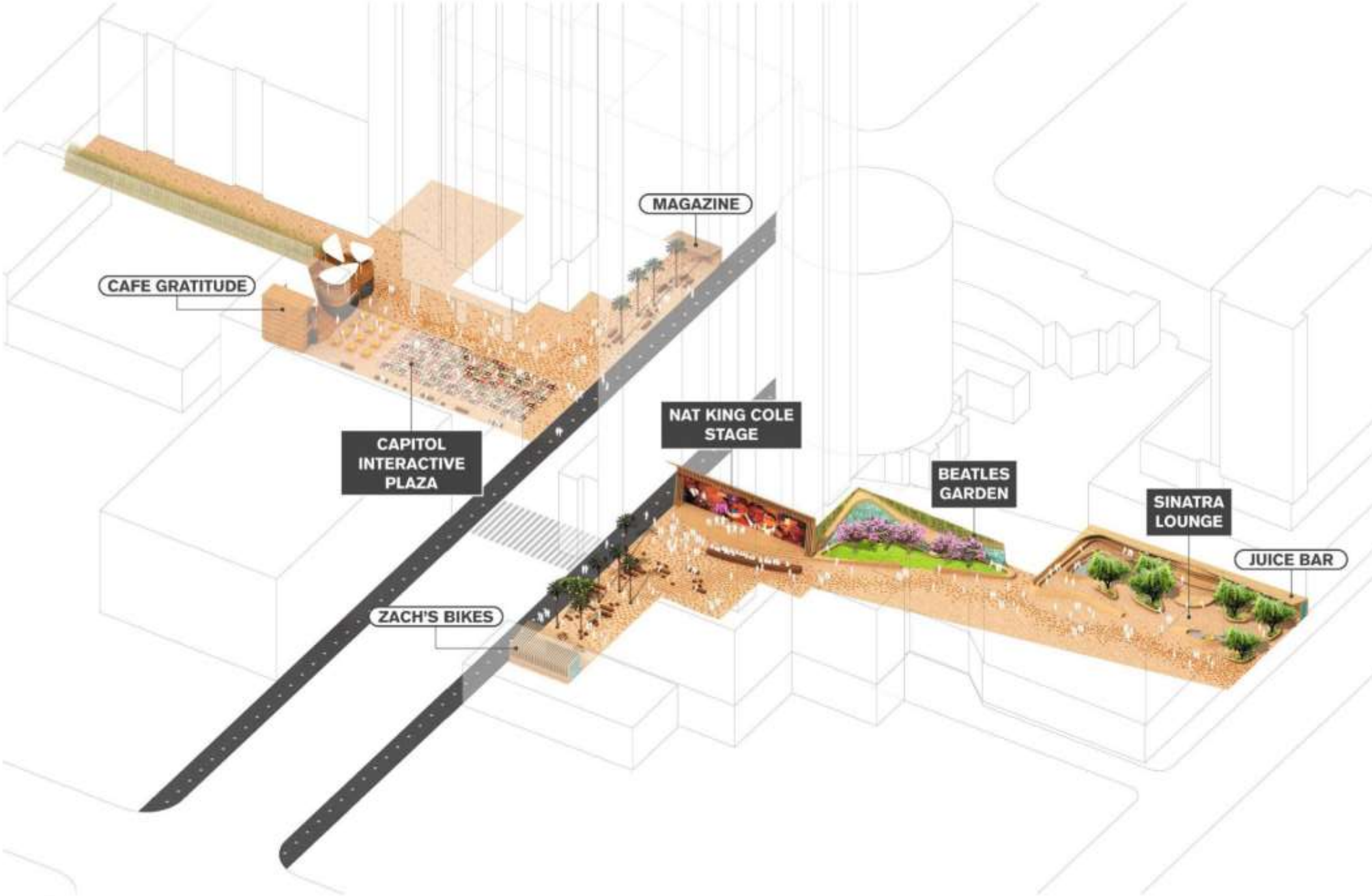
NEIGHBORHOOD OPEN SPACE AND LINKAGES

CO-0001-755

NEW PLAN

CO-0001-756

OVERALL VIEW



CO-0001-757

THE LOUNGE

Outdoor Fire Place

Outdoor Library

Lime Trees

CO-0001-758

THE LOUNGE

CO-0001-759

THE GARDEN

Water Wall

Vines

Lawn

Crape Myrtle

CO-0001-760

THE GARDEN

CO-0001-761

THE STAGE

Seating Steps

Jazz Mural Stage

King Palm

Bike Shop

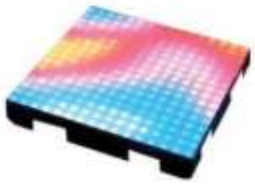
CO-0001-762

CO-0001-763

VINE BAR

THE PLAZA

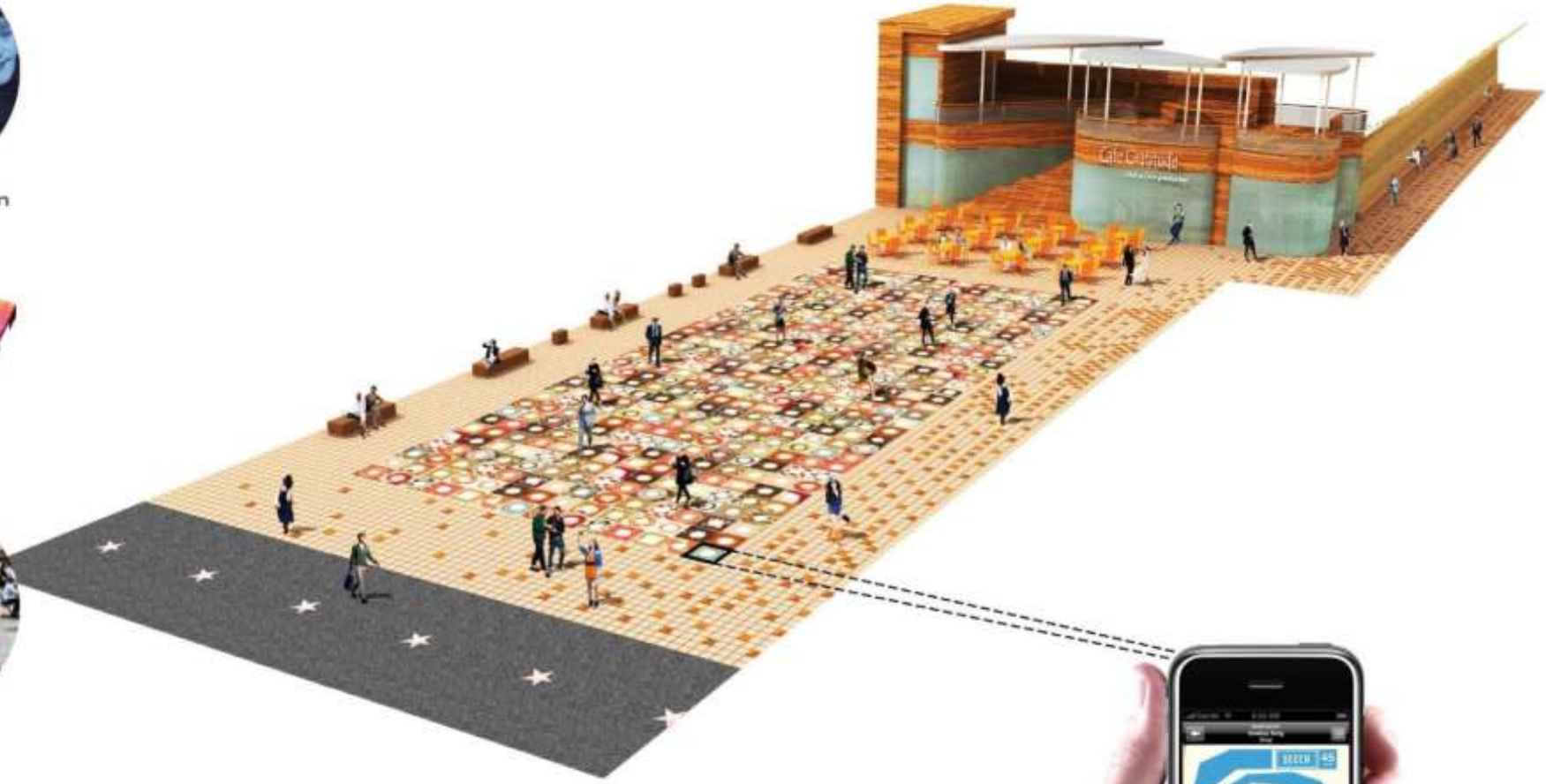
Cinema Projection



LED Paver

Rotating Events

Cafe



"Interactive Apps"

CO-0001-765

THE PLAZA

CO-0001-766

THE PLAZA
TYPICAL DAY

CO-0001-767

THE PLAZA
FOOD TRUCKS

CO-0001-768

THE PLAZA
FARMER'S MARKET

CO-0001-769

THE PLAZA
DANCE PERFORMANCE

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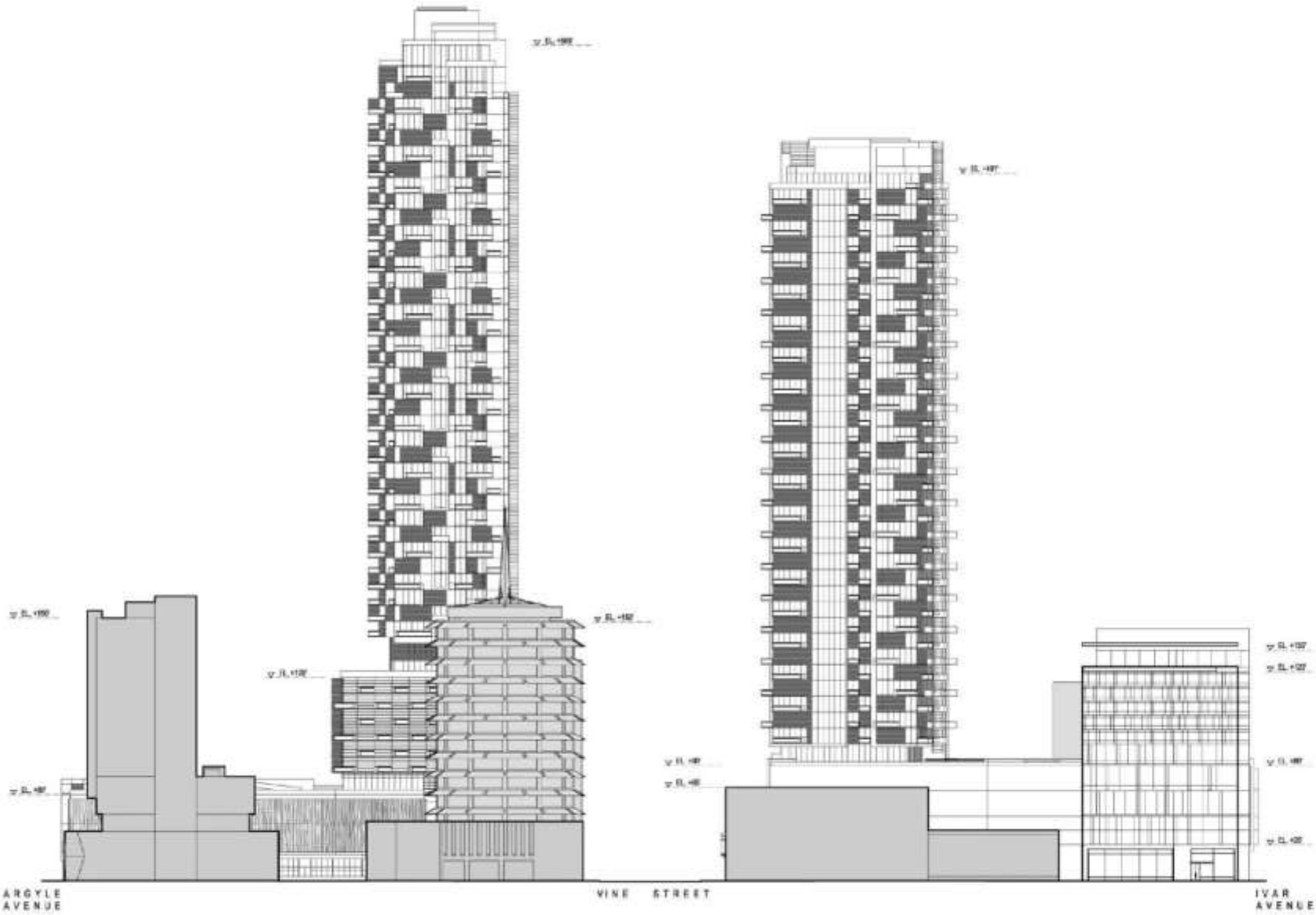

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Developing a New Methodology for Analyzing Potential Displacement

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ARB Agreement No. 13-310
March 24, 2017

The statements and conclusions in this Report are those of the contractor and not necessarily those of the California Air Resources Board. The mention of commercial products, their source, or their use in connection with material reported herein is not to be construed as actual or implied endorsement of such products.

Acknowledgements

This Report was submitted in fulfillment of ARB Agreement No. 13-310 by the University of California, Berkeley under the partial sponsorship of the California Air Resources.
Board. Work was completed as of 10/9/15.

Chapter 2 and 5:

The UC-Berkeley team is grateful for the advice of its advisory committee at MTC/ABAG, including Vikrant Sood, Carlos Romero, Peter Cohen, Gen Fujioka, Wayne Chen, Bob Allen, Duane Bay, Jennifer Martinez, and Johnny Jaramillo. Our case study research (groundtruthing and policy) in East Palo Alto, Chinatown, Marin City, the Mission, and San Jose benefited deeply from the participation of local community groups, including San Francisco Organization Project/Peninsula Interfaith Action, Chinatown Community Development Center, Marin Grassroots, PODER, and Working Partnerships.

Chapter 3:

Development of UrbanSim has been previously supported by the National Science Foundation Grants CMS-9818378, EIA-0090832, EIA-0121326, IIS- 0534094, IIS-0705898, IIS-0964412, and IIS-0964302 and by grants from the U.S. Federal Highway Administration, U.S. Environmental Protection Agency, European Research Council, Maricopa Association of Governments, Puget Sound Regional Council, Oahu Metropolitan Planning Organization, Lane Council of Governments, Southeast Michigan Council of Governments, Metropolitan Transportation Commission and the contributions of many users. The application of UrbanSim to the San Francisco Bay Area was funded by the Metropolitan Transportation Commission (MTC).

The following persons participated in the development of the research to adapt UrbanSim to address displacement issues in its application to the San Francisco Bay Area:
Paul Waddell, City and Regional Planning, University of California Berkeley
Samuel Maurer, City and Regional Planning, University of California Berkeley
Samuel Blanchard, City and Regional Planning, University of California Berkeley

This project has been done in close collaboration with the staff of the Metropolitan Transportation Commission (MTC) and of the Association of Bay Area Governments (ABAG). In particular, we wish to acknowledge the leadership of Mike Reilly at MTC, with additional assistance from Aksel Olsen at ABAG. Many other staff at MTC and at ABAG have participated in the development of the data, the scenarios and the analysis described in this report.

Chapter 4:

Many thanks to those who provided assistance with NHTS and CHTS confidential data, and the remote system for using the CHTS, including Brennan Borlaug, Evan Burton, Jeff Gonder, Susan Liss, Jasmy Methipara, and Adella Santos. Thanks also to Karen Chapple for helpful comments that improved the paper, and for a large set of comments from numerous anonymous reviewers, organized by the California Air Resources Board.

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Abstract

In 2008, California passed Senate Bill 375, requiring metropolitan planning organizations to develop Sustainable Communities Strategies as part of their regional transportation planning process. While the implementation of these strategies has the potential for environmental and economic benefits, there are also potential negative social equity impacts, as rising land costs in infill development areas may result in the displacement of low-income residents. This report examines the relationship between fixed-rail transit neighborhoods and displacement in Los Angeles and the San Francisco Bay Area, modeling patterns of neighborhood change in relation to transit-oriented development, or TOD. Overall, we find that TOD has a significant impact on the stability of the surrounding neighborhood, leading to increases in housing costs that change the composition of the area, including the loss of low-income households. We found mixed evidence as to whether gentrification and displacement in rail station areas would cause an increase in auto usage and vehicle miles traveled (VMT). The report also examines the effectiveness of anti-displacement strategies. The results can be adapted into existing regional models (PECAS and UrbanSim) to analyze different investment scenarios. The project includes an off-model tool that will help practitioners identify the potential risk of displacement.

Executive Summary

Background

To comply with state climate change legislation, regions across California are pursuing more compact, transit-oriented development as a key strategy to achieve greenhouse gas reductions through their sustainable communities strategy (SCS). Concern has been raised that such development and investment patterns may result in heightened property values and the displacement of low income households. This report examines the relationship between fixed-rail transit in neighborhoods and gentrification and displacement in California, specifically in the Los Angeles and San Francisco metro areas.

Objectives and Methods

This report examines the relationship between fixed-rail transit neighborhoods and displacement in California by modeling past patterns of neighborhood change in relation to transit-related investment (also called transit-oriented development, or TOD). It identifies anti-displacement strategies in use and examines their effectiveness in different neighborhood contexts. The report also analyzes the relationship between displacement and travel behavior, including mode choice and vehicle miles traveled (VMT). It develops an off-model tool to examine gentrification and displacement around TODs and explores the feasibility of using the UrbanSim and PECAS modeling tools to predict likely displacement outcomes around TODs.

We use a mixture of quantitative and qualitative data and methods to compensate for the inadequacy of existing secondary datasets, supplementing neighborhood-level census data with parcel-level and address-based data while also conducting extensive key informant interviews.

Results

Fixed-rail transit has a significant impact on the stability of the surrounding neighborhood. In transit neighborhoods, housing costs tend to increase, changing the demographic composition of the area and resulting in the loss of low-income households. We find that low-income households both near and farther away from rail stations have lower VMT than high-income households, but that higher-income households either reduce their driving more in response to being near rail, or that there is no difference in VMT impacts between income categories when considered at a regional level. Our findings generally confirm earlier research on gentrification and displacement, but extend previous work by explicitly linking transit investment to gentrification and displacement, and investigating how income and proximity to transit influence VMT.
Implications for board. The study results have implications for how ARB monitors and supports affordable housing goals via SB 375.

Conclusions

We find a significant and positive relationship between TOD and gentrification, particularly in downtown areas and core cities, and in some cases the loss of affordable housing or low-income households as well. Yet, the timeframe of impacts, as well as the role of intervening variables, is less clear and warrants additional research. Given the lack of appropriate data, it is hard to predict how households will alter their VMT with displacement, for instance as high-income households replace

low-income households near transit. More research is needed to understand the dynamic impacts that occur as residents adjust their travel behavior in new locations. Finally, the effectiveness of policy solutions varies by context, and it is unclear whether any of the existing approaches are sufficient to address displacement in the core neighborhoods where it is most prevalent. More research is needed to develop responsive policy tools, as well as to understand better the trade-offs between anti-displacement and VMT reduction goals. Despite these remaining concerns, it is not too soon to begin incorporating these results into existing regional models (PECAS and UrbanSim) to analyze different investment scenarios and market conditions. We also recommend that practitioners begin to use our off-model tool to help identify the potential risk of displacement.

Introduction

The impetus for this study lies in state climate change legislation. Recognizing the role good planning can play in achieving our AB32 goals, California passed Senate Bill 375, requiring the California Air Resources Board (ARB) to set regional greenhouse gas reduction targets for passenger vehicles. The bill also requires metropolitan planning organizations (MPOs) to develop Sustainable Communities Strategies (SCSs) as part of their regional transportation planning process to illustrate how integrated land use, transportation, and housing planning will achieve these targets. Regions are pursuing more compact, transit-oriented development as a key strategy to achieve these reductions.

While the implementation of these strategies has the potential to bring environmental, health, and economic benefits, planning for SCSs across the state has raised awareness of the potential social equity effects of land-use-based greenhouse gas reduction strategies. Locals are likely to benefit from improved mobility, neighborhood revitalization, reduced transportation costs, and other amenities that spill over from the new development (Cervero et al. 2004). However, more disadvantaged communities may fail to benefit, if the new development does not bring appropriate housing and job opportunities, or if there is gentrification that displaces low-income and minority residents (Pollack, Bluestone, and Billingham 2010, Chapple 2009). Specifically, there is concern that new transit investment and development may increase housing costs, forcing low-income communities, often of color, to move to more affordable locations, preventing these communities from sharing in the benefits of this type of development. Replacing low-income households in transit-oriented developments with higher-income residents more likely to own a car may reshape travel behavior, including vehicle-miles traveled (VMT).

This report examines the relationship between fixed-rail transit neighborhoods and displacement in California, modeling past patterns of neighborhood change in relation to transit-related investment (also called transit-oriented development, or TOD).[i] After establishing the relationship between TOD and displacement, the report identifies anti-displacement strategies in use and examines their effectiveness in different neighborhood contexts. The report also analyzes the relationship between displacement and travel behavior, including mode choice and VMT. We find that low-income households both near and farther away from rail stations have lower VMT than high-income households, but that higher-income households either reduce their driving more in response to being near rail, or that there is no difference in VMT impacts between income categories. When gentrification is accompanied by densification, these results imply it will reduce regional VMT on net. However, when displacement is significant enough and population density declines, regional VMT is expected to increase.

The results of this analysis form the basis of a predictive model that can be adapted into existing regional models (PECAS and UrbanSim) to analyze different investment scenarios and market conditions. We also produce an off-model tool that will help practitioners quantify the potential magnitude of displacement.

In total, this study produces the strongest evidence to date of the relationship between TOD and displacement. Surprisingly little research has addressed the relationship between transit neighborhoods and social equity, outside of an advocacy literature has focused largely on the importance of affordable housing near transit stations to reduce transportation cost burdens for low-income households (CTOD 2004; Great Communities Collaborative 2007; CHPC 2013). One reason for the relative lack of research on equity issues related to transit neighborhoods is the

challenge of operationalizing displacement, due to lack of appropriate data. Further, most studies neglect to examine the role of private or public investment in spurring gentrification, examining it as a purely demographic phenomenon, i.e., the influx of higher-income households into low-income neighborhoods. They also generally fail to examine the possibility that rather than rent increases pushing households out, the key displacement mechanism is rent increases preventing minority households from moving in. Studies typically investigate only a 10-year period; however, given the length of time it takes to plan, fund, and build transportation improvements, examining a longer period of time may be more appropriate.

Several innovations distinguish our approach from previous and related work. First, we use a mixture of quantitative and qualitative data and methods to compensate for the inadequacy of existing secondary datasets, supplementing neighborhood-level census data with parcel-level and address-based data on property transactions, building permits, building characteristics, and affordable housing subsidies, along with field observations. We develop the neighborhood change models in close collaboration with regional agency officials, with the idea that they will begin to integrate displacement effects into their regional models. Second, the report complements the neighborhood change analysis with an extensive inventory and key informant interviews to identify policies supporting transit neighborhoods and mitigating displacement. Finally, using data from household travel surveys, we link neighborhood types and displacement to VMT.

This report focuses on the San Francisco Bay Area and Los Angeles County. Though both regions have experienced significant levels of transit investment, they have different development trajectories. Much of the Bay Area's transit development occurred with the development of the BART system in the 1970s and 1980s, while Los Angeles developed fixed rail much more recently. Moreover, urban form and land markets function very differently in the two places, and the San Francisco region remains a stronger real estate market than most of Los Angeles County. As a result, in the analysis of neighborhood change, we take slightly different analytic approaches in the two regions. While both models analyze gentrification and loss of affordable housing, the San Francisco model adds an analysis of the displacement of low-income households. However, the newness of transit development in Los Angeles, as well as its weaker housing market (outside of Downtown), may make it most comparable to the many other areas of California with new rail systems.

The remainder of this report is organized by analytic tasks, as follows. Chapter 1 provides an in-depth review of the literature to date on neighborhood change, gentrification, public investment, displacement, urban simulation models, and change assessment tools. Chapter 2 analyzes historic patterns of neighborhood change in both regions in both transit and other neighborhoods. Different sections describe the construction of the neighborhood and parcel-level databases; the typologies of transit neighborhoods and displacement; the models of neighborhood mobility, displacement, and change; and the groundtruthing of our findings (through neighborhood observation). Chapter 3 describes how the UrbanSim and PECAS models can incorporate displacement, through adding anti-displacement policies and incorporating housing affordability into real estate development models. It also provides a methodology to assess displacement "off-model," i.e., in an Excel tool readily accessible by practitioners. Chapter 4 analyzes the VMT and auto ownership impacts of displacement; and Chapter 5 examines strategies to minimize displacement from transit investment and TOD. A conclusion summarizes the major findings of each task.

[i] We define TOD here broadly to include any form of development, from new construction to rehabilitation of older structures, within a half-mile radius of a fixed-rail transit station. We use the term TOD interchangeably with "transit neighborhood."

Chapter 1: Literature Review of Gentrification, Displacement, and the Role of Public Investment

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Acronyms Used in This Chapter

- ACS (American Community Survey)
- BRT (Bus Rapid Transit)
- CCI (Center for Community Innovation)
- HOV (High-Occupancy-Vehicle)
- HUD (Department of Housing and Urban Development)
- LISC (Local Initiative Support Corporation)
- NYCHVS (New York City Housing and Vacancy Survey)
- PSID (Panel Survey of Income)
- PSRC (Puget Sound Regional Council)
- TOD (Transit-Oriented Districts/Development)

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A significant body of work examines neighborhood change, gentrification, and displacement. This chapter assesses this research, beginning with accounts of neighborhood change from the Chicago School in the 1920s. After summarizing research that examines trends in economic and racial segregation, the chapter turns to the literature on neighborhood decline and ascent, with a focus on the state of knowledge about gentrification and the role of public investment. The heart of the chapter addresses the literature on displacement, describing the methodologies used to understood displacement – and how they fall short. The next section addresses how neighborhood change dynamics differ in strong versus weak markets. After an assessment of how urban simulation models treat neighborhood change, the chapter concludes with a description of the rise of early warning systems for gentrification and displacement.

Chapter 1 Introduction

The ever-changing economies, demographics, and morphologies of the metropolitan areas of the United States have fostered opportunity for some and hardship for others. These differential experiences "land" in place, and specifically in neighborhoods. Generally, three dynamic processes can be identified as important determinants of neighborhood change: movement of people, public policies and investments, and flows of private capital. These influences are by no means mutually exclusive. In fact, they are very much mutually dependent, and they each are mediated by conceptions of race, class, place, and scale. How scholars approach the study of neighborhood change and the relative emphasis that they place on these three influences shapes the questions asked and attendant interventions proposed.

These catalysts result in a range of transformations—physical, demographic, political, economic—along upward, downward, or flat trajectories. In urban studies and policy, scholars have devoted volumes to analyzing neighborhood decline and subsequent revitalization at the hands of government, market, and individual interventions. One particular category of neighborhood change is gentrification, definitions and impacts of which have been debated for at least 50 years. Central to these debates is confronting and documenting the differential impacts on incumbent and new residents, and questioning who bears the burden and who reaps the benefits of changes. Few studies have addressed the role of public investment, and more specifically transit investment, in gentrification. Moreover, little has been written about how transit investment may spur neighborhood disinvestment and decline. Yet, at a time when so many United States regions are considering how best to accommodate future growth via public investment, developing a better understanding of its relationship with neighborhood change is critical to crafting more effective public policy.

This literature review will document the vast bodies of scholarship that have sought to examine these issues. First, we contextualize the concept and study of neighborhood change. Second, we delve into the literature on neighborhood decline and ascent (gentrification). The third section examines the role of public investment, specifically transit investment, on neighborhood change. Next, we examine the range of studies that have tried to define and measure one of gentrification's most pronounced negative impacts: displacement. After describing the evolution of urban simulation models and their ability to incorporate racial and income transition, we conclude with an examination of gentrification and displacement assessment tools.

Historical Perspectives on Neighborhoods and Change

eighborhoods have been changing since the beginning of time—people move in and out, buildings are built and destroyed, infrastructure and amenities are added and removed, properties are transferred, and so on Despite the constancy of change, our current paradigms for understanding and studying neighborhoods and change stem from the early 20th century when urban America experienced dramatic change due to rapid industrialization, extensive flows of immigrants from Europe, and mass migration of African-Americans from the rural south. In this time of great transition, emergent social problems, and heightened middle class anxiety about the ills of urban society, new ideas were formulated to understand urban growth, neighborhood change, and attendant tensions.

We review these ideas here because they continue to be prominent in today's scholarship and current understandings about neighborhoods and change. Three key ideas that took shape were: 1) the primacy of neighborhood as the unit of analysis in studying the city; 2) specific concepts of the substantive nature of neighborhoods, including: theories of a social ecology, cycles of equilibrium to disequilibrium, ideas of social disorganization, and assimilation; and 3) attention to race and ethnicity and their association with persistent neighborhood poverty.

While today the notion of the "neighborhood" is one that practitioners, scholars, and laypersons alike take for granted, its definitions vary, and not all assign equal importance to its role in social processes. The neighborhood has come to be understood as the physical building block of the city for both "social and political organization" (Sampson 2011, 53), conflating physical and non-physical attributes. Early scholars hypothesized that cities' physical elements like size and density, as well as their heterogeneous demographics, influenced the mechanisms and processes of neighborhood change (Park 1936; Park 1925; Wirth 1938). Theorists suggested that there were natural areas in the city for specific types of land uses and people, such as the concentric zone model with a central business district at the center, transitional zones of light industrial and offices next, followed by worker housing, and finally newer housing for the middle class in the outer ring (Burgess 1925).

These ideas about neighborhoods and urban morphology presented a deterministic model in which neighborhoods were considered a closed ecosystem, and neighborhood change had a natural tendency toward social equilibrium. New residents—distinguished by ethnicity and class—would enter the ecosystem and disrupt the equilibrium. Competition for space followed, and neighborhood succession occurred when less dominant populations were forced to relocate. The dominant groups that stayed established a new equilibrium. In these conceptualizations of neighborhood change, competition for space drove locational decisions of different groups in a natural and inevitable way. Observed deviant behavior was thought to be a natural reaction to urbanization; new arrivals to the city fostered social disorganization, which would return to equilibrium once the immigrants assimilated (Park 1936; Park 1925; Wirth 1938).

This "ecological" model also naturalized segregation. New arrivals to the city—specifically the "poor, the vicious, the criminal"—would separate themselves from the "dominant moral order" (Park 1925, 43) into segregated neighborhoods to live among people with a similar moral code of conduct. Like disorganization, this "voluntary segregation would eventually break down as acculturation brought assimilation" (Hall 2002, 372). These concepts set the foundation for subsequent study and policy premised on notions of marginality in which immigrants, African-Americans, and low-income people were assumed to operate based on logics divergent from

mainstream, middle-class society, and of assimilation as a key mechanism to mitigate social disorganization.

Although early researchers were most concerned with immigrant influx and increasing ethnic diversity among white populations, others—notably black sociologists—observed that neighborhoods with burgeoning African-American populations seemed to experience neighborhood succession differently than the model of naturalized assimilation would predict. Unlike white ethnic immigrant in-movers to Chicago, the African-American population was involuntarily contained in specific neighborhoods (DuBois 2003).

These approaches to neighborhoods and neighborhood change have been widely adopted in today's policy and research agendas, perhaps understandably, since about half of all United States metropolitan areas conform to the concentric zone model (Dwyer 2010). Yet, these early ideas have their weaknesses. The deterministic and ecological theories naturalize the transition process and leave very little room for politics. The conflation of geographic units (neighborhoods) with social and political units masks other processes in cities. Public institutions also remain notably absent in these early theories, and these approaches fail to take into account larger city and regional forces that influence neighborhood-level change. Subsequent research has improved upon these weaknesses by de-naturalizing market phenomena, incorporating the role of public sector actors and public policy, and by embedding neighborhood in other macro- and meso-scale processes (Goetz 2013; Jargowsky 1997).

Finding: Influential early models of neighborhood change present processes of succession and segregation as inevitable, underemphasizing the role of the state.

Trends in Mobility and Neighborhood Segregation

Despite the emphasis that urban models place on change, what is perhaps most startling about this literature is how slowly neighborhood change happens. Analysis of change over time suggests that neighborhoods are surprisingly stable (Wei and Knox 2014). Over individual decades, the change that researchers are discussing amounts to a few percentage points; neighborhood transformation takes decades to complete. And, in fact, overall, Americans have become significantly more rooted over time; just 12% of United States residents moved in 2008, the lowest rate since 1948 and probably long before (C. S. Fischer 2010). Sociologist Claude Fischer credits growing security, as well as technology, for the shift, but adds: "Americans as a whole are moving less and less. But where the remaining movers—both those forced by poverty and those liberated by affluence—are moving is reinforcing the economic and, increasingly, the cultural separations among us" (Fischer 2013). For many at the lower end of the economic spectrum, stability means imprisonment: even though many families have left, researchers estimate that some 70% of families in today's impoverished neighborhoods were living there in the 1970s as well (Sharkey 2012).

Questions of urban morphology and neighborhood change have continued to capture academic and popular imagination because of the perceived and real impacts of neighborhoods on residents. Scholars writing on the "geographies of opportunity" (Briggs 2005) argue that the spatial relationships between high-quality housing, jobs, and schools structure social mobility. Patterns of urban development in the United States have resulted in uneven geographies of opportunity, in which low-income households and people of color experience limited access to affordable housing, high quality schools, and good-paying jobs. A range of studies have found that living in poor neighborhoods negatively impacts residents, particularly young people, who are more likely than

their counterparts in wealthier neighborhoods to participate in and be victims of criminal activity, experience teen pregnancy, drop out of high school, and perform poorly in school, among a multitude of other negative outcomes (Crane 1991; Ellen and Turner 1997; Galster 2010; P. A. Jargowsky 1997; Jencks et al. 1990; Ludwig et al. 2001; Sampson, Morenoff, and Gannon-Rowley 2002; Sharkey 2013). However, geographic proximity does not affect opportunity in the same way for all variables; living next door to a toxic waste site may impact life chances more than living next to a major employer (Chapple 2014).

Economic Segregation

Economic segregation has increased steadily since the 1970s, with a brief respite in the 1990s, and is related closely to racial segregation (i.e., income segregation is growing more rapidly among black families than white) (Fischer et al. 2004; Fry and Taylor 2015; P. Jargowsky 2001; Lichter, Parisi, and Taquino 2012; Reardon and Bischoff 2011; Watson 2009; Yang and Jargowsky 2006). Increases are particularly pronounced in more affluent neighborhoods: between 1980 and 2010, the share of upper-income households living in majority upper-income tracts doubled from 9 to 18 percent, compared to an increase from 23 to 25 percent in segregation of lower-income households living in majority lower-income tracts (Fry and Taylor 2012).

The sorting of the rich and poor is even more pronounced between jurisdictions than between neighborhoods in the same city (Reardon and Bischoff 2011). Over time, the poor are increasingly concentrated in high-poverty places, while the non-poor shift to non-poor cities (Lichter, Parisi, and Taquino 2012). Upper-income households in metropolitan areas like Houston or Dallas are much more likely to segregate themselves than those in denser older regions like Boston or Philadelphia or Chicago (Fry and Taylor 2012). This suggests that segregation is related to metropolitan structure and suburbanization. The concentric zone model is particularly strongly associated with the segregation of the affluent (Dwyer 2010). In other words, in metropolitan areas where the affluent are most separated from the poor, they are living on land further from the center.

Metropolitan areas that conform to the concentric zone model (for example, places like Chicago, Los Angeles, and Philadelphia) tend to be larger and more densely populated, often with a higher degree of both affluence and inequality, a larger African-American population, and a greater share of population in the suburbs. In the remaining metropolitan areas, there is greater integration between the affluent and the poor (Dwyer 2010). In these places, such as Seattle, Charleston, and Boulder, the rich concentrate in the urban core, allowing more opportunity for interaction with the poor. Growing racial/ethnic diversity may be reshaping some of these areas, with suburban immigrant enclaves creating more fragmented, checkerboard patterns of segregation (Coulton et al. 1996).

Public choice theorists, most prominently Charles Tiebout (1956), have long understood economic segregation to result from the preference of consumers for distinct baskets of public goods (e.g., schools, parks, and the like); local jurisdictions provide these services at different levels, attracting residents of similar economic means (Peterson 1981). However, the causality here is unclear: government policies shape free markets and preferences, as well as respond to them. Thus, transportation policies favoring the automobile, discrimination and redlining in early federal home ownership policies, mortgage interest tax deductions for homeowners, and other urban policies have actively shaped or reinforced patterns of racial and economic segregation, while severely constraining choices for disadvantaged groups (Dreier, Mollenkopf, and Swanstrom 2004).

But we also now understand that neighborhood income segregation within metropolitan areas is influenced mostly by income inequality, in particular, higher compensation in the top quintile and the lack of jobs for the bottom quintile (Reardon and Bischoff 2011; Watson 2009). Income inequality leads to income segregation because higher incomes, supported by housing policy, allow certain households to sort themselves according to their preferences – and control local political processes that continue exclusion (Reardon and Bischoff 2011). Other explanatory factors include disinvestment in urban areas, suburban investment and land use patterns, and the practices generally of government and mortgage underwriters (Hirsch 1983; Levy, McDade, and Dumlao Bertumen 2011). Nonetheless, were income inequality to stop rising, the number of segregated neighborhoods would decline (Reardon and Bischoff 2011, Watson 2009).

Finding: Neighborhoods change slowly, but over time are becoming more segregated by income, due in part to macro-level increases in income inequality.

Racial Transition and Succession

In the United States, income segregation is highly correlated with racial/ethnic segregation, which has a long history. As many scholars have documented, African-American segregation peaked in 1960 and 1970, and has declined since then (Logan 2013; Vigdor 2013). The growth of Asian and Hispanic populations in the last several decades has led to more diverse, multi-ethnic neighborhoods. Ellen and coauthors (2012) find both the increase of previously white neighborhoods that became integrated through the growth of non-white populations, as well as a smaller but accelerating number of previously non-white neighborhoods that became integrated through the growth of white populations. It is important to note two countervailing trends, however. First, while the number of integrated neighborhoods increased from 1990 to 2010, the large majority of non-integrated neighborhoods remained so over each decade. Furthermore, African-American-white segregation has persisted in major metropolitan areas, especially in the Northeast and Midwest, and a large share of minorities still live in neighborhoods with virtually no white residents (Logan 2013). Second, a significant number of integrated neighborhoods reverted to non-integration during each decade, though the stability of integration increased after 2000. These findings of increasing integration over time, persistence of non-integration in a majority of neighborhoods, and instability of some integrated neighborhoods are corroborated by a number of other researchers (Farrell and Lee 2011; Quercia and Galster 2000; Chipman et al. 2012; Sampson and Sharkey 2008; Logan and Zhang 2010).

Looking at the neighborhood and metropolitan correlates of these demographic shifts, Ellen et al. (2012) find a number of interesting patterns. Focusing on a case pertinent to the study of gentrification – the integration of African-American neighborhoods by white in-movers – the authors find that neighborhoods that become integrated start off with lower income and rates of homeownership and higher rates of poverty than those that remain non-integrated. Additionally, these neighborhoods are more likely to be located in central cities of metropolitan areas with growing populations. Looking at rates of transition to integration by racial and ethnic category, the researchers contradict previous work (Logan and Zhang 2010; Reibel and Regelson 2011; Lee and Wood 1991) by finding that multi-racial or multiethnic neighborhoods integrate with white in-movers at a relatively infrequent rate. This contradiction may be explained, however, by the lack of nuance employed by the various authors in categorizing race and ethnicities, as various subgroups can display markedly different residential movement patterns (Charles 2003).

Several main theories have been put forward to account for both the persistence and change of neighborhood racial compositions over time. With respect to the integration of formerly white neighborhoods, a primary mechanism described by Charles (2003) is that of "spatial assimilation," which argues that as the gap between socioeconomic status of racial and ethnic groups narrows, so too does their spatial segregation. While this mechanism may help explain the integration of Hispanic and Asian households into previously white neighborhoods, it does not help explain the experience of African-American households (Charles 2003). For these groups, a theory of "place stratification" is a better fit, incorporating discriminatory institutions that limit residential movement of African-Americans into white neighborhoods and factors such as, biased residential preferences among non-Hispanic whites and discriminatory practices in the real estate market (Charles 2003; Krysan et al. 2009; Turner et al. 2013).

The converse neighborhood process, the transition from integration back to segregation, has been explained by economists through theories of neighborhood "tipping," which hold that as the neighborhood proportion of non-white racial and ethnic groups increases past a certain threshold, a rapid out-migration of other (white) groups will ensue (Schelling 1971; Charles 2000; Bruch and Mare 2006). The precise threshold at which neighborhoods "tip" varies according to a number of metropolitan-level attributes, and researchers have found that places with small non-white populations, high levels of discrimination, large homicide rates, and a history of racial riots tip at lower thresholds than other places (Quercia and Galster 2000; Card, Mas, and Rothstein 2008).

A number of other macro-level and institutional influences have been attached to racial transition. For instance, rates of macro-level population movement are seen to have a substantial impact on neighborhood racial compositions, with the movements of the Great Migration out of the South and into metropolitan areas of the Northeast, Midwest, and West leading to greater degrees of black segregation in urban neighborhoods (Ottensmann, Good, and Gleeson 1990) and more recent movements of immigrants into neighborhoods leading to greater rates of out-migration among native-born residents (Crowder, Hall, and Tolnay 2011).

Finally, a number of studies have gone beyond place-level analyses of neighborhood racial change to examine the determinants of individual household movements. For instance, (Hipp 2012) has found a strong correlation between the race of the prior resident of a housing unit and the race of the in-moving resident, a phenomenon that he attributes to a signaling mechanism for neighborhood belonging. (Sampson 2012) similarly finds that Hispanic and black residents overwhelmingly move to predominantly Hispanic and black neighborhoods of Chicago, respectively. Additionally, he finds strong effects of spatial proximity on selection of destination neighborhoods, as well as strong associations with similarities in income, perceptions of physical disorder, and social network connectedness between origin and destination neighborhoods. These findings may help explain results from other researchers that have found limited impact of housing policies and programs such as inclusionary zoning and housing choice vouchers to reduce neighborhood racial segregation (Glaeser 2003; Kontokosta 2013; Chaskin 2013). The literature on gentrification, discussed below, revisits this question of how in-migration patterns reshape neighborhoods. For further detail on racial transition and succession studies, see Appendix A.

Finding: Racial segregation persists due to patterns of in-migration, "tipping points," and other processes; however, racial integration is increasing, particularly in growing cities.

Dimensions of Neighborhoods and Change

In general, studies of neighborhood change began with preoccupations about decline and have evolved into concerns about the impacts of neighborhood ascent, variously defined. Public investment – and disinvestment – has played a role in both types of change.

Neighborhood Decline

The story of neighborhood decline in the United States is oft-told. While early researchers naturalized processes of neighborhood transition and decline, the drivers of decline are anything but natural and stem from a confluence of factors including: federal policy and investments, changes in the economy, demographic and migration shifts, and discriminatory actions. Neighborhood conditions and patterns of physical investment (or disinvestment) have been conflated with challenges of poverty (Katz 2012). Given this conflation, our review examines not only studies concerned with physical change but also research that investigates demographic and social dynamics that accompany neighborhood-level transitions.

Between the 1920s and 1950s, the African-American population in northern cities swelled due to the mechanization of agricultural production in the South and Jim Crow laws, even as deindustrialization started to take hold and jobs began moving out of central cities (Sugrue 2005). Simultaneously federal programs, (e.g., the Federal-Aid Highway Program and Home Owners Loan Corporation) provided quick automobile access (in the case of the former) and large subsidies for home ownership in the suburbs (in the case of the latter). The confluence of government subsidy and investment in infrastructure and regulation with private lending practices led to subsidies for racial segregation, with restrictive covenants on deeds and lending practices governed by racially discriminatory stipulations, i.e., redlining (K. Jackson 1987).

The demographic shifts enabled by these public policies and private actions left cities with a severely depleted tax base to support the more disadvantaged communities who did not have options to leave the city (Frieden and Sagalyn 1989). Ostensibly to address the persistent poverty in cities, urban renewal sought to revive downtown business districts and provide adequate housing for all. However, the divergent interests of stakeholders including developers, mayors, and affordable housing advocates resulted in a diluted policy that prioritized downtown redevelopment at the expense of primarily low-income communities and particularly African-American communities, leading many to refer to urban renewal as "Negro Removal." Meanwhile, public housing development served as a tool to physically and socially buffer central business districts from neighborhoods of poverty, which were predominantly African-American (Halpern 1995; Hirsch 1983). These efforts emphasize the approach of "solving" social, economic, and political problems with spatial and physical solutions. In essence, this period conflated urban policy with anti-poverty policy, due in part to the real policy challenges of addressing structural poverty (O'Connor 2002).

By the late 1980s, inner city poverty and metropolitan inequality were cemented. Wilson (1987), drawing on some of the earlier notions of neighborhood succession, argued that the key mechanisms driving inner-city poverty were: structural economic shifts; shifting migration flows; changes in the age structure; and the out-migration of middle-class blacks as a result of Civil Rights gains. These shifts resulted in "concentration effects," leaving residents even more isolated from

mainstream institutions, labor markets, and politics, which manifested spatially in the creation of the black ghetto neighborhood. Beyond Wilson's focus on class, Massey and Denton (1993) argued that neighborhood decline is caused by systems of discrimination pervasive in the housing market, and that "racial segregation…and the black ghetto – are the key structural factors responsible for the perpetuation of black poverty" (Massey and Denton 1993, 9). They suggest a "culture of segregation" forms from geographic isolation, resulting in limited political power, less resilience available to respond to economic shifts, and little or no access to job opportunities and mainstream institutions.

Sociologist Loic Wacquant offers another way of understanding the relationship between race, poverty, and space, extending Massey and Denton's focus on residential segregation. For Wacquant (1997), racial enclosure is a critical component to understanding urban decline. Analyses and proposed interventions focused only on poverty will never mitigate and deconstruct the ghetto, since it is, in fact, the racial and ethnic enclosure and control that creates poverty, not the other way around. He argues that the shift to class-based segregation at the expense of an analysis of race is a "tactical" choice by scholars, given the politics of influencing policy: "[scholars] have diligently effaced from their analytical framework the one causal nexus that the American state stubbornly refuses to acknowledge, confront, and mitigate when dealing with disparity and destitution: race" (1998, 149).

Complicating the issue of segregation for policymakers is the need to distinguish between the ghetto and the enclave (Marcuse 1997). In contrast to the ghetto, where society segregates residents involuntarily in a process of exclusion, the enclave is a spatial cluster where residents choose to congregate in order to achieve economic goals (such as Chinatown) or social cohesion (such as Hasidic Williamsburg, Brooklyn). The urban enclave may strengthen social groups or subcultures and more effectively provide the resources to prosper than an integrated neighborhood does (Fischer 1984).

More recently, scholars using quantitative methods have broadened analyses from the neighborhood level to metropolitan, county, and state geographies (Fischer et al. 2004; Massey, Rothwell, and Domina 2009; Reardon et al. 2008). Jargowsky's (1997) empirical work links ghetto poverty with metropolitan economies and finds that changes in economic opportunity at the metropolitan level impact the levels of inner city poverty. Further, Jargowsky's work raises questions about the concept of neighborhood as a self-contained ecosystem, highlighting neighborhoods' interdependency and their dependence on broader metropolitan economies and infrastructures. Neighborhood decline and disinvestment may reflect regional economic distress, but may also be related to the shift of investment elsewhere in the metropolitan area.

Finding: Neighborhood decline results from the interaction of demographic shifts, public policy, and entrenched segregation, and is shaped by metropolitan context.

Neighborhood Ascent and Gentrification

Following decades of public and private initiatives to regenerate the inner city, scholars are increasingly paying attention to the causes and consequences of the upward trajectories of neighborhoods, also known as neighborhood ascent or upgrading. Much like decline, neighborhood ascent exhibits a variety of trajectories, which depend greatly on their starting points. Owens (2012), for instance, identified nine different types of neighborhoods that are all experiencing some form of upgrading in the United States: minority urban neighborhoods, affluent neighborhoods,

diverse urban neighborhoods, no population neighborhoods, new white suburbs, upper-middle-class white suburbs, booming suburbs, and Hispanic enclave neighborhoods. While different actors and catalysts may be at play in these different types of neighborhood ascent, Owens does not suggest any causality, and does not investigate the role of investment or public policies on these trajectories. In this section we provide an overview of the literature on gentrification, the most commonly studied form of neighborhood ascent involving the racial and economic transformation of low-income neighborhoods.

The first documented use of the term "gentrification" (Glass 1964) describes the influx of a "gentry" in lower-income neighborhoods in London during the 1950s and 60s.[1] Today, gentrification is generally defined as simultaneously a spatial and social practice that results in "the transformation of a working-class or vacant area of the central city into middle-class residential or commercial use" (Loretta Lees, Slater, and Wyly 2008, xv).[2] Often, gentrification has been understood as a tool of revitalization for declining urban neighborhoods, defined primarily by their physical deterioration. However, revitalization, as first noted by Clay (1979) can take two forms: incumbent upgrading and gentrification. Incumbent upgrading, whereupon existing residents improve the conditions of their neighborhood, is catalyzed by the cost of housing, the rise of neighborhood consciousness, demographic pressure, and reduced pressures from migrants to the city. Gentrification, on the other hand, draws middle-class residents to the city, attracted by job and recreational opportunities, low and appreciating housing prices, stabilization of negative social conditions (such as crime), and lifestyle or aesthetic considerations. Displacement, a negative outcome of gentrification, is not present in incumbent upgrading.

Gentrification literature conceptualizes neighborhoods as terrains not of isolated pockets of decline and abandonment, but rather as sites of exploration, potential investment, and emergent identity construction that are manifestations of larger city, metropolitan, and global forces. Gentrification is not driven by a singular cause. It may emerge when three conditions are present: the existence of a potential pool of gentrifiers, a supply of inner-city housing, and a cultural preference for urban living (Hamnett 1991). It is arguably a "chaotic" process, which does not lend itself to binary or linear analysis (Beauregard 1986; Freeman 2006; L. Lees 1996). Early debates, however, relied strongly on binaries to identify the causes of gentrification. Scholars argued that either macro-forces of capital accumulation or micro-sociological processes of individual preferences drive gentrification processes. Today, the overarching debate has generally drawn a line between the flows of capital versus flows of people to neighborhoods. This dichotomous narrative has spawned many analyses focused on either production and supply-side or consumption and demand-side catalysts. Flows of capital focus on profit-seeking and the work of broader economic forces to make inner city areas profitable for in-movers. Flows of people refer to individual gentrifiers who enter inner city areas, drawn by cultural and aesthetic preferences.

From the production or supply-side perspective, private capital investment, public policies, and public investments are the main mechanisms of gentrification. Smith (1979) argues that the return of capital from the suburbs to the city drives gentrification; the change in neighborhoods is the spatial manifestation of the restructuring of capital through shifting land values and housing development. Gentrification occurs in disinvested neighborhoods where there is the greatest "rent

[1] While Glass offers the first use of the term, the phenomenon predates this naming. For example, Osman (2011) documents earlier instances of class-based movement into inner city areas in the United States; his history of "brownstoning" in Brooklyn dates gentrifying neighborhood change to the 1940s.

[2] An early definition by London and Palen (1984) quoting the Urban Land Institute names gentrification as a "private-market non-subsidized housing renovation."

gap" between the cost of purchasing property and the price at which gentrifiers can rent or sell (1979). Smith (1979) sees individual gentrifiers as important, but places a greater emphasis on a broader nexus of actors – developers, builders, mortgage lenders, government agencies, real estate agents – that make up the full political economy of capital flows into urban areas. His focus goes so far as to obscure individual ascriptive characteristics (e.g., race or ethnicity) in favor of a more macro analysis of gentrification and urban land markets as a function of the capitalist economy.

Another "supply-side" actor is government – at the local, state, and federal levels – which through public subsidy and policy measures sets the conditions for and catalyzes gentrification processes. As mentioned previously, Smith (1979; 1996) sees government as part of a larger political economy that aims to accumulate capital through land use management and city development, echoing the idea of the city as a "growth machine" (Logan and Molotch 1987). Others (Freeman 2006; Wilson and Taub 2006; Pattillo 2008; powell and Spencer 2002) have clearly tied gentrification to historical patterns of residential segregation. Segregated neighborhoods experience the "double insult – a 'one-two' knock" (powell and Spencer 2002, 437) of neglect and white flight in the 1950s through 1970s and then the forces of displacement in the 1980s through today. These scholars highlight the role of policy in structuring the differential and inequitable spatial distributions of risks and resources by race and class across metropolitan areas. Gentrification represents merely the latest imprint of these efforts by the state. In subsequent sections we will review the literature on the specific role of government investment in infrastructure in housing prices and subsequent neighborhood change.

For those who explain gentrification as flows of people (rather than capital), two threads persist, both grounded in consumer-driven, demand-side principles. One thread focuses on aesthetic and lifestyle preferences of gentrifiers, who desire a gritty, authentically "urban" experience (Caulfield 1994; Ley 1994; Ley 1996; Zukin 1982), or who see themselves as agents to preserve some nostalgic, authentic character of a place (Brown-Saracino 2009). The second thread is embedded in neoclassical economics and links land values to housing location choice connected to shifts in the labor market (Hamnett 2003).

Ethnographic accounts have examined middle- and upper-class, primarily white, childless in-movers and their motivations to move to inner city neighborhoods. These studies have identified political persuasions and identity construction vis-à-vis their housing choices into declining neighborhoods as the primary catalysts (Brown-Saracino 2009; Caulfield 1994; Ley 1996; Ley 2003). Others also consider broader economic forces (Rose 1984; Zukin 1987), which point to the connections between the theories on macro flows of capital described above and these more micro-sociological processes of individuals.

These earlier studies on in-movers have focused primarily in inter-racial/ethnic gentrification, with white in-movers and incumbent communities of color. More recently, scholars have examined cases of middle-class black in-movers into predominantly low-income black neighborhoods (Boyd 2005; Freeman 2006; Hyra 2008; Moore 2009; Pattillo 2008; Taylor 2002). These studies tie neighborhood-specific processes to larger structural issues of residential segregation and exclusion, arguing that in some cases black in-movers feel more comfortable relocating to predominantly African-American neighborhoods because of a history of housing discrimination in predominantly white neighborhoods and the suburbs (Freeman 2006; Moore 2009; Taylor 2002). African-American in-movers also become connected to a set of cultural practices and aesthetics that link to their racial identities (Freeman 2006). Further, black gentrifiers may see their relocation in inner cities as a project of "racial uplift" for their lower-income black counterparts (Boyd 2005).

Additional work has also shown substantial racial diversity specifically among higher-income gentrifying households (Bostic and Martin 2003).

Looking at neighborhood racial transition through the lens of gentrification, existing evidence is mixed. Research has found trends of greater white movement into poor, non-white neighborhoods (Crowder and South 2005; McKinnish, Walsh, and Kirk White 2010), resulting in shifting racial compositions in the face of gentrification. Other research, however, presents a picture of less sharp differences in race among households moving into and out of gentrifying and non-gentrifying neighborhoods (Ellen and O'Regan 2011). Finally, Hwang and Sampson (2014) recently found that Chicago neighborhoods with higher proportions of black and Latino residents gentrified at a slower pace than predominantly white neighborhoods, indicating that gentrifiers have less of a taste for integrated neighborhoods than previously believed.

Finding: Gentrification results from both flows of capital and people. The extent to which gentrification is linked to racial transition differs across neighborhood contexts.

Cultural Strategies and Gentrification

An analysis of the built environment unveils a range of cultural strategies undertaken in many cities, from large- to micro-scale, that can be linked to processes of gentrification. In order to stand out and take part in inter-urban competition, cities make use of "starchitects," innovative design, and "cultural" institutions/developments to give them a competitive edge (Zukin 1995). Flagship developments, including entertainment and business-oriented facilities such as festival marketplaces and entertainment districts (Boyer 1992; Hannigan 1998), sports arenas (Chapin 2004; Noll and Zimbalist 1997), convention centers (Sanders 2002), and office complexes (Fainstein 2011) play an influential and catalytic role in urban regeneration (Bianchini et al. 1992). Many cities have undertaken these types of development strategies as tools for city boosterism and economic revitalization.

These cultural strategies are considered essential in attracting the "creative class" (Florida 2002), as well as stimulating consumer spending. While certain theorists find that cities with a high level of these amenities have grown the fastest and see this as a positive development (Glaeser 2003); others argue that these strategies are predominantly aimed at elite and gentrifying areas or those seeking to attract tourists and thus promote greater social stratification (Zukin 1995; N. Smith 1996).

Critics also argue that the cultural economy drives redevelopment strategies toward the production of commercialized urban spaces, which are in turn geared primarily toward entertainment and tourism (Zukin 1995; Zukin 2009). The consequences of these strategies can be increased property values, gentrification, displacement, and inauthentic places.[3] Additionally, Zukin believes that "culture is […] a powerful means of controlling cities" (Zukin 1995: 1). Controlling cities in this sense refers to deciding who belongs in specific areas of cities and who doesn't. Nevertheless, the aesthetic improvements, city marketing, and economic growth that are associated with cultural development strategies are often touted as the necessary benefits in successful redevelopment projects (Florida 2002; Landry 2008).

Noting the increasing emphasis on the economic benefits of cultural initiatives, scholars have also

[3] Susan Fainstein (2001) questions whether "inauthentic" is an appropriate term to criticize new development; arguably, if it reflects underlying social forces, as for instance does Disneyland, then it is genuine.

pointed to the ever-increasing creation of commodified public spaces (Smith 1996; Zukin 1995). Zukin sees the production of cultural spaces in cities as a result of an organized effort among real estate interests, public-private partnerships, and community organizations. Zukin is implying that "middle class tastes" for cultural offerings—artist galleries, ethnic restaurants and shops, historic preservation, and mixed uses—are essentially part of a scripted program designed to increase city revenues and create spaces where the middle class will want to spend their disposable income, perhaps leading to gentrification. The prevalence of ethnic retail has also been shown to catalyze gentrification in Los Angeles and Toronto, where ethnic commodification attracted larger city audiences and served to revalorize local real estate markets (Loukaitou-Sideris 2002; Hackworth and Rekers 2005). Even when the change is ostensibly organic, as in emergent arts districts, planners are often working in tandem with artists and others to create economic development (Chapple, Jackson, and Martin 2010).

Finding: Cultural strategies can transform places, creating new economic value but at the same time displacing existing meanings.

Commercial and Retail Gentrification

Changes in the commercial environment of gentrifying neighborhoods have been seen as both an instigator and consequence of residential demographic change (Chapple and Jacobus 2009). Researchers have shown that retail and commercial amenities signal to middle-class residents that a low-income neighborhood is changing, consequently attracting new residents (Brown-Saracino 2004). On the other side, the shifting buying power and cultural preferences of new residents in gentrifying neighborhoods may influence the mix of retail in nearby commercial corridors (Chapple and Jacobus 2009).

At first, residents may have a positive response if new retail and services provide desired goods that were previously not available (such as Starbucks, CVS, etc.) and if that provokes only minimal displacement of other retail (Sullivan and Shaw 2011; Freeman 2006). However, new commercial amenities in gentrifying neighborhoods also imply rising property values, as well as an influx of white and middle-class residents, creating conditions for direct displacement through competition or rising rent (Zukin 2009). This association seems appropriate as local amenities, such as retail businesses, have been found to play an important role in household residential choice (Fischel 1985; Kolko, 2011).

Generally, commercial gentrification of urban areas involves complex issues of social class, cultural capital, and race (Zukin 2009: 48). Besides responding to a different consumer base, changes in the retail landscape reflect structural changes in the retail industry. Many scholars believe that commercial gentrification results in the disappearance of small, mom-and-pop stores and the arrival of national chains, such as CVS, Starbucks, Target (Loretta Lees 2003; Zukin et al. 2009; Fishman 2006; Bloom n.d.). Chains are usually interested in commercial districts at the mature end of any revitalization timeline: places with high foot traffic and strong demographics (Bloom, n.d.). Overall commercial rents increase because as local retail spending increases, more businesses compete to capture it (Kennedy and Leonard 2001; Chapple and Jacobus 2009).

The increase in rents can push out local businesses that are not drawing the same traffic as the chain stores and not generating similarly high sales volume. These local businesses may have had higher multiplier effects on the area, due to reliance on local suppliers and the recirculation of business owner profits (Civic Economics 2012). However, chains can also create their own customer traffic and that additional traffic can have positive effects on nearby businesses: as more

customers come into the commercial district, they encounter other businesses along the way (Bloom, n.d.). Moreover, they benefit consumers by offering goods and services at lower prices, likely offsetting any losses in the local multiplier. Others suggest that an influx of national chains can also indicate the changing corporate views of the commercial viability of the inner city (Porter 1995). Still, when Walmart or other big-box retailers come to town, there is net job and business loss, as well as decreases in retail wages (Dube, Lester, and Eidlin 2007; Ficano 2013; Haltiwanger, Jarmin, and Krizan 2010; Neumark, Zhang, and Ciccarella 2008).

Empirical studies on the nature of commercial change in gentrifying neighborhoods are mixed and scarce. Koebel (2002) measured the factors influencing changes in the number of neighborhood retail and service businesses in six cities, finding little relationship with neighborhood economic (e.g., median income) factors. Instead, he found that a substantial amount of the change in neighborhood commerce was related to property and location characteristics (such as redevelopment or revitalization projects). In contrast, Chapple and Jacobus (2009) found that overall retail establishment growth in the San Francisco Bay Area was associated with neighborhoods becoming middle- or upper-income rather than those that became bipolar. Meltzer and Schuetz (2011) analyzed changes among neighborhood businesses in New York City, finding that retail access improved rapidly in low-home-value neighborhoods that experienced upgrading or gentrification. The authors suggest that these results indicate that retail is quite sensitive to changes in neighborhood economic and demographic characteristics (Meltzer and Schuetz 2011). Finally, a study comparing retail change in California found that in gentrifying neighborhoods, new businesses grew more (in employment) than existing businesses in the 1990s, but not in the 2000s (Plowman 2014). This suggests the importance of extending the timeframe for the analysis of neighborhood change.

The relationship between transit-oriented districts and retail gentrification is similarly under-studied. Recently, Schuetz (2014) asked if new rail transit stations in California resulted in changes in retail employment, finding little support for such relationships. However, the absence of parking was found to be significantly associated with a decline in retail employment. Finally, in their analysis of the effects of TOD investments on small and ethnically owned businesses in Los Angeles County, Paul Ong and collaborators found that growth in Asian and small commercial establishments in TODs lagged behind the county average, despite the fact that real estate activity was higher in the TODs than for the county (Ong, Pech, and Ray 2014).

Finding: Commercial gentrification can also transform a neighborhood's meaning, but research is mixed on whether it is positive or negative for existing residents and businesses.

The Role of Public Investments in Neighborhood Ascent

The vast majority of gentrification literature has focused on private actors and capital. However, the public sector plays an important role in neighborhood transformation. While we have detailed the study of urban renewal and federal programs as part of the discourse on neighborhood decline, government has had a strong hand in neighborhood improvement as well, investing in physical infrastructure such as rail transit, schools, parks, and highways, as well as neighborhood-based organizations. These initiatives date from at least the 1950s urban renewal and public housing development and include more recent interventions like the Empowerment Zones of the 1980s and 90s, HOPE VI in the 1990s and early 2000s, and today's Choice Neighborhoods and Promise Zones programs, among many others.

As described above, in the 1980s persistent poverty in inner-city areas, particularly among the African-American community, led to extensive scholarly inquiry, and federal housing policy realigned to focus on the deconcentration of poverty through the development of mixed-income housing and housing mobility programs (Goetz 2003). This shift in federal policy "to encourage deconcentration is based on the consensus among policy makers and scholars that high concentrations of very-low-income households in housing" is detrimental (Popkin et al. 2000, 928). Federal programs promoting mixed-income housing development aimed to alleviate poverty, however have had mixed results (Joseph 2006).

Recently, critics of these programs have raised concerns that mixed-income developments displace those living in poverty rather than supporting their social mobility by catalyzing other upgrades and development (Bridge et al. 2012). These critiques have placed government policy and programs at the center of longstanding debates about the catalysts and consequences of neighborhood ascent, suggesting that certain housing policies represent "state-sponsored gentrification" (Bridge, Butler, and Lees 2012).

In addition to federal housing policy, numerous other federal, state, and local government investments have the potential to significantly alter the physical and social makeup of low-income neighborhoods.

Although few studies have looked at the impact of public investments on neighborhood demographic change, there is a significant body of literature on the impact of transit on property values, which is intimately tied to the social status of the people who live there. In the next section we review the relevant body of literature to begin to relate public investments in infrastructure to neighborhood demographic change, with a specific focus on transit.

Rail Transit

Transit and transit-oriented districts (TODs) are viewed as desirable amenities in urban neighborhoods due to their accessibility. Scholars have found that areas adjacent to transit stops often experience thriving commercial activity with the introduction of shops, restaurants, and other businesses that attract commuters and non-commuters (Bluestone, Stevenson, and Williams 2008). However, disadvantages also exist from being "too close" to transit, which can result in heightened noise, congestion, pollution, and traffic (Cervero 2006; Kilpatrick et al. 2007).

In a review of existing research on the topic, (Giuliano and Agarwal 2010) state that, "the literature does not establish unambiguously whether or not rail transit investments get capitalized in property values." They attribute inconsistent findings in part to differences in research methods and in the local conditions in which transit investments are made. They note that transit systems have an appreciable impact on accessibility only where road networks are insufficient for handling travel demands (i.e., where congestion is severe). Other researchers, however, argue that the accessibility benefits of living near transit outweigh the potential nuisance effects, and that proximity to public transit often leads to higher home values and rents (Wardrip 2011).

Most empirical studies on the impact of transportation investments focus on changes in property values rather than land use, household, or racial transition. (Landis et al. 1995) suggest this may be due to the fact that property value data is more widely available than data such as land use. In general, the literature agrees that transport investments (new stations, TODs) have economic benefits primarily if they improve access significantly. Households with easy access to public transit

are able to spend less on transportation and can thus afford to spend more on housing (Kilpatrick et al. 2007). Economic theory suggests that the value of decreased travel time should be reflected in home prices, as reviewed in Hess and Almeida (2007). Benefits tend to be the highest near, but not too near, network access points such as rail stations or freeway ramps.

Several recent literature reviews have summarized research related to the home price premiums that come with proximity to transit. These premiums vary significantly. (Cervero and Duncan 2004) found that the premium for home prices ranged from 6 percent to 45 percent (2004). Another literature review set the range between 3 percent and 40 percent (Diaz 1999). A third review, involving heavy and light rail systems only, found a maximum premium of 32 percent, although some studies found no effect, while others found negative effects (Hess and Almeida 2007). Summarizing the available research is difficult, because as (Duncan 2008, 121) argues, generalization is problematic owing to different methodologies and contexts. He concludes: "The most that one might safely generalize from the body of literature is that properties near stations sell at small to modest premiums (somewhere between 0% and 10%)."

There are two common methods to study the effect of transit proximity on housing costs. One is to compare residential prices near transit with similar homes farther away, using a hedonic price model to separate out the effects of housing characteristics from the impact of location.[4] The other method, "Pre/Post studies," which examines prices in an area before and after the initiation of transit, represents another, albeit less utilized, method to examine the effect of transit on housing costs.

In hedonic price models, the independent variable for modeling the price effects of transit is most often the distance from the nearest transit station (Chatman, Tulach, and Kim 2012; Duncan 2008; Cervero and Duncan 2002a), measured along streets or in terms of distance rings. Two earlier studies from Toronto have utilized weighted travel-time-based measures as an alternative to distance travelled (Bajic 1983; Dewees 1976). Hedonic price models may also use monetary savings[5] as an independent variable, inquiring how travelers respond when faced with a tradeoff between time and money, for example, when offered the option to pay extra for a faster trip (Nelson 1992; Lewis-Workman and Brod 1997; Chen, Rufolo, and Dueker 1998; Gatzlaff and Smith 1993; Wardman 2004). "Pre/Post" studies, although less commonly used because they require access to longitudinal data (Chatman et al. 2012), are considered "more optimal" because they make it easier to establish causal links (Duncan 2010: 5). A summary of the literature using hedonic price models and "Pre/Post" studies is included in the Appendix B.

Overall, the impact of transit on home values can vary depending on a number of mediating factors. Wardrip (2011) outlines several reasons, which include: housing tenure and type, the extent and reliability of the transit system, the strength of the housing market, the nature of the surrounding development, and so on. In an area with a strong housing market and a reliable transit system, the price premium may be much higher than the average. Additionally, effects may vary for different stations within a single market. For instance, averages can hide a lot of variation, and transit

[4] The basic premise of the hedonic pricing method is that the price of a marketed good is related to its characteristics. In the case of housing, this relates to square footage, number of rooms, amenities, etc. (http://www.ecosystemvaluation.org/hedonic_pricing.htm).

[5] Total travel time costs are the product of the amount of time (minutes or hours) multiplied by unit costs (measured as cents per minute or dollars per hour). Generally, travel time unit costs are calculated relative to average wages (Litman, 2011: 4). Personal travel time unit costs are usually estimated at 25-50% of prevailing wage rates, with variations due to factors such as age, income, or length of commute (Waters 1992; Litman 2007).

stations may have little or no impact on housing prices in some neighborhoods but a significant impact in others (Wardrip 2011). Some studies have also found that transit expansion plans may drive increases in property values before anything is built (Knaap, Ding, and Hopkins 2001). Finally, research suggests that heavy rail systems have a greater impact on property values than light rail systems. This is likely due to heavy rail's greater frequency, speed, and scope of service as compared to most light rail networks, as reviewed by (Brinckerhoff 2001; Lewis-Workman and Brod 1997; Landis et al. 1995).

Rail impacts on Commercial Land Values

Most studies have focused on the impact of transit investment on residential properties. However, a few studies have examined the relationship between transit and commercial property values. A study of Northern California's Santa Clara County light-rail system found that properties within a half-mile of stations experienced rent premiums, and those that were a quarter- to a half-mile away were worth even more (Weinberger 2001). In another study of Santa Clara, (Cervero and Duncan 2002b) found that the commercial property land values were higher for commuter rail access than for light-rail access, which is the opposite result observed for apartments in the same city (Cervero and Duncan 2002c). In a meta-analysis of existing studies, Debrezion, Pels, and Rietveld (2007) found that commercial properties within a quarter-mile of the station were 12.2% more expensive than residential properties located the same distance away. Farther away from the station, residential properties received a higher premium than commercial properties.

Finding: New fixed-rail transit has a generally positive effect on both residential and commercial property values, but its impact varies substantially according to context.

Bus and Bus Rapid Transit

Several scholars have described Bus Rapid Transit (BRT) as an attractive modal transit option (R. B. Diaz and Schneck 2000; Levinson et al. 2002; Polzin and Baltes 2002; Vuchic 2002). The attributes favoring BRT are its lower capital cost relative to other modes (such as fixed rail) (US GAO 2001) as well as its flexibility in implementation and operation (Jarzab, Lightbody, and Maeda 2002).

There is limited evidence about the relationship between land values and BRT (Rodriguez and Targa 2004; Johnson 2003). Similarly, traditional bus service is rarely considered when discussing the impact of transit on housing costs. In their review of the literature, Hess and Almeida (2007, 1043) explain that "…property values near bus routes have only modest gains, if any, from transit proximity, because most bus routes lack the permanence of fixed infrastructure."

Much attention and research has been focused on Bogota, Colombia's BRT TransMilenio. What makes TransMilenio an interesting case study is that affordable transport was coupled with affordable housing initiatives. This has been made possible with an innovative land-banking/poverty-alleviation program, called Metrovivienda, which was introduced in 1999 (Cervero 2005). Under this program, the city acquires land and provides public utilities, roads, and open space. Afterwards property is sold to developers with the stipulation that average prices be kept under a certain price and affordable to families with incomes of US$200 per month. An important aspect of the Metrovivienda program is the acquisition of land well in advance of the arrival of the BRT services. This has enabled the organization to acquire land before prices become inflated by the arrival of the BRT. This is important because, as a recent study found, those residing close to TransMilenio stations pay higher monthly rents: on average, housing prices fell between 6.8 and 9.3 percent for every five minutes' increase in walking time to a station (Cervero 2005).

Thus, acquiring land in advance has kept prices affordable for low-income households. However, more recent work has shown that by failing to leverage development around BRT stations, the TransMilenio system has created regional mobility at the expense of accessibility for the poor (Cervero 2013).

In North America, the relationship between accessibility to BRT and land values is only examined by a handful of studies focusing on bus priority treatments (high-occupancy-vehicle (HOV)-bus lanes) and transit ways. In an early study, (Knight and Trygg 1977) examined HOV-bus lanes in Washington, D.C.; California; Seattle; and Florida. They relied on previously published reports, interviews, aerial photographs, and other secondary sources available at the time to conclude that exclusive bus lanes incorporated into highways appear to have no impact on either residential or commercial development. A later study by Mullins, Washington, and Stokes (1990) found that the BRT in Ottawa, Canada, appeared to have some effect on land development in areas surrounding stations. A review of studies from Houston, Pittsburgh, Pennsylvania; and San Francisco conducted by Rodriguez and Targa (2004) revealed that bus transit had no impact on either residential or commercial development. A hedonic analysis applied to Los Angeles's BRT, one year after its initiation, did not detect any evidence of benefits to nearby multi-family parcels (Cervero and Duncan 2002a). More recent work, however, found that Los Angeles' Orange BRT Line had an effect on the neighborhood real estate market. Between 2000 and 2012, areas near the Orange Line saw median rent increase by 25% compared to 15% in the control area. Renter occupancy increase by 9% compared to 0% in the control area, and home value increase by 47% compared to 34% in the control area (Brown 2014). No significant differences in median income or household vehicle ownership were found; however, other demographic characteristics (growth, education, and race) were found to significantly change.

Rodriguez and Targa (2004) suggest that these mixed results could be partially explained by the BRT's lack of fixed guideways, as well as the cross-sectional research design and the newness of the service. Indeed, a study of a 25-year-old BRT system in Pittsburgh found a significant price premium for homes selling near it (Perk and Catala 2009). The implication is that where a BRT system can bring lasting improvements in accessibility on par with a fixed-rail transit system, housing markets may respond accordingly.

Finding: Preliminary evidence suggests that BRT has limited or no effects on local property values.

Transit-Induced Gentrification

Although the vast majority of the literature has focused on the impacts of transit investments and planning on real estate value, a number of scholars are beginning to investigate the relationship between transit investments and the demographic shifts common in gentrifying neighborhoods as well (Lin 2002; Chapple 2009; Kahn 2007; Pollack, Bluestone, and Billingham 2010; Dominie 2012; see Appendix D for a summary of L.A.-specific TOD studies and policy reports). Studies have also found that the real estate premiums associated with rail investment can alter the demographic composition of the surrounding neighborhood (R. Diaz 1999; Cervero and Duncan 2004; Lin 2002).

There are several factors that scholars cite as the likely cause of gentrification near transit. The demand-side argument claims that transit is likely to spur gentrification when the new transit modes (rail, bus, etc.) provide a viable alternative to the car, thereby attracting higher-income

households. The reduction in transportation costs for residents is also thought to increase land values, attracting higher-value uses and higher-income residents (TCRP 2004).

The supply-side argument claims that transit is likely to cause gentrification when it counters pre-existing patterns of disinvestment. Thus, gentrification around transit investments is likely to occur when there is a credible commitment to large-scale investment: reinvestment in a disinvested neighborhood is likely when it appears that an actor (a state agency, financial institution, or large landowner) demonstrates a commitment to refurbish the physical environment at a scale capable of influencing the area's land or housing market (Knaap, Ding, and Hopkins 2001; N. Smith 1979). Large transit investments appear to have been used successfully and intentionally to demonstrate this type of commitment (Pollack, Bluestone, and Billingham 2010).

Pollack and coauthors (2010) affirm that transit can be a catalyst for neighborhood renewal, and that such improvements to neighborhood accessibility could potentially "price out" current residents because of rising property values. Despite the connections between improved accessibility, higher property values, and gentrification, only a few studies address these issues explicitly, and few look at issues of income and race (Lin 2002; Kahn 2007; Pollack et al. 2010; Dominie 2012). Thus, while Lin (2002) and Kahn (2007) develop models to explain the relationship between neighborhood gentrification and transit, they do not take into account race and ethnicity. See Appendix C for further detail on these studies.

Other Public Investments

Government investment in a wide range of neighborhood infrastructure and services can also have significant impacts on property values and neighborhood change. In this section we outline the literature on the impact of schools, parks and open spaces, and highways on housing prices.

Schools

The quality of public schools is widely believed to be a key determinant of housing prices (Max 2004). A number of studies employ hedonic regression models to examine this relationship. In 1969, Oates documented a positive relationship between school expenditures and housing values in 53 northern New Jersey municipalities. Following Oates' work, a number of researchers have estimated similar relationships. Most of these studies have produced similar findings. For instance Dubin and Goodman (1982) estimated the impact of school performance and crime measures on housing prices in Baltimore, finding a significant relationship between real estate value and school characteristics such as the pupil-to-staff ratio, average teacher experience, percent of staff with a graduate degree, and third and fifth grade test scores. In Minnesota, Reback (2005) identified the capitalization effects of a school choice program, finding that the adoption of an inter-district open enrollment policy weakened the link between local school quality and property values.

Parks and Open Spaces

Extensive research has tried to value urban parks, forests, and open space through analysis of property data and stated preferences. The majority of these studies use hedonic analysis of property sales data, finding that home values increase with proximity to a park (Bolitzer and Netusil 2000; Acharya and Bennett 2001; Lutzenhiser and Netusil 2001; Troy and Grove 2008; V. K. Smith, Poulos, and Kim 2002) looked specifically at the price effects of urban greenways, or linear

areas of open space along rivers, streams, or abandoned railroad corridors in Austin, finding such adjacency resulted in significant increases in property values. Studies often distinguish broadly between protected open space, such as public parks and land under conservation easement, and developable open space, such as privately owned agricultural land (Irwin and Bockstael 2001; Irwin 2002; Geoghegan 2002; Bucholtz, Geoghegan, and Lynch 2003). This difference is relevant because studies have found that preserved open space surrounding a home increases home value, while developable open space has a lesser, insignificant, or negative effect on home value (Anderson and West 2006). Finally, in a study of Baltimore, Troy and Grove (2008) found that crime is a critical factor conditioning how residents perceive parks and how this is reflected in the housing market.

Highways

Studies of the impact of highways on nearby land and housing values date to the beginnings of the Interstate Highway Program (Adkins 1959; Mohring 1961). Huang (1994) reviewed the hedonic price literature, finding that studies from the 1950s and 1960s usually revealed large land price increases near major highway projects. Later studies, from the 1970s and the 1980s, typically showed smaller and often statistically insignificant land price effects from highway projects. Both Giuliano (1989) and Huang (1994) argued that this happens because as the highway system was developed in many urban areas, the value of access to any particular highway was reduced because accessibility was then generally good throughout the network. Huang (1994) also noted that for residential properties, noise and other disamenities reduce the value of locating close to a highway. Finally, using access rather than distance, Voith (1993) found that highway access (measured by travel time by highway to downtown) influenced housing prices in the Philadelphia area and that the magnitude of that effect increased during the 1980s.

Finding: Proximity to high quality schools and parks, as well as access to highways, increases home values.

Understanding Negative Impacts of Gentrification: Displacement

Gentrification scholarship has used primarily qualitative research methods to uncover the causes and reveal the motivations of individual actors in neighborhoods. Unlike scholarly discourse on decline and revitalization in the 1950s and 1960s, the gentrification debates since the 1970s have largely neglected the public sector. Attention is shifting today, however, as increasingly, particular kinds of federal investments – specifically in mixed-income housing – have raised questions about state-sponsored or -catalyzed gentrification. The primary concern of gentrification is one of its negative outcomes: displacement[6]. Given today's landscape of public investment, advocates and scholars are increasingly concerned that public investments may create a situation in which incumbent residents have fewer options than they did before and are forced out or cannot move in.

To fully understand this concern, we now turn to review the literature on displacement. This literature has dominated much discussion by gentrification scholars since the early 1990s, and represents a departure from the methods employed until then. As we will describe, scholars

[6] Other negative consequences of gentrification that are not reviewed here include a sense of loss of place and belonging and erosion of social networks, community resources, and political power, among others.

became increasingly concerned with measuring displacement, assessing its extent, and predicting it as a result of first public and then private revitalization efforts.

Consistently activists, residents, and social justice actors identify displacement as the biggest impact of concern resulting from neighborhood revitalization and gentrification. Anxieties about residential, retail, and job displacement reflect the lived experience of neighborhood change and the social memory of displacements past. Yet social science research attempting to quantify the scale and nature of residential displacement has come up short. Why the discrepancy?

In this section we review the body of research on residential displacement related to gentrification, neighborhood investment, and revitalization. By tracing attempts to define and measure displacement, we highlight significant methodological limitations including data availability and narrow definitions of displacement and explore specific interpretations of the significance of displacement, which potentially mask the impacts on communities.

Defining Residential Displacement

The Federal Urban Renewal program, local redevelopment efforts, and interstate highway construction of the 1950s and 60s forcibly displaced communities of color and low-income communities in urban neighborhoods en masse. Following these policy efforts, urban activists were particularly sensitive to the risks of displacement and the role of government in facilitating displacement. However, the nature of this displacement in the 1970s was no longer solely driven by forced removal by public action. Instead, a growing "back to the city" trend perceived to be largely driven by private actions and individual preferences, albeit with significant yet perhaps more subtle influences from the public sector[7], began to dominate the public concerns with neighborhood change and residential displacement (Clay 1979).

In 1978 the United States Department of Housing and Urban Development (HUD) sponsored the first of a series of reports on revitalization and displacement called "Urban Displacement: A Reconnaissance" (Grier and Grier 1978). In this report, authors Eunice and George Grier listed 25 factors that might lead to the involuntary movement of people from their place of residence (Figure 1.1). These factors imply a diverse set of actors: natural disasters; building owners who initiate condominium conversion or rent increases; local government conducting proactive code enforcement and planning decisions; federal government initiating large-scale urban renewal; and banks engaging in redlining practices, to name a few.

[7] Although large-scale urban renewal has dominated the social imagination about the ways in which the public sector can influence neighborhood change and displacement, myriad public interventions can influence the composition of neighborhoods: from tax abatement programs to zoning decisions and pro-active code enforcement.

Figure 1.1 "Some Conditions Resulting in Displacement in Urban Neighborhoods"
Source: (Grier and Grier 1978, 2)

In an effort to provide a definition of displacement that encompasses these various drivers, Grier and Grier proposed the following definition, which has been adopted by numerous researchers and agencies in subsequent decades:

> "Displacement occurs when any household is forced to move from its residence by conditions which affect the dwelling or immediate surroundings, and which:
> 1) are beyond the household's reasonable ability to control or prevent;
> 2) occur despite the household's having met all previously-imposed conditions of occupancy; and
> 3) make continued occupancy by that household impossible, hazardous or unaffordable." (Grier and Grier 1978, 8)

Although they use the term "forced" in their definition of displacement, Grier and Grier do not equate "forced" with involuntary. In fact, they describe the fact that many who are displaced are subject to a variety of actions or inactions that can be frank or subtle, therefore concluding:

> "For most residents to move under such conditions is about as 'voluntary' as is swerving one's car to avoid an accident. By the time the landlord issues notices of eviction, or the code inspector posts the structure as uninhabitable, few occupants may be left. Therefore we cannot define displacement simply in terms of legal or administrative actions – or even draw a clear-cut line between 'voluntary' and 'involuntary' movement." (p.3)

Newman and Owen (1982) extend the critique of the false distinction between voluntary and involuntary moves to moves driven by economic reasons when stating that "low-income households who experience extremely large rent increases may technically 'choose' to move, but the likelihood that they had any real alternative is very small" (p.137).

In an effort to categorize the causes of displacement, Grier and Grier distinguish between disinvestment displacement, reinvestment displacement, and displacement caused by enhanced housing market competition, despite their obvious inter-connections. Disinvestment-related displacement describe the conditions under which the value of a property does not justify investing in its maintenance, thereby resulting in decay and abandonment. Reinvestment-related displacement refers to the case where investments in a neighborhood result in increased rent to a point where it's profitable to sell or raise the rent, and tenants are forced to leave. The authors are

careful to note that "unrelated as they seem, these two conditions of displacement may be successive stages in the cycle of neighborhood change" (p.3). Finally, enhanced housing market competition referred to broad shifts in the national and regional housing market, which they argue have an even larger impact than disinvestment or reinvestment forces, although again acknowledging the inter-relationship among the three. As an example they discuss the needs of the then-young baby boom generation that were not being met by housing production of mostly single-family suburban homes, thus resulting in pressures on the pre-existing urban housing stock.

The distinctions in these three types of displacement pressures resurfaced eight years later when Peter Marcuse analyzed displacement in New York City (Marcuse 1986). Marcuse argued that when looking at the relationship between gentrification and displacement one must first consider the disinvestment of urban neighborhoods and subsequent displacement, which makes land ripe for investment with gentrification of "vacant" land. From this perspective gentrification can happen long after abandonment-induced displacement. Therefore, he argues, most gentrification-induced displacement studies significantly underestimated the magnitude of the problem and therefore "chains" of displacement must be considered. He further distinguishes between displacement caused by physical reasons (e.g., water is turned off, evictions, rehab, etc.) and economic causes (e.g., rising rent). In addition, Marcuse introduces the concept of exclusionary displacement, modifying Grier and Grier's definition of displacement to define exclusionary displacement as:

> "Exclusionary displacement from gentrification occurs when any household is not permitted to move into a dwelling, by a change in conditions, which affect that dwelling or its immediate surroundings, which:
> a) is beyond the household's reasonable ability to control or prevent;
> b) occur despite the household's being able to meet all previously-imposed conditions of occupancy;
> c) differs significantly and in a spatially concentrated fashion from changes in the housing market as a whole; and
> d) makes occupancy by that household impossible, hazardous or unaffordable." (p. 156)

Although Marcuse's four categories of displacement (e.g., direct/physical, direct/economic, chains of displacement, and exclusionary) provide the most comprehensive definition available, he warns that to sum across the categories would lead to an over-estimate of displacement as there is considerable overlap between them; yet to exclude any source could produce an underestimate.

Despite these early attempts to define displacement and the fact that most authors have formally adopted one or the other definition, in operationalizing the term for the means of study, most researchers have narrowly defined displacement as evictions or unaffordable price increases. This narrow focus stems from two factors. Researchers have access to limited data and are challenged to impute the motivation behind household moves. Tracking which exits from a neighborhood are displacement-motivated is difficult; measuring displacement is akin to "measuring the invisible" as the population under question has moved away from the place of study (Atkinson 2000). Perhaps because of this, definitions and operationalization of displacement is often driven by the data available. Furthermore, scholars often define displacement based on the scope and sponsor of their research agenda. For instance, many of the early HUD-funded studies on displacement were specifically concerned with the role of HUD programs in residential displacement and therefore narrowly defined it as displacement resulting from public action (US HUD 1979). Another study (Schill, Nathan, and Persaud 1983) that focused on revitalization-induced displacement defined displacement as that occurring as a result of "neighborhood reinvestment or upgrading" (p.47).

For the purposes of this literature review we do not adopt a singular definition of displacement. In our effort to review and evaluate the disparate literature on residential displacement, however, we adopt the framework of Marcuse (1986) and Grier and Grier to classify the types of displacement studies analyzed. As each of the studies reviewed below utilizes slightly different definitions of displacement in their analysis, we make a point to highlight their operating definitions in addition to the methods and results of their study.

Finding: Displacement takes many different forms—direct and indirect, physical or economic, and exclusionary—and may result from either investment or disinvestment.

Measuring Residential Displacement

Researchers have varied in their approaches to studying gentrification/revitalization-induced displacement. Studies use qualitative and quantitative methods to answer a variety of questions ranging from the nature of displacement (e.g., how many and who gets displaced, where they move to, who is most vulnerable, and so on) to the causes (e.g., changes in rent, conversions to condos, disinvestment, and the like.) and consequences of displacement (e.g., neighborhood destabilization, re-segregation, crowding, disparities in rent burdens, satisfaction with new neighborhoods, and so on). For most of the studies reviewed, a number of questions are addressed in each, making it challenging to categorize studies by the questions they seek to answer. Instead, we review the studies on residential displacement chronologically; because of shifts in understanding and interests, data availability, and statistical methods, the timing of the study largely coincides with methodological approaches.

In the following sections, we review specific studies and then compare across studies to identify common methodological challenges, persistent gaps in inquiry, and promising indicators to include in our research. We proceed by summarizing relevant studies on displacement along the following dimensions: a) the context in which the studies were undertaken and the resultant questions that preoccupied them, b) the research approach, c) the source and type of data used, d) their working definition of displacement and gentrification/revitalization, e) their results, and f) the strengths and shortcomings of the study.

As mentioned above, quantitative studies on displacement found their origins in the late 1970s as urban America was witnessing a wave of downtown reinvestment following the urban crises. Because of the newness of the phenomenon, many early studies on displacement were concerned with quantifying its magnitude to determine if it was a "significant" phenomenon. In the late 1970s, for instance, HUD was actively considering the adoption of policies to address displacement associated with HUD's programs. In the 1979 "Displacement Report" they reviewed a series of case studies and national datasets to evaluate the nature and magnitude of the "displacement problem." Although it cited Grier and Grier's definition of displacement, the report mostly focused on displacement occurring as a result of eminent domain related to federal, state, or local government activity. Emphasis was placed on the results from the nationally representative American Housing Survey from which the report estimated that nationally, independent of neighborhood or city of residence and independent of the vulnerability of the household (i.e., income or race) over half a million households were displaced each year. When evaluated in light of the fact that 20% of all United States households move each year and in conjunction with data on the scale of urban revitalization the HUD report concluded that "the population and economic trends represented by 'revitalization' in urban areas are far too small to slow significantly or to reverse the movement to the suburbs and the loss of economic activity by central cities" (US HUD 1979, iii). These

conclusions were reached despite citing evidence from case studies in revitalizing neighborhoods in Seattle and Washington, D.C., which showed that nearly 20% of people moving out of revitalizing neighborhoods were displaced. This early study and its ambiguous criteria against which it evaluated the "significance" of the displacement phenomenon would prove to be a common theme in future studies that have displayed a lack of transparency and little consistency in how to assess displacement's significance.

One of the outcomes of HUD's initiative, however, was to invest in a series of research studies to better understand and quantify the magnitude and impacts of neighborhood revitalization and displacement. Two HUD-funded studies stand out for their methodological rigor. These studies identified and surveyed displaced households from revitalizing neighborhoods to find out their reasons for moving out. The first, a study of "Market Generated Displacement" (NIAS 1981), was concerned with the rapid revitalization of San Francisco's Hayes Valley neighborhood and the potential impacts on pre-existing residents. The researchers conducted a survey of previous residents who left the neighborhood, new residents who moved in, and residents who remained. They found that from 1975-1979, one out of four of the out- and intra-neighborhood movers from their sample were displaced, which they defined as any non-voluntary reason for moving except lifecycle factors (i.e., divorce, unemployment). They also found that displacees of Hayes Valley were more likely to be black, less educated, poor, renters, elderly, and living alone in comparison to in-movers and stayers. Displacees moved out for a variety of reasons, including investment-related causes (i.e., rising rent, eviction, condo-conversion), but also disinvestment-related reasons (i.e., crime, poor housing quality, poor schools.), calling into question both the nature and timing of neighborhood revitalization, disinvestment, and displacement, making it hard to identify a linear relationship or a before and after period. They did not, however, explicitly link information on the public or private revitalization investments in the neighborhood with displacement, and their study lacked any comparison to non-revitalizing neighborhoods, thereby limiting their ability to contextualize their results on the displacement impacts of revitalization.

Asking similar questions about the impacts of revitalization on residential displacement, in 1983 Michael Schill and coauthors published a study on displacement trends in nine revitalizing neighborhoods of five cities[8] (Schill, Nathan, and Persaud 1983). They surveyed and interviewed out-movers from these neighborhoods to better understand the frequency and effects of neighborhood reinvestment. From this sample, they found that 23% of out-movers in 1978-80 were displaced, which they defined as the following reasons for moving out of their neighborhood: 1) the rent was increased too much, 2) they were evicted or 3) the house they were renting was sold. Using statistical regression, Schill and coauthors found that crowding, frequency of previous moves, unemployment, and marital status predicted displacement. Although they conclude that the "advantages of neighborhood reinvestment outweighed its disadvantages" (p.7), their research also suffered from data limitations given the potential under-sampling of the most vulnerable and more transient households, since they were less likely to be detected by the door-to-door canvass used to construct the list of out-movers, as well as the absence of control neighborhoods. Furthermore, these authors look only at a two-year timeframe and do not define the stage of revitalization each of the neighborhoods were experiencing, thereby potentially missing what Marcuse would describe as chains of displacement, in addition to ignoring exclusionary displacement effects of revitalization.

In one of the first studies to try to estimate the national displacement rate associated with urban revitalization, Newman and Owens (1982) used longitudinal data from the Panel Study on Income Dynamics to estimate the scale, nature, and impacts of displacement. They considered people to be

[8] Boston, Cincinnati, Richmond, Virginia, Seattle, and Denver

displaced if they moved out of their previous residence because of: the conditions of the house/neighborhood, public action, and eviction by the landlord because of sale or reoccupation. Newman and Owens found that the average annual rate of displacement between 1970 and 1977 was roughly 1 percent, however when calculated as a fraction of all families who moved, the proportion was 5 percent and of urban families 8.2 percent. Using this dataset the authors were able to follow people over time, yet they lacked information on neighborhood conditions, thereby limiting their ability to make inferences about revitalization-induced displacement.

Research on gentrification and displacement waned in the late 1980s and early 1990s. However, in many respects the economic boom of the 1990s reinvigorated both the revitalization of downtown areas and the study of gentrification-induced displacement. Although sharing in some of the questions and methodologies of the previous literature, the new wave of displacement studies capitalized on larger, more detailed datasets, allowing for the introduction of control neighborhoods and the use of more advanced statistical techniques in an attempt tease out the independent effects of gentrification on residential displacement. Many of these studies also pay much closer attention to the impacts on disadvantaged households rather than studying displacement of the general population.

In one of the first attempts to use more detailed, disaggregate data to understand the displacement impacts of gentrification, Rowland Atkinson (2000) combined cross-sectional and disaggregate longitudinal census data for London. To proxy gentrification, he used increases in the number of professionals and managers in the neighborhood and approximated displacement by decreases in the number of residents from the following vulnerable groups: working class, unskilled labor, renters, unemployed, people of color, elderly and single-parent households. From this analysis he found a clear link between the rise in gentrification and displacement of vulnerable groups. Atkinson was one of the first to focus on specific vulnerable populations in his operationalized definition of displacement. Yet he cautioned that the study at the large ward- and district-scale with "noisy" data does little to provide a deeper understanding about the impacts of displacement, for which he suggests more qualitative research.

In response to the growing negative perception about the impacts of gentrification, in 2001 Jacob Vigdor asked if low-status households were more likely to exit housing units in gentrifying zones relative to other parts of the Boston metropolitan area. He analyzed aggregate census data and the American Housing Survey data by running a regression of residential stability on location in a gentrified zone, which had populations of roughly 100,00-200,000 people. Although he did not limit his analysis to this, he generally defined preference-driven gentrification as increased educational attainment and income-driven gentrification as increased owner-occupied housing values. In addition, he did not specify what constitutes displacement, but rather proxied it as any exit from a neighborhood that falls within a general "gentrifying region." Vigdor found that housing turnover was greater in gentrifying zones; however, educational attainment, which he used as an indicator of poverty, appeared to predict housing stability rather than turnover when interacted with location in a gentrified zone. Furthermore, he found that a poor household was more likely to exit poverty than to be replaced by a non-poor household. Vigdor's study emphasized the difficulties in characterizing the counterfactual: what would have happened to low-income residents if gentrification had not occurred? He chose to compare the moves of low-status households in gentrifying zones to non-gentrifying zones; however, the large size of the zones could significantly smooth over neighborhood variability, thereby limiting his ability to answer the question he asked.
Lance Freeman and Frank Braconi (2004) hailed the potential benefits of affluent households moving back to central cities and sought to help governments evaluate the potential negative consequences of policies to promote gentrification. Applying similar methodologies as Vigdor for

New York City, with the distinct advantage of having a higher spatial resolution and disaggregate data available from the New York City Housing and Vacancy Survey (NYCHVS), the authors compared the exit rates of poor households in gentrifying sub-boroughs (roughly 47,000 households) to the exit rates of the poor in low-income neighborhoods that did not gentrify. They classified a sub-borough as gentrifying based on higher rates of growth in white populations, monthly rent, educational attainment, and median income in contrast to other New York City neighborhoods. They did not, however, include an operational definition of displacement beyond neighborhood exits.

Controlling for life-cycle variables (e.g., age, marital status, children) and housing unit characteristics (e.g., rent, tenure, overcrowding in their regression, they found that poor households residing in gentrifying neighborhoods were less likely to move than poor households residing elsewhere. They do note, however, people moving into gentrifying neighborhoods were of a higher socio-economic status than those leaving. Despite these indications of exclusionary displacement, however, Freeman and Braconi state "a neighborhood could go from a 30% poverty population to 12% in as few as 10 years without any displacement whatsoever, providing that all vacated units are rented by non-poor households" (p.50). The authors also note that their findings could be due to the large spatial area and that the lower rates of residential mobility could be due to a lack of affordable housing in familiar nearby locations. In their later study, Newman and Wyly (2006) critiqued Freeman and Braconi's findings, pointing to the "chain of displacement" arguments that the "gentrified" neighborhoods had already seen the displacement of poor households in decades earlier. Furthermore, they argue, the non-gentrifying poor neighborhood control groups included residents of some of the poorest areas of the city with respective high turnover rates, creating an artificially high standard to use as a control.

Building off this analysis with a nationally representative sample, in his 2005 analysis of data from the Panel Study on Income Dynamics, Freeman compared displacement in poor gentrifying census tracts to poor census tracts that did not gentrify. He defined gentrifying census tracts as those disinvested, low-income central city tracts that experienced increased investment and educational attainment. Freeman considered displacement-motivated moves as those where residents wanted to consume less space, pay less rent, were evicted, got divorced, joined the armed forces, or other involuntary reasons. Freeman found that rental inflation was a significant predictor of mobility, and displacement was higher in gentrifying as opposed to non-gentrifying tracts. He also found that for in-movers the poverty rates declined and educational levels increased more sharply in gentrifying than in non-gentrifying neighborhoods. Freeman also found that moves originating in gentrifying neighborhoods were more likely to end outside of the neighborhood when compared to the counterfactual non-gentrifying neighborhoods. He defined this pattern, however, as succession (or reverse filtering), rather than exclusionary displacement. Despite his significant findings, Freeman concluded that the overall rate of displacement was very small, since the probability of a household in a gentrifying neighborhood being displaced was "only" 1.3% (Freeman 2005). Given the fact that this data is nationally, not locally representative, the results likely mask a great deal of heterogeneity between metropolitan areas and even within Census tracts.

In response to the media's interpretation of the previous studies that gentrification benefits all, Newman and Wyly (2006) reanalyzed the NYCHVS data, adding a qualitative component to their research. Given the limitations from the dataset, they were only able to look at the sub-borough in their quantitative analysis. Narrowing their analysis of displacement to households that moved for reasons of housing expense, landlord harassment, and displacement by private action (condo conversion, for example), they found between 6-10% of all moves in New York City from 1989 to 2002 were due to displacement. They argued that this could be a significant underestimate,

however, due to the inability of the NYCHVS data to capture "doubling up" or staying with relatives, which they found from their qualitative analysis to be an important coping strategy. For the qualitative component of their study, the authors interviewed 33 key informants to assess the catalysts for physical, demographic, political, and economic change. Their interviews revealed tremendous displacement pressures resulting in crowding, homelessness, or people moving out of the neighborhood or even city. None of these dynamics, the authors note, were captured in the NYCHVS. Despite the significance of their modeled results, the authors emphasize the low predictive power of the model, which they attribute to deficiencies in the dataset. Furthermore, and similar to the limitations of previous studies, their spatial unit of the sub-borough was too large to fully understand neighborhood dynamics.

In a more recent analysis, McKinnish et al. (2010) analyzed the confidential national Census Long Form data from 1990 and 2000 to understand who moves into and out of gentrifying neighborhoods, which they defined as low-income tracts in 1990 where the average household income increased by more than $10,000. They did not explicitly define displacement, although they did look at exit rates of specific vulnerable population groups. The authors found that migrants into gentrifying tracts were more likely to be higher-income, college-educated, younger, white, and black, and less likely to be Hispanic, have children, and be immigrants when compared to non-gentrifying low-income tracts. McKinnish and coauthors also found that 33% of the income gains in gentrifying neighborhoods were due to the in-migration of middle-income black households. They found little difference in the in-migration rates of non-college-educated black households between gentrifying and non-gentrifying neighborhoods, leading them to conclude that exclusionary displacement was not occurring. They also found "modestly" high exit of low-education and retention of high-education households in gentrifying neighborhoods. Although this study improved upon previous studies with its access to household-level data, it suffered from methodological limitations of the Census sample size (one in six) that could differ from the census tract populations, the narrow definition of gentrification (including an influx of higher-income residents but not capital, i.e., higher property values), the possibility that neighborhood change may occur at a smaller geography than the census tract, and the masking of geographical variability (e.g., differences between strong- versus weak-market cities).

Wyly and coauthors (2010) updated their 2006 study using more recent NYCHVS data (2002-2008), asking if recent changes in housing assistance and rent regulations altered the choices available to displaced renters. Using slightly modified methods, the authors compared the number of people moving out of a neighborhood to the number of people moving into a neighborhood as a means of analyzing displacement pressures, maintaining their definitions of gentrification and displacement from their previous study. The authors found that annualized displacement rates ranged from a minimum of about 10,000-20,000 households per year; however, they emphasized the considerable uncertainty in these estimates. When comparing their results to local eviction data, the authors estimate that the NYCHVS misses 12 out of 13 displacements. Wyly and coauthors also ran a regression model finding that poor households with high rent burden were nearly twice as likely to have been displaced in comparison to other groups. While their statistical analysis did not find any significant relationship between household composition (for example, race) and displacement, the authors note that "the interwoven relations of urban life should not be obscured by the illusory cleanliness of a multivariate test…. Insignificant estimates do not mean that race, gender, or family structure are irrelevant just that they are inextricably bound up with other circumstances" (pg. 2615). Furthermore, they explained that household composition is determined partly by how people and families cope with high housing costs and displacement; that is, the variable is endogenous. Despite certain innovations, this study suffered from some of the same

methodological limitations as their previous study, namely those relating to the geographic resolution of their dataset.

Finally, Ellen and O'Regan (2011) used a nationwide dataset from the American Housing Survey to compare characteristics of households that moved into or out of gentrifying neighborhoods to better understand how and why neighborhoods experience income gains. The longitudinal nature of this dataset, which follows housing units over time, allowed for the researchers to identify the characteristics of households that moved both out of and into gentrifying neighborhoods, which they defined as neighborhoods experiencing a 5% gain in income relative to the metropolitan area. For displacement rates they calculated 2-year exit rates and modeled them as a function of neighborhood income gains controlling for a series of household life-cycle characteristics. They found that neighborhood income gains did not predict household exit rates, even among vulnerable groups. Age, renter, and minority status did predict exit rates for the overall sample, including gentrifying and non-gentrifying tracts. As opposed to other authors (e.g., Newman et al.), Ellen and O'Regan make no mention of the low predictive power of their models (R^2 of 0.122). Instead they take their results to indicate that there is "no evidence that original residents – even renters and poor households – exited these communities at elevated rates" (p.94). The authors suggested that selective entry and exit among homeowners were key drivers of neighborhood change. To some, however, such selective entry would be an indicator of displacement. The most significant shortcomings of this study were the narrow definitions of gentrification (not including private investment), the lack of information about reasons for moving, as well as the masking of geographic variability.

Although varied in their approaches, questions, and results, one consistent finding across these studies is that in-movers to gentrifying neighborhoods are wealthier, whiter, and of higher educational attainment, and out-movers are more likely to be renters, poorer, and people of color. The research also consistently shows that rent appreciation predicts displacement. A number of the above studies also found that government intervention in the housing market through rent stabilization and public housing programs are protective factors limiting the displacement effects of gentrification. However, the studies are not consistent in their finding that gentrification induces displacement. Why the discrepancy? One possible explanation for the unexpected residential stability is that in neighborhoods that are gaining new amenities (along with new residents), the normal neighborhood transition process slows; residents try harder to stay in the neighborhood, even if it means paying more rent in exchange (Chapple 2014). Yet, these higher rent burdens are unlikely to be sustainable over the long term, resulting in displacement in a longer term framework than is typically measured. In the following section we review some of the methodological limitations discussed above as a means to consolidate and advance future research directions.

Finding: Despite severe data and analytic challenges in measuring the extent of displacement, most studies agree that gentrification at a minimum leads to exclusionary displacement and may push out some renters as well.

Challenges to Understanding Displacement

Most studies reviewed here suffer from significant data limitations and consequently limited advances in understanding what drives displacement and how to predict it. In this section we review the most common methodological limitations contributing to the conflicting and ambiguous understanding about the relationship between revitalization/gentrification and residential displacement. Among other limitations, we review the following four below: 1) inconsistent definitions and operationalization of the terms gentrification and displacement, 2) differences in

the definitions of a comparison group and controls to calculate and compare displacement rates, 3) the time-scale of analysis that may not capture the full processes of neighborhood change, 4) ambiguous criteria against which to determine the significance and meaning of research results. Together, these challenges limit the ability of researchers to adequately capture the full magnitude and impact of gentrification and displacement.

Each of the above reviewed studies defined and operationalized the concepts of gentrification and displacement in slightly different ways, not only making it difficult to compare across studies, but also significantly impacting the results achieved. For some, displacement only encompasses evictions, whereas others include such concepts as exclusionary displacement and even chains of displacement (i.e., Millard et al. not reviewed here). The vast majority of studies narrowly define displacement under what Marcuse would classify as physical or economic displacement, but ignore or dismiss exclusionary displacement as simply succession and replacement. This limitation results not only from data and methodological limitations, but also normative understandings of what constitutes forced displacement. Where one study may claim to find evidence of displacement (at least of the exclusionary kind) because in-movers are becoming whiter and more affluent, other authors may define such phenomena as merely succession or replacement. How we define the phenomenon matters for how we interpret the results. Furthermore, the definition and operationalization of gentrification is highly varied, and very few authors attempted to systematically capture the many dimensions of gentrification. In almost all of these studies (with the exception of Freeman), gentrification is proxied for by income change rather than private or public investment. However, an influx of capital into a neighborhood might have much stronger impacts on resident stability than simply higher-income households moving next door. Furthermore, the link between what predicts gentrification and subsequently displacement has not been made. It is important to not only understand if gentrification predicts displacement, but what dimensions of gentrification and what factors spurring gentrification also cause displacement.

Another key limitation is a lack of a consistent and clear identification of a comparison group. While some argue we should be comparing displacement from poor gentrifying neighborhoods to poor non-gentrifying neighborhoods (i.e., Freeman 2005 and Vigdor 2001), others believe we should be comparing to city-wide averages or more stable neighborhoods in general (i.e., Newman and Wyly 2006). Furthermore, some studies calculate displacement as a percentage of all movers or as a percentage of all households, either citywide or by neighborhood. These comparison groups are important because they not only provide a context against which to evaluate results, but also reveal belief systems about our normative understandings of how neighborhoods should function. More and more, researchers are becoming more transparent about the reference population and control groups, which is a trend that needs to continue.

Further obscuring the relationship between gentrification and displacement are the issues of timing. Neighborhood change is a long process, and many of the studies examined above only look at relatively short time periods. In its early phases, gentrification may not result in displacement, but over time, in the absence of protections, tenants may be forced to move. As a result, the principal barrier to studying the relationship is the lack of appropriate panel data to determine the extent of mobility and displacement. Furthermore, if one is to consider the full chains of displacement, as suggested by Marcuse, it would be important to extend our analysis to the period prior to gentrification to carefully consider disinvestment-related displacement as part of the gentrification-displacement phenomenon.

Finally, the review of this literature highlights the lack of any consistent measure or criteria against which to interpret study results. Whereas some studies highlight the low predictive power and

limited interpretability of their modeling results (i.e., Wyly et al. 2010) others barely even report on the statistical significance of their results or, when statistically significant (i.e., Vigdor 2001), minimize the relevance of findings based on the statistical magnitude of the effect. These inconsistencies are not unique to studies of gentrification and displacement, but rather social scientific inquiry in general. This likely highlights the underlying subjective nature of belief systems of social science research. For instance, some authors interpret their statistically significant results of the higher rates of displacement in gentrifying neighborhoods to be too small to be of concern (Freeman 2005). But for other researchers, such results are of concern because they significantly impact real people in real neighborhoods. Whether the impact is large or small is a relative interpretation that lies in the eyes of the beholder. This limitation, which mirrors the differences in the definition of the reference population and control groups, should be carefully examined, made transparent, and its implications should be discussed in any study that has the potential to impact real lives.

Much of the methodological limitations discussed above are ultimately data-driven. Where more detailed disaggregate data exist, it lacks information about households' reasons for moving (i.e., Panel Survey of Income Dynamics (PSID) or the Census long form) and does not have sufficient spatial resolution or coverage to contribute to local knowledge (i.e., National Household Survey). Where local data is available, it may not contain information about where displaced households are displaced from (i.e., NYHVS). Without panel data, it is not possible to understand the nature of turnover in a neighborhood (i.e., whether neighborhood household income changes are occurring to existing residents or newcomers). But even when datasets such as the American Housing Survey (the confidential panel version) or the PSID allow tracking of individual households, their responses to questions about reasons for moving are not precise enough to measure displacement (e.g., there is no answer option for "the landlord raised the rent"). For this reason it is important to not only compare and combine datasets as much as possible but to carefully understand and explore the implications of the data limitations as much as possible.

Finding: Previous studies have failed to build a cumulative understanding of displacement because they have utilized different definitions, compared different populations, and adopted a relatively short timeframe; there is not even agreement on what constitutes a significant effect.

Indicators for Analyzing Residential Displacement

As is evidenced from the above review, researchers have used myriad indicators and sources of data for characterizing residential displacement, each with its own set of advantages and disadvantages. In this section we summarize the types of indicators and data used to analyze such indicators, highlighting the typical sources of such data. Table 1.1 summarizes quantitative data sources only. As discussed above, data on many of the drivers and impacts of gentrification and displacement are not regularly gathered or are hard to quantify. It is therefore important to consider qualitative sources of information to better understand the drivers and impacts of neighborhood change.

Table 1.1 Indicators and Data Sources for Analyzing Gentrification and Displacement

Indicator Type	Indicators	Data sources
Change in property values and rents	Sales value, property value	County tax assessor's office, Department of finance, data aggregator
	Rent	Data aggregators, apartment operating licenses, craigslist
	Changes in availability of restricted affordable housing	HUD, housing departments
Investment in the neighborhood	Building permits, housing starts, renovation permits, absentee ownership	Jurisdiction's building or planning departments
	Mortgage lending and characteristics	HMDA and assessor data
	Sales (volume and price	County assessor's office, data aggregators
	Condo conversions	Assessor office, housing department, department of public works
	Change in community and business orgs (#, membership, nature of activities, etc.)	Chamber of commerce, NETS, neighborhood or local business associations, etc.
	Public investments (transit, streets, parks, etc.)	Public works departments, transit agencies, parks and rec, etc.
Disinvestment	Building conditions, tenant complaints, vacancies, fires, building condemnation,	Surveys, Census, maps, building departments, utility shut-offs, fire department
	School quality, crime, employment rates, neighborhood opportunity	Department of Education, Police Departments/crime maps, Census, Bureau of Labor Statistics
	Neighborhood quality	Local Surveys
Change in tenure and demographic changes	Tenure type, change in tenancy	Building department, assessor's office, census
	Evictions	Rent board, superior court
	Foreclosure	HUD, proprietary data sources
	Demographics data on in- vs. out-movers (race, ethnicity, age, income, employment, educational achievement, marital status, etc.)	Census, voter registration, real estate directories, surveys, American Housing Survey, DMV
Investment potential	Neighborhood and building characteristics (e.g., age and square footage, improvement-to-land ratio)	Tax assessor, Census, Deeds, etc.
	Neighborhood perceptions	Surveys of residents, realtors, lenders, neighborhood businesses, Newspapers, TV, blogs, etc.
Reasons that people move in/out of 'hood	Reason for move	Surveys of in- and out- movers, HCD housing discrimination complaints database.
Coping strategies / displacement impacts	Crowding/doubling up	Census, utility bills, building footprint
	Increased travel distance and time	Census

Implications for Strong versus Weak Markets

The intensity of gentrification, as well as how it is experienced by local residents, will differ according to market context. Where economic growth is above average and demand for land is strong, new private and public investment can accelerate neighborhood change and push up

property values. This process likely transforms neighborhood meanings and crowds out existing residents. Where the economy is more tepid, the new investment will also transform neighborhoods, but may not have the same displacement effects. The Center for Transit-Oriented Development (2013) has illustrated this market variation: new fixed-rail investments have transformed some neighborhoods while leaving others essentially unchanged.

Yet, the existing literature on gentrification and displacement fails to acknowledge these market differences. Many studies examine strong market cities such as New York, San Francisco, and London, with findings that may not be at all applicable to weaker market regions or even neighboring cities. Although these case studies provide some of the most methodologically rigorous analyses of neighborhood change processes, they do not provide systematic comparisons across market types. Where studies do look across market types, they typically try to predict change across many different metropolitan areas without controlling for local economies. As a result, these more systematic models likely have poor predictive value for individual metros. This in turn raises questions of the utility of these analyses for local policymakers.

Finding: Existing studies rarely account or proxy for regional market strength, which undermines their relevance to particular contexts.

Urban Simulation Models and Neighborhood Change

In recent years, a number of computational models have sought to simulate aspects of neighborhood change associated with gentrification. The models discussed here fall into two broad categories: those that address the phenomenon of gentrification explicitly, and those that focus primarily on processes of residential choice and residential segregation, patterned after Schelling's early model of neighborhood "tipping" along racial lines (Schelling 1971). Roughly following the same division, the simulation models in the literature can also be grouped according to their structure. Models focusing on representing the movement of individuals and households into spatial patterns of settlement tend to be specified through "agent-based models," also referred to in the literature as "multi-agent systems," while models that focus on capturing inter-related patterns of change among spatially fixed entities (such as housing units or entire neighborhoods) tend to be specified through cellular automata (Torrens and Nara 2007). Additionally, a number of hybrid model specifications contain both spatially fixed automata and spatially mobile agents (Torrens and Nara 2007; Diappi and Bolchi 2013). The integrated land use and transportation models utilized by metropolitan planning organizations (e.g., UrbanSim and PECAS) simulate the individual decisions and interactions of agents (e.g., households, businesses), fixed physical characteristics of urban environments (e.g., buildings and transit), as well as larger structural constraints (e.g., land use regulations) (Johnston and McCoy 2006).

Despite their compatibility with the study of residential spatial dynamics, relatively few simulation models have been specified to focus explicitly on gentrification. One explanation for this paucity is the difficulty of adequately incorporating the breadth of social theory needed to account for the range of gentrifying mechanisms (Torrens and Nara 2007). Here we analyze four studies that attempt to simulate neighborhood economic and racial change. In developing the first widely published work on gentrification-based computational models, O'Sullivan (2002) relies heavily on Smith's rent gap theory for specifying the structure of his cellular automata model of gentrification in a region of East London. Specifically, O'Sullivan sets out to model the role of neighborhood status in determining the "gap" in a given parcel's potential and capitalized rents and the gap's impact on states of "for sale," "owner-occupied," "for rent," and "rented" (O'Sullivan 2002; p. 260). In assessing

the performance of the model, O'Sullivan suggests to nest the neighborhood within a broader urban structure, allowing neighborhood status to better reflect position within a wider city hierarchy.

Diappi and Bolchi (2013) model gentrification in Milan through a specification of "active agents," including real estate investors, housing owners and housing tenants; and "passive agents," which they specify as individual buildings. Within this general structure, investor agents choose to develop housing based on citywide assessments of rent gaps, housing owner agents make housing upkeep decisions based on localized market conditions, and tenant agents sort themselves into different housing units based on housing conditions, rents, and their (heterogeneous income-based) ability to pay. Additionally, potential rents are shaped by local amenities and proximity to the city center. Finally, the amount of capital that investor agents have to spend is shaped by exogenous business cycles (Diappi and Bolchi 2013; 89-90).

Similarly, Torrens and Nara, in a simulation of gentrifying change in Salt Lake City, specify properties and aggregations of properties as "fixed automata" and residential households as "mobile automata," which they liken to agents. Torrens and Nara (2007) reference the importance of capital-driven, supply-based approaches to modeling gentrification and include demand-based drivers of gentrification. Within this general framework, they generate nested patterns of behavior between household agents, large neighborhood markets that they chose to either enter or stay in, and specific housing properties within the market of choice. A number of variables drive the dynamics of these moves including spatial amenities and economic prosperity at the market level; price, housing quality, and spatial amenities at the property level; and economic status, amenity preferences, and moving thresholds at the household level. Notably, ethnicity (Latino or non-Latino) is also included as a state variable for both households and properties.

Finally, Jackson and coauthors (2008) utilize an agent-based model to study gentrifying patterns in Boston. While the structure of their model is similar to those of Diappi and Bolchi (2013) and Torrens and Nara, they operationalize gentrifying change as being driven by demand-side consumer decisions, rather than by supply-side development decisions, justifying this approach by pointing to the absence of an observed relationship between large-scale neighborhood investment projects and changes in nearby rents in Boston between 2003 and 2007. The residential dynamics simulated by Jackson et al. are driven by the interactions of four classes of agents: professionals, students, non-professionals, and elderly, each of whom are motivated by varying abilities to pay and preferences for neighborhood composition and amenity access.

The above four models (see Appendix E for further details), while exemplars of computational modeling approaches to gentrification, all suffer from a related set of limitations. First, each of the above models is constrained in its ability to theoretically ground mechanisms of neighborhood change. While the work of O'Sullivan (2002) and Diappi and Bolchi (2013) is well-grounded in Smith's rent gap theory, it does not incorporate competing theories of the drivers of gentrification, notably those focusing on the housing demand of gentrifying populations and their particular set of locational preferences. Similarly, all four models are limited by a lack of important empirical detail, both in their specifications of agent attributes (such as agent incomes and baseline parcel rents), as well as in their specification of neighborhood choice and parcel change mechanisms. An important example of the latter drawback is in the incorporation (or lack thereof) of race and ethnicity in the models. Despite empirical work demonstrating the importance of race above and beyond income in shaping housing decisions (see Charles 2003; Pais, South, and Crowder 2012), the majority of the models covered here do not include any measure of race or ethnicity.

Looking beyond models that explicitly simulate gentrification, a number of computational models examine processes of neighborhood segregation. The seminal model on which much of this work draws upon was specified by Schelling (1971) in an attempt to account for the dynamics of residential segregation between whites and blacks. In his model of residential movement on a simple grid, Schelling demonstrates that when whites and blacks are ascribed thresholds of same-race neighborhood preference, they can generate very sharp patterns of segregation, even when their preference thresholds are relatively innocuous.

More recent efforts have extended on this model in a number of ways (summarized by Huang et al. 2013). For instance, various extensions have modified the structure of neighborhood composition preferences and attached them to empirical estimates of residential preference (Bruch and Mare 2006; Xie and Zhou 2012), situated models in realistic and empirically grounded urban environments (Crooks 2010; Yin 2009), gone beyond binary racial distinctions to include interactions among a greater diversity of agents (Ellis et al. 2012; Clark and Fossett 2008), and incorporated competing sets of non-racial preferences (K. Chen et al. 2005). The range of residential choice mechanisms explored in these model extensions hold the potential to help refine and improve the incorporation of race in simulations of gentrification.

Finally, researchers are beginning to use integrated land use and transportation models to simulate neighborhood composition and gentrification. Using the Simple Integrated Land-Use Orchestrator (SILO) model, Dawkins and Moeckel (2014) analyzed the impact of an inclusionary housing program and more compact development for Washington, D.C., on neighborhood gentrification. The SILO model accounts for household relocation constraints, housing costs, transportation costs, and travel times, but not race and ethnicity. No simulation model to date has been used to explicitly study residential displacement.

Finding: Urban simulation models are guided by consumer decision-making, rather than the development decisions – flows of people rather than capital – and have neglected the role of race; thus they may not capture complex gentrification dynamics.

Moving from Research to Praxis: Prediction and Mitigation

A number of researchers have developed models and analyses to aid activists and governments to better understand, predict, and plan for neighborhood change. One of the earlier iterations of work predicting gentrification is a presentation by researchers from the Urban Institute (Austin Turner and Snow 2001). Analyzing data for the Washington, D.C., area, they identified the following five leading indicators as predictive of future gentrification (defined as sales prices that are above the District's average) as low-priced areas that are: 1) adjacent to higher-priced areas, 2) have good Metro access, 3) contain historic architecture, 4) have large housing units, and 5) experience over 50% appreciation in sales prices between 1994 and 2000. Census tracts were scored for each indicator and then ranked according to the sum of indicators with a maximum value of 5. This ranking system is one of the first recorded attempts to create a policy-relevant tool to analyze and predict gentrification; however, the presentation did not include their methodology nor an evaluation of the results.

In a 2001 discussion paper prepared for the Brookings Institution and PolicyLink, Kennedy and Leonard conducted a literature review, case studies, and stakeholder interviews to determine the

predictors, impacts, and responses to neighborhood gentrification (Kennedy and Leonard 2001). From this research they identified the following factors to be predictive of gentrification:

a) high rate of renters,
b) ease of access to job centers,
c) high and increasing levels of metropolitan congestion,
d) high architectural value,
e) comparatively low housing values,
f) high job growth,
g) constrained housing supply,
h) large rent gap,
i) urban amenities,
j) targeted public sector policies (e.g., tax incentives, public housing revitalization, construction of transit facilities, disposition of city-owned properties, code enforcement, etc.),
k) growing preference for urban amenities.

In addition, they characterized the following factors as indicative that the process of gentrification was already underway: a) shift in tenure, b) increase in down payment and decrease in FHA financing, c) influx of households interested in urban living, and d) increase in high-income serving amenities such as music clubs, coffee shops, galleries, and the like.

In 2009, sponsored by the Association of Bay Area Governments, Karen Chapple at the Center for Community Innovation (CCI) at UC Berkeley conducted an analysis of neighborhood change in the San Francisco Bay Area from 1990 to 2000 and used the results of this analysis to predict neighborhood susceptibility to gentrification (Chapple 2009). Chapple adopted Freeman's (2005) definition of gentrifying neighborhoods as low-income census tracts in central city locations in 1990 that by 2000 experienced housing appreciation and increased educational attainment above the average of the nine counties in the Bay Area. The author then constructed a multivariate statistical model that had gentrification as the dependent variable, and a set of 19 socio-economic, locational, and built environment factors for 1990 as independent variables[9]. Based on the outcome of the regression, Chapple determined the direction, significance, and rank of the variables. The author assigned a value of 1 if census tracts scored above the regional average for each of the 19 predictive variables and summed across the variables. With a maximum score of 19, tracts were determined highly susceptible if they scored 16 or higher and of moderate susceptibility with scores between 13 and 15. No analysis or prediction of displacement or exit rates was included in this study, as neighborhood gentrification and change was the object of analysis.

The Dukakis Center for Urban and Regional Policy (2010) conducted an analysis transit oriented development and its association with neighborhood gentrification and displacement (Pollack, Bluestone, and Billingham 2010). Analyzing 42 neighborhoods (block groups within a half-mile of a transit station) near rail stations in 12 metro areas across the United States, they studied changes between 1990 and 2000 for neighborhood socio-economic and housing characteristics (e.g., number of units, racial composition, household income, auto ownership, and the like) and compared it to the metropolitan area to determine if patterns in transit-oriented neighborhoods differed significantly (i.e., over 20%) from non-transit-oriented neighborhoods. They found that rail-served neighborhoods were more likely to experience higher rates of growth in population, production of housing units, household incomes, housing costs, in-migration, and car ownership

[9] % of workers taking transit, density of youth facilities, density of public space, density of small parks, % non-family households, % of dwelling units in buildings with 5+ units, % of dwelling units in buildings with 3-4 units, % renter-occupied, Public housing units, income diversity, % of renters paying > 0.35 of income, distance to San Jose, % of dwelling units with three or more cars available, density of recreational facilities, % married couples with children, % non-Hispanic white, median gross rent, % of owners paying > 0.35 of income, Distance to San Francisco

when compared to the averages for the respective metropolitan areas. To discern whether gentrification occurred more often in neighborhoods with initially high proportions of renters rather than homeowners, they looked for a correlation between the rate of homeownership in 1990 (before the transit station opened) on the one hand and both the percentage change in the non-Hispanic white population between 1990 and 2000 and the percentage change in median household income between 1990 and 2000 on the other. In both cases they found that a higher initial proportion of renters was correlated with a larger change in racial and ethnic composition and larger increases in median household income.

Applying the same methodology he used to study gentrification and displacement in London, in 2011 Atkinson and coauthors characterized household vulnerability to displacement from neighborhoods that gentrified between 2001 and 2006 in the Melbourne and Syndey greater metropolitan areas. A vulnerability score (from 1-13) was measured based on tenure, number of employed persons per household, and occupation, ranking owner-purchaser, two-income, professional households at the least vulnerable end of the scale (1) and working-age private renters not in the labor force at the most vulnerable (13). Displacement rates were calculated by dividing the number of out-migrants with vulnerability characteristics by the number of households with these characteristics exposed to the likelihood of moving in 2001. Gentrified neighborhoods were defined by projecting the population for various sub-groups (e.g., low-income) and comparing projected to actual populations. Neighborhoods that had higher-than-projected numbers of high-income, occupied, and professional populations were designated gentrified.

Building off the same methodology as Chapple (2009), researchers from the Local Initiative Support Corporation (LISC) constructed a model predicting gentrification in neighborhoods of Houston (Winston and Walker 2012). They created a narrower definition of gentrifying neighborhoods by restricting the label to those that experience increases in a neighborhood's median incomes, median housing values, and educational attainment that are at least 10 percent higher than for all Houston neighborhoods. They began with the same list of independent variables (excluding the locational and income diversity ones), and added several others such as percent poverty, vacancy rates as well as dis-amenity variables such as industrial land uses for 1990. In addition, they included in the regression changes in the variables between 1990 and 2000. From this original list of 32 only seven variables[10] were significantly associated with gentrification rates and were included in the susceptibility model. Rather than scoring tracts like CCI, the LISC researchers used the regression coefficients and continuous independent variables in predicting the rate of gentrification, resulting in higher predictive accuracy. Validating their model using 2007 (2005-2009) American Community Survey (ACS) data, they found 86% accuracy for highly susceptible tracts (i.e. those that the model predicted were 75% likely to gentrify) and 60% accuracy for moderate susceptibility (i.e., between 50% and 75% likelihood).

A recent study in Portland by Lisa Bates (2013) set out to predict market changes based on a small set of indicators (vulnerability to displacement, demographic changes, and housing market conditions). She defined tracts as vulnerable to displacement in 2010 when they had higher-than-average populations of renters, communities of color, a lack of college degrees, and lower incomes. For housing market conditions Bates defines neighborhood market typologies as 1) adjacent tracts (low/moderate 2010 value, low-moderate appreciation, touch boundary of high value/appreciation tract), accelerating tracts (low/moderate in 2010 with high appreciation rates), and appreciated

[10] % of non-family households 1990, % of dwelling units in buildings with 5+ units 1990, % of dwelling units with three of more cars available 1990, number of youth facilities, *Δ* in % of married couples with children 1990 – 2000, *Δ* in % of non-family households 1990 – 2000, *Δ* in % of renter-occupied units 1990 – 2000

tracts (low or moderate 1990 values, high 2010 value, high 1990-2010 appreciation). Combining this information with demographic shifts for vulnerability factors (see above) between 2000 and 2010, she identified the following neighborhood typologies:

1. Susceptible tracts: are near high-value and/or high-appreciation tracts, but still have low or moderate home values and appreciation rates. They have vulnerable populations and are not yet experiencing demographic change indicative of gentrification.
2. Early: Type 1 tracts experienced high appreciation rates over the last decade, but still have low or moderate home values. Their populations are vulnerable but no gentrification-related demographic change has occurred.
3. Early: Type 2 tracts are near high-value and/or high-appreciation tracts but still have low or moderate home values and appreciation rates. They have vulnerable populations and have experienced demographic change indicative of gentrification.
4. Dynamic tracts experienced high appreciation rates over the last decade but still have low or moderate home values. They exhibit demographic change indicative of displacement but still have vulnerable populations.
5. Late tracts had low or moderate median home values in 1990, but experienced high appreciation over the last two decades and are now high-value tracts. They have experienced gentrification-related demographic change, but still have populations that are vulnerable.
6. Continued loss tracts are also high-value areas that experienced high appreciation over the last two decades starting from low or moderate 1990 values. They no longer have above-average levels of vulnerable populations, but exhibited high levels of demographic change over the previous period, and remaining vulnerable households may be in a precarious situation.

Bates then uses these typologies to recommend how to tailor policy approaches to the specific characteristics and needs of neighborhoods.

Finally, the Puget Sound Regional Council (PSRC) together with the Center for Transit Oriented Development created a typology of neighborhoods as part of their "Growing Transit Communities" Strategy (PSRC 2013). They constructed a "people profile" and "place profile" matrix and aligned policy responses according to neighborhood typology. The people profile consisted of a social infrastructure/access-to-opportunity axis comprised of a composite indicator of education, economic health, housing and neighborhood quality, mobility and transportation, and health and environment. The other axis - change/displacement - measured risk of displacement due to recent neighborhood change, current community risk factors, and current and future market pressure. Data used to quantify these factors relate to income, education, race and ethnicity, household type, housing tenure, and residential market strength measured at the block group level and were categorized into low, potential, and immediate risk. Low-risk communities tend to be moderate- to higher-income communities and/or communities with lower market pressures. Immediate-risk communities tend to have indications that displacement of lower-income populations has begun, higher current market strength, and/or high number of community risk factors. Potential-risk communities are those that have a weak market strength and therefore do not face imminent displacement risk; however, they also exhibit numerous community risk factors that suggest needs for community stabilization efforts to avoid future displacement risk should market forces change.

The place profile also consisted of two dimensions: the degree to which a transit community's physical form and activity support a dense and walkable transit community (the physical form+activity/transit orientation axis) and the likelihood that the community will change due to real estate market strength (the change/market strength axis). The physical form+activity/transit

orientation axis measures the degree to which a community's place characteristics are transit-oriented—with a form and activity level that support a dense and walkable community served by high-capacity transit. The composite index includes five sub-measures: pedestrian infrastructure, transit performance, physical form, population, and proximity of a mix of uses. The change/market strength axis measures the strength of the residential transit-oriented development market, which was intended to evaluate the potential demand for residential transit-oriented development, includes measures related to the real estate market, employment patterns, density, and household income and size. Combining the people and place typologies, they identify eight general typologies, for each of which they identified implementation and policy approaches.

Finding: Many different descriptive toolkits offer typologies of neighborhood change, but few have analyzed the causality behind it, limiting the usefulness of such tools to predict and mitigate change.

Chapter 1 Conclusions

Scholarly interest in the relationship between investment and displacement dates back to the 1970s, in the aftermath of displacement related to urban renewal. More recently, a new wave of scholarship examines gentrification, primarily in strong-market cities, and its relationship to public investment, particularly in transit. The results of these studies are mixed, due in part to methodological shortcomings. However, the following findings emerge across the literature:

- Influential early models of neighborhood change present processes of succession and segregation as inevitable, underemphasizing the role of the state.

- Neighborhoods change slowly, but over time are becoming more segregated by income, due in part to macro-level increases in income inequality.

- Racial segregation harms life chances and persists due to patterns of in-migration, "tipping points," and other processes; however, racial integration is increasing, particularly in growing cities.

- Neighborhood decline results from the interaction of demographic shifts, public policy, and entrenched segregation, and is shaped by metropolitan context.

- Gentrification results from both flows of capital and people. The extent to which gentrification is linked to racial transition differs across neighborhood contexts.

- Cultural strategies can transform places, creating new economic value but at the same time displacing existing meanings.

- Commercial gentrification can also transform a neighborhood's meaning, but research is mixed on whether it is positive or negative for existing residents and businesses.

- New fixed-rail transit has a generally positive effect on both residential and commercial property values, but its impact varies substantially according to context.

- Preliminary evidence suggests that BRT has limited or no effects on local property values.

- Proximity to high-quality schools and parks, as well as access to highways, increases home values.

- Displacement takes many different forms—direct and indirect, physical or economic, and exclusionary—and may result from either investment or disinvestment.

- Despite severe data and analytic challenges in measuring the extent of displacement, most studies agree that gentrification at a minimum leads to exclusionary displacement and may push out some renters as well.

- Previous studies have failed to build a cumulative understanding of displacement because they have utilized different definitions, compared different populations, and adopted a relatively short timeframe; there is not even agreement on what constitutes a significant effect.

- Existing studies rarely account or proxy for regional market strength, which undermines their relevance to particular contexts.

- Urban simulation models are guided by consumer decision-making, rather than development decisions – flows of people rather than capital – and have neglected the role of race; thus they may not capture complex gentrification dynamics.

- Many different descriptive toolkits offer typologies of neighborhood change, but few have analyzed the causality behind it, limiting the usefulness of such tools to predict and mitigate change.

In sum, previous work on neighborhood change has showed that income segregation is generally increasing. Gentrification, or the influx of capital and higher-income, higher-educated residents into working-class neighborhoods, is transforming some areas. Displacement, which includes moves out of neighborhood that are for reasons beyond a households control (e.g., rent increase) as well as exclusion or the prevention of households from moving into neighborhoods where they could have previously afforded to live, may result from disinvestment as well as investment in neighborhoods. The impacts of gentrification are mixed, at a minimum leading to exclusionary displacement and most likely pushing out some renters as well. New fixed-rail transit, inasmuch as it has a positive effect on residential and commercial property values, may also affect neighborhood stability and composition.

Chapter 2: Analysis of Historic Patterns of Neighborhood Change

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Acronyms Used in This Chapter

- ACS (American Community Survey – U.S. Census)
- AIN (Assessor Identification Number)
- APN (Assessor Plat Number)
- CASP (Cornfield Arroyo Seco Specific Plan)
- CBO (Community-Based Organization)
- CTCAC (California Tax Credit Allocation Commission)
- HCD (California Department of Housing and Community Development)
- HUD (U.S. Department of Housing and Urban Development)
- JD (Joint Development – Los Angeles Metro)
- LIHTC (Low-Income Housing Tax Credits – HUD)
- LTDB (Longitudinal Tract Data Base)
- NCDB (Neighborhood Change Database)
- OLS (Ordinary Least Squares)
- PUMA (Public Use Microdata Area)
- PUMS (Public Use Microdata Sample)
- SEACA (Southeast Asian Community Alliance)
- SUR (Seemingly Unrelated Regressions)
- SNAP (Station Neighborhood Area Plan)
- TOD (Transit-Oriented Development or Transit-Oriented District)
- VTA (Santa Clara Valley Transportation Authority)

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Chapter 2 Introduction

In Chapter 2, we present a series of quantitative and qualitative analyses to examine if key characteristics associated with gentrification and displacement are driving neighborhood change in fixed-rail transit neighborhoods in Los Angeles County and the San Francisco Bay Area. The sections in this chapter provide the following: 1) a summary of steps taken to construct the quantitative databases for each area, which are used to model neighborhood change; 2) a description of the typologies of transit neighborhoods we encounter in these regions; 3) a series of multivariate regression models on mobility, displacement, and neighborhood change; 4) sensitivity analyses of the models; and 5) the methods and findings used to ground-truth our quantitative models through an extensive inventory of neighborhood observations and interviews with key informants.

We find that gentrification in Los Angeles and the Bay Area TODs cannot be attributed to new development, as both areas experienced relatively little residential development during the period of observation. We also find that transit neighborhoods in both areas are experiencing similar demographic shifts, including new residents with higher-income in Los Angeles and new residents with higher levels of educational attainment in the Bay Area. Further, we see an increase in the use of housing development tax credits as well as an increase in eviction rates near fixed-rail transit in both regions. Spatial variations within the two areas exist in terms of race and measures of affordable housing. The findings of the field observations were generally consistent with the secondary data; however, observations and interviews also reflected processes currently underway that have the potential for displacement but are not captured in our neighborhood change databases. We conclude that proximity to a rail station impacts neighborhood change patterns associated with gentrification and displacement.

Section 2A: Development of a Neighborhood Database

This section summarizes the data sources and general methods used to construct a customized database for Los Angeles and the Bay Area at the neighborhood level. We use Census tracts as a proxy for neighborhoods[1]. For Los Angeles we analyze all tracts within Los Angeles County. For the Bay Area we analyze all tracts within the 9-county region as defined by the Metropolitan Transportation Commission: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano and Sonoma counties. The database is used to model neighborhood change from 1990-2013 at the Census tract level. While we strived to ensure consistency in the variables and indicators used in both regions, each site had access to varying data sources; however, the database for each region is consistent in use of key demographic, socioeconomic, and housing variables. Detailed information on methods used, and challenges faced when processing the datasets for the two regions can be found in Appendix F and Appendix G.

2A.1. Census-Tract Datasets

The primary datasets used to construct the databases for each region are derived from the Census Bureau's decennial Census and American Community Survey (ACS). The ACS is conducted annually but only the 5-year estimates provide data at small geographies such as the tract. In addition to

[1] There is much debate and research into the definitions and analytical proxies for neighborhoods that is beyond the scope of this research. Due to data availability, we use the Census tract as a proxy for neighborhood scale for the purposes of this study.

Census datasets, a wide variety of other data were collected and analyzed for exploratory purposes. Table 2A.1 shows the common datasets and variables collected for both regional databases.

Decennial Census and ACS data were used to derive information on demographics of the population, socioeconomic status of households and individuals, and housing characteristics. These data are from the 1990 and 2000 decennial Censuses, and the 2009-2013 ACS 5-year estimates. Due to shifting Census tract boundaries, it is necessary to harmonize tract-level data to the same tract boundaries to be able to compare them over time. We analyzed two datasets that harmonize tract boundaries, Geolytics' 2010 Neighborhood Change Database and Brown University's Longitudinal Tract Data Base (LTDB), and compared them to our own population estimates. We determined that the LTDB was the most accurate of the two datasets we assessed. As such, most of the Census-based variables were derived from Brown University's LTDB or downloaded from the U.S. Census and converted to 2010 Census geography using LTDB free conversion scripts. Detailed information on the assessment, methods used, and challenges faced when processing the datasets for the two regions can be found in Appendix F.

Table 2A.1: Common Neighborhood-level Datasets Collected for Both Regions

Dataset	Variables	Data Source
Decennial Census and ACS	Demographic, housing, and socioeconomic characteristics	Brown University Census' American Fact Finder
PUMS	Movement in/out of neighborhood (with race, income, education)	Census' American Fact Finder
HUD Picture of Subsidized Housing	# Section 8 voucher recipients # public housing units	HUD

2A.2. Address-Level Datasets

When we encountered address-level data, we geocoded these data to the corresponding Census tracts and spatially joined them to the 2010 Census tract data to calculate tract-level indicators which were then added to the neighborhood database. Table 2A.2 shows the common datasets and variables collected for both regional databases at the address level.

Table 2A.2: Common Address-level Datasets Collected for Both Regions

Dataset	Variables	Data Source
Low-Income Housing Tax Credit (LIHTC)	# housing units constructed	HUD
NETS	# jobs, establishments, sales	Walls & Associates
Evictions	# fault/no-fault evictions (SF), # Ellis Act evictions (LA)	SF Rent Board, HCIDLA
Transit Stations	Presence of rail station	Various; respective metropolitan transportation agencies

Section 2B: Development of a Parcel-Level Database

In an attempt to build a finer grain understanding of neighborhood change in the Bay Area and Los Angeles County, various indicators of changes to the residential housing stock were constructed at the parcel-level. Parcel-level data provide information on the changes associated with a plot of land, including transaction history, land-use changes, new construction of a residential structure in a parcel, major renovations of existing structures, and conversions of apartments to condos. These data allowed us to develop proxies to assess different types of displacement (economic, physical, and exclusionary). The parcel datasets were purchased from Dataquick, a lead provider of county assessor data (Dataquick has since been acquired by CoreLogic). Data was also acquired directly from the county assessor for the Los Angeles database. The parcel-level data were then aggregated to the tract-level and integrated to the neighborhood database. The methods used and challenges faced when processing the parcel-level datasets for the two regions can be found in Appendix G.

Section 2C: Developing Typologies of Transit Neighborhoods

In this section we analyze neighborhood-type clusters to answer questions related to transit-oriented development (TOD) neighborhoods, gentrification, and displacement. Specifically, we created TOD neighborhood (Census tracts that intersect within a half-mile station buffer) typologies based on new development and transit investment types, where data is available. We used cluster analysis to group transit neighborhoods based on their shared characteristics. For the analysis in this section, new development includes data on new residential units, renovations of single-family homes, condo conversions, and the change in the number of low-income housing tax credit (LIHTC) units for Los Angeles County. As data for renovations and condominium conversions were only available for San Francisco, the analysis for the entire Bay Area is limited to new market-rate housing development, new and rehabbed subsidized housing units, and new transit stations. For further discussion of data and variable construction for the above, please see Appendices F and G.

New residential units, renovations, and condo conversions all represent private investments, while LIHTC is a combination of both public and private investment. Data on transit investment for Los Angeles include the number of Metro Joint Development (JD) projects in a tract. JD represents a public-private partnership and occurs when a transit agency collaborates with a private developer to develop property that is owned by the transit agency and located near a transit station. No such data was available for the entire Bay Area. Four main cluster types emerged from this analysis for Los Angeles and three for the Bay Area.

As of 2014, the Los Angeles Metro Rail system was comprised of 80 transit stations. Using the half-mile definition, 387 Census tracts were classified as TOD tracts. Figure 2C.1 below displays all 387 TOD tracts in Los Angeles.

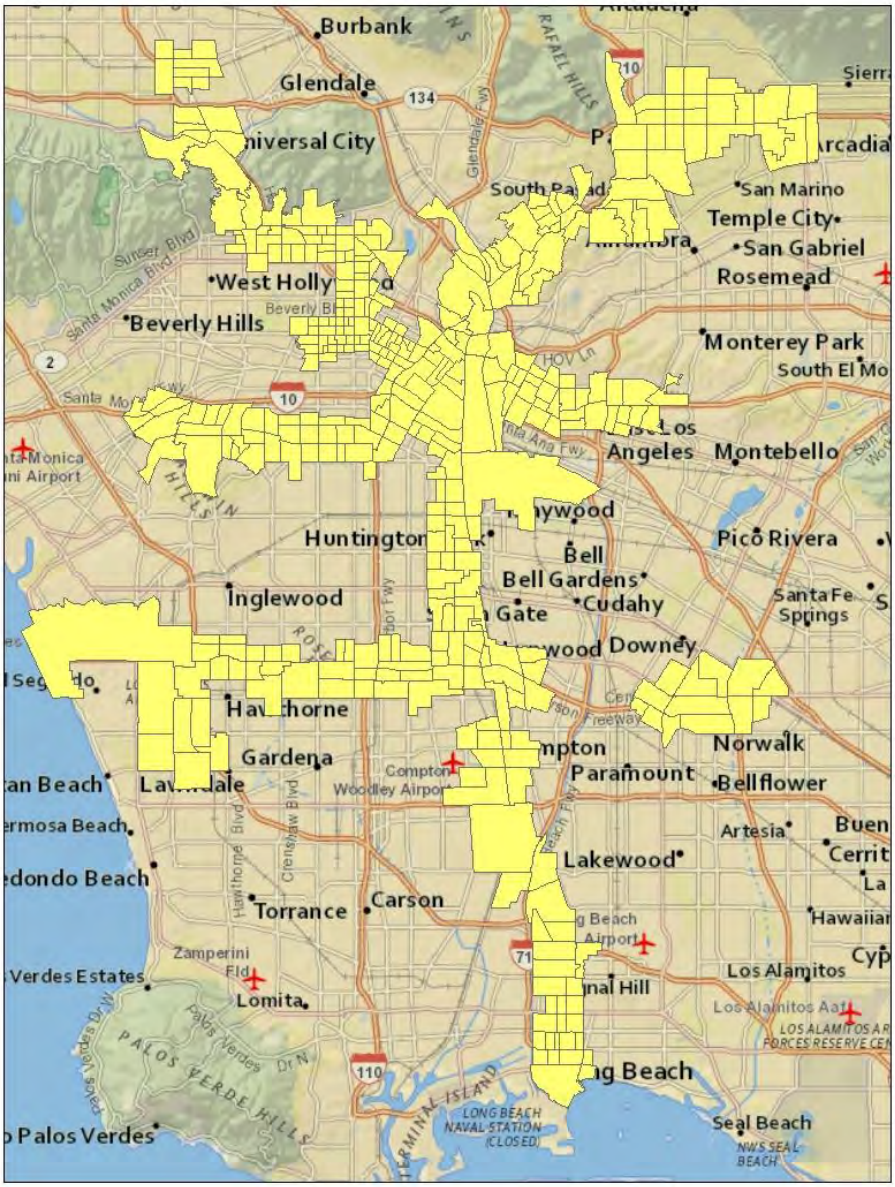

Figure 2C.1: Map of 2010 TOD tracts, Los Angeles

As of 2014, there were 548 Census tracts that intersected with the half-mile buffers around rail stations (Figure 2C.2). In 2000 there were only 422 rail stations, and their half-mile buffers intersected with 488 Census tracts, and in 1991 there were 302 rail stations, covering 418 Census tracts. Thus, while the number of rail stations has more than doubled since 1990, they have clustered in heavily populated areas, and the Census tract coverage has only increased by 31%.

Figure 2C.2: TOD Areas in the Bay Area

The following describes the four main cluster types for Los Angeles and Table 2C.1 reports their summary statistics:

1. *Private-driven* – On average, have a greater number of new residential units and condo conversions.
2. *Mixed without joint Metro development* – Generally have more newly constructed residential units, an increase in LIHTC units, and condo conversions, but on average, no joint development and no renovations to single-family homes.
3. *Mixed with joint Metro development* – Characterized by a combination of newly constructed residential units, an increase in LIHTC units, condo conversions, joint development, and renovations to single-family homes.
4. *Subsidy-driven* – On average, have experienced an increase in the number of LIHTC units.

Table 2C.1: Summary Statistics for Transit Station Types in Los Angeles (Means)

	Private-Driven	Mixed w/o Joint Metro Development	Subsidized-Driven	Mixed w/ Joint Metro Development
New Residential Units, 2005-12	538.5	1,237.5	64.8	450.2
SFH Renovations, 2007-13	2.5	0.0	2.0	13.2
Condo Conversions, 2003-13	483.5	58.0	35.0	36.6
Δ LIHTC Units, 2000-13	0.0	224.5	782.3	149.5
Joint Development, 2014	1.0	0.0	1.0	1.2
n	2	2	4	13

Source: 2000 Decennial Census, 2009-13 ACS, LA County Assessor, TCAC

Figure 2C.1 displays the typologies alongside tracts that have gentrified between 2000 and 2013. Broadly speaking, gentrified neighborhoods are defined as socioeconomically disadvantaged tracts that are at risk of displacement due to influx of higher income, better educated, increasing rent and loss of affordable rental housing. For further discussion of the methodology used to calculate gentrification, see Section 2E.

When we compare the two maps side by side for Los Angeles (Figure 2C.3), we see the existence of both development-driven gentrification and gentrification without extensive development. For example, if a place suddenly becomes attractive, it can attract more affluent, higher educated, and non-Hispanic whites who might just use the existing built environment. Gentrification can also overlap with high levels of development as we see in the two maps. For example, there seems to be a lot of overlap in the areas around Downtown, particularly around the Staples Center and Arts District. Both of these areas have gentrified or are in the process of gentrifying, and both are experiencing high levels of development, but the types of development occurring are different. The area around the Staples Center is experiencing more mixed development (with and without Metro's joint development), and the Arts District is being driven primarily by private development. We also see tracts that are adjacent to development and gentrified tracts experiencing changes, indicating some sort of spillover effect.

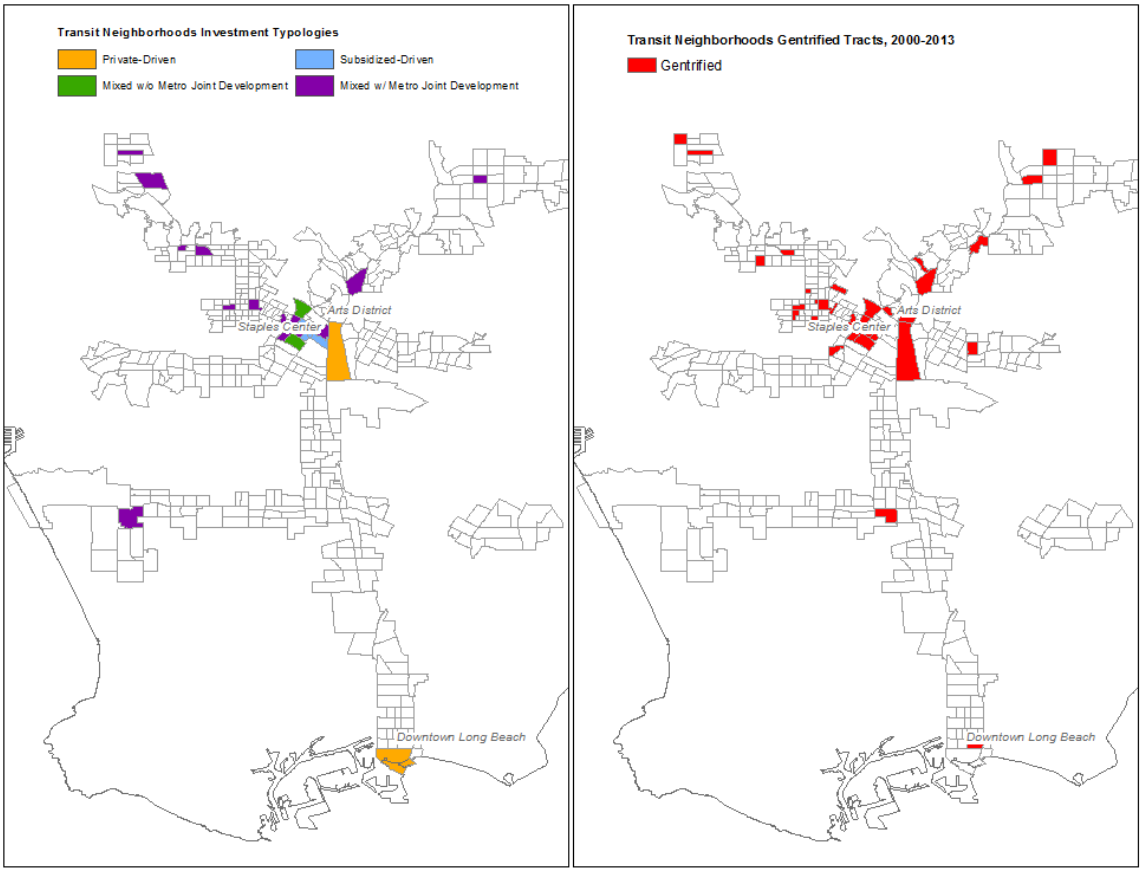

Figure 2C.3: Development Tracts in LA County (L) and Gentrified Tracts in LA County (R)

The tracts that experienced extensive development but did not cross the threshold of gentrification are also interesting. The southern part of Long Beach provides an example. The tract gentrified in the 1990s to the extent where it is no longer eligible (i.e., it no longer housed sufficient low income or other vulnerable population per the criteria listed in section 2E.1) to be included in our assessment in the 2000s. The gentrification that occurred in the 1990s seems to have precipitated a wave of development in the following decade. Table 2C.2 provides a breakdown of all 387 TOD tracts by whether or not they gentrified and whether it was with or without housing development.

Table 2C.2: TOD Tracts, Gentrified With/Without Development for Los Angeles County

	# of TOD Tracts
Gentrified w/ Development	11
Gentrified w/o Development	20
Development Only	7
Not Gentrified/No Development	349

Source: 2000 Decennial Census, 2009-13 ACS

For the Bay Area, the three typologies that emerged (Table 2C.3) were:

1. *Private-driven* – On average, have a greater number of new market rate residential units and more new transit stations.
2. *Little development* – Characterized by few new market-rate or subsidized residential developments with some new transit
3. *Subsidy-driven* – On average, have experienced an increase in the number of LIHTC units with little new transit.

Table 2C.3: Summary Statistics for Transit Station Types in the Bay Area

	Private-Driven Development	Little Development	Subsidy-Driven Development
Average Number of New Market Rate Units, '00-'13	65.8	109.1	1997.6
Average Number of New and Rehabbed Subsidized Units, '00-'14	417.9	20.8	150.3
Average Number of New Transit Stations '00-'14	0.3	0.8	2.3
n (# of tracts)	24	510	14

Source: 2000 Decennial Census, 2009-13 ACS, TCAC, MTC, HUD

In the Bay Area, we see a similar mix of non-development-driven gentrification and some development-driven gentrification of different types (Table 2C.4 and Figure 2C.4). Of the 125 Census tracts that gentrified between 2000 and 2013, half (63) were in TOD areas. Yet, the vast majority of these TODs (58) that gentrified did not experience much development. Only five of these tracts experienced housing development, including two subsidy-driven neighborhoods. One of these gentrifying TODs that witnessed a significant amount of subsidized residential development is in San Francisco's South of Market neighborhood, where 438 units were developed in five different projects between 2002 and 2013. The other is in Downtown Oakland, where 313 subsidized units (along with 400 market-rate units) were developed in three different projects. The three TOD neighborhoods that experienced privately driven development and gentrified between 2000 and 2013 were: 1) the Jack London Square neighborhood of Oakland where 1,301 market-rate units were developed as well as 103 subsidized units, 2) Milpitas near the Santa Clara Valley Transportation Authority (VTA) Great Mall Station where 2,904 new market-rate units were developed and no subsidized housing was built, and 3) the Midtown neighborhood in San Jose near the VTA light-rail stations, where 1,087 market-rate units were developed and no subsidized housing was built.

While many TOD tracts experienced housing development, they did not undergo gentrification either because they were not low-income to begin with, or because there was not sufficient demographic change during the time period analyzed.

Table 2C.4: Number of tracts that gentrified and did not gentrify in the 9-County Bay Area, Categorized by TOD Typology

	Gentrified '00-'13	Did not Gentrify '00-'13
Subsidized Housing Driven Development	2	22
Little Development	58	452
Private Development w/New Transit	3	11

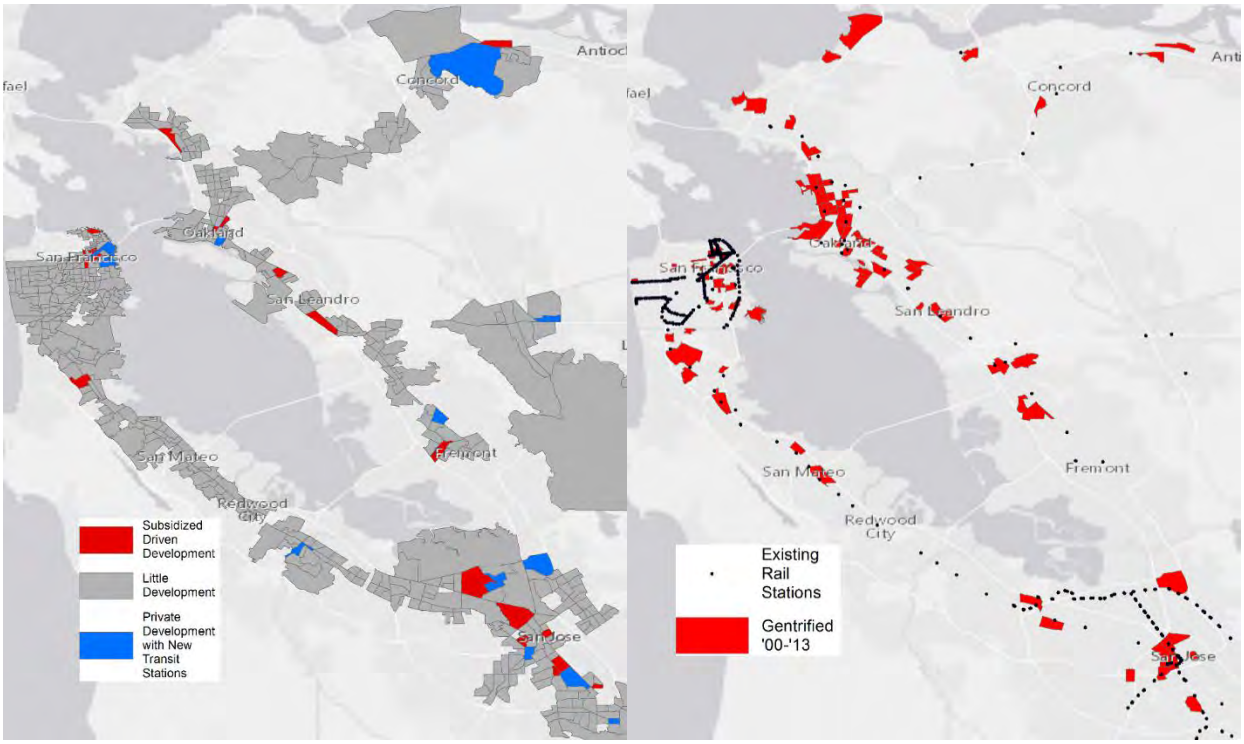

Figure 2C.4: Development Tracts in the Bay Area (L) and Gentrified Tracts in the Bay Area (R)

The relationship between gentrification and development is complex. The analysis depends on creating mutually exclusive categories, which may over-simplify complex phenomena (such as the changes in and around Downtown Long Beach, described on page 54). However, we find in general that the vast majority of tracts experienced relatively little development during the time period of analysis. In the Bay Area, most development occurred in tracts that did not gentrify. In contrast, in Los Angeles, development occurred in both gentrifying and non-gentrifying areas — but with most gentrification occurring in the absence of development.

Section 2D: Modeling Neighborhood Mobility

To assess neighborhood mobility patterns and the effects of proximity to rail transit stations, we developed models controlling for demographic characteristics, income, housing price appreciation, and other covariates. Our analysis of neighborhood mobility is done in two parts. The first part models both in-migration and out-migration rates for overall movers who reported moving within the last year. Part two examines the demographic and socioeconomic characteristics of in-movers. We attempted to estimate the numbers out-movers and examine their demographic and socioeconomic characteristics but it did not produce any robust results. Our main finding is that higher-income and better-educated persons make up a higher share of in-movers in TOD areas for both the Bay Area and Los Angeles. Additionally, non-Hispanic whites also make up a higher share of in-movers to TODs adjusting for all other factors for both regions. These findings are consistent with the gentrification thesis: that is, TODs are associated with demographic and socioeconomic change.

For the dependent variable of household mobility, we relied on the American Community Survey's (ACS) tract-level data. The five-year ACS now includes information on in-migration by race/ethnicity and income levels.

2D.1. In-/Out- Migration

This section examines both the in- and out-migration rates using data from the 2009-13 five-year ACS estimate. We use ordinary least squares (OLS) regressions to model residential mobility. The dependent variables are the calculated in- and out-migration rates. We include a series of independent variables related to socioeconomic, demographic, and housing characteristics. Additionally, variables related to residential mobility choice (e.g., proximity to amenities, housing cost burden, and the like) are included. The key variables of interest are the downtown and non-downtown TOD variables, which were included to measure whether or not TOD had an impact on the likelihood of people moving into or out of a neighborhood.

For Los Angeles, TOD neighborhoods are grouped into two separate categories: TODs that are located in Downtown Los Angeles ("Downtown TOD") and TODs that are located elsewhere ("Other TODs"). In recent decades, Downtown has gone through a major revitalization process with a surge in private investments and new developments. While it is important to control for these effects, the problem lies with the fact that all of the Downtown Los Angeles tracts are also TOD tracts, making it difficult to tease out the individual effects. The Downtown variable can only be interpreted as a subset of TOD areas that just happens to be in Downtown. In the Bay Area, there is no such obvious "downtown." However, we did separate out TODs in the three largest cities — San Francisco, Oakland and San Jose — and labeled them as "downtown" to determine if different dynamics are at play in the region's major cities in contrast to other TODs.

In order to calculate in-migration rates, we first calculated the number of in-movers. This was done by subtracting the number of non-movers or "stayers" (lived in the same house 1 year ago) from the total number of persons in that tract. We then divided this number by the tract's total population in the previous year, in this case 2012, and multiplied this by 100. We relied on the 2008-2012 ACS for the total population counts in the previous year, since it is the only available source of information to include population counts in 2012 at the tract level. To calculate the out-movers, we subtracted the total population in the previous year (2012) and total number of estimated in-movers from the

total population in 2013. The numerator of the rate is the number of out-movers, while the denominator is the population in the previous year. Figure 2D.1 provides the formulas utilized in calculating migration rates.

In-movers = total number of persons – lived in same house 1 year ago

Out-movers = Total Pop_{2013} – Total Pop_{2012} – In-Movers

$$\text{In-Migration Rate} = \left(\frac{\text{Number of In-Movers to Tract X in 2013}}{\text{Total Population in Tract X in 2012}}\right)$$

$$\text{Out-Migration Rate} = \left(\frac{\text{Number of Out-Movers to Tract X in 2013}}{\text{Total Population in Tract X in 2012}}\right)$$

Figure 2D.1: In- and Out-Migration Rates Calculations

We begin with a simple bivariate analysis of the relationship between TODs and in-/out- migration rates. Figures 2D.2 and 2D.3 compare the rates for TOD and non-TOD areas. From the bivariate analysis, we do observe that TOD neighborhoods have higher rates of in- and out-migration than non-TOD areas in Los Angeles. This is consistent with the literature that TODs have an impact on residential mobility. TODs can make a neighborhood more desirable and attractive to those who want to be closer to transit, leading to in-migration. Conversely, the neighborhood's proximity to transit can also lead to price escalation, pricing out those who can no longer afford to live in the neighborhood, and thus exiting.

The effect is less dramatic in the Bay Area, where TOD areas have in- and out-migration rates that are only slightly higher than non-TOD areas. The bivariate analysis, however, does not account for other neighborhood characteristics that may influence in- and out-migration. For example, low-income and renter households generally have higher mobility rates. A TOD neighborhood with a larger share of low-income or renter households might exhibit higher rates of in- and out-migration because of other factors in the neighborhood, not due to TOD per se. We used multivariate regression models to determine if this relationship holds after controlling for all other factors related to the neighborhood's characteristics.

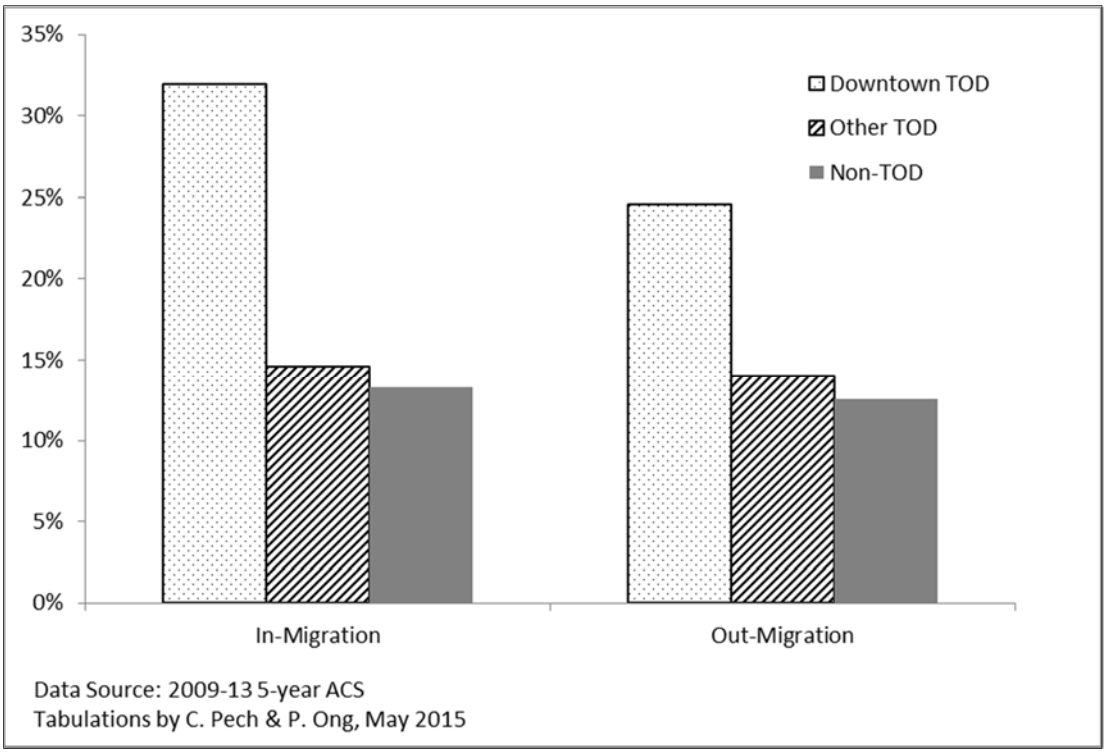

Figure 2D.2: Bivariate Analysis, In- and Out-Migration Rates for Los Angeles, 2009-2013

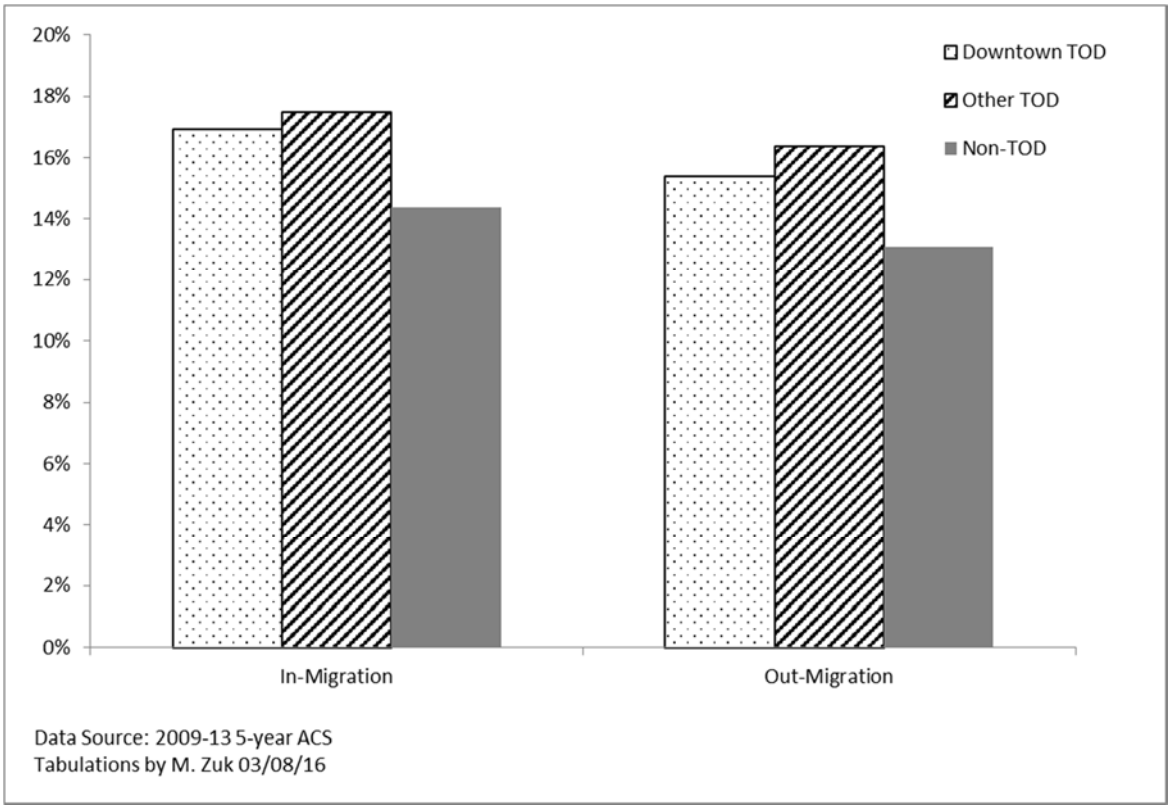

Figure 2D.3: Bivariate Analysis, In- and Out-Migration Rates for the SF Bay Area, 2009-2013

We initially ran regressions for both in- and out-migration that included an extensive list of control variables, many of which were collinear, producing problems of multi-collinearity and endogeneity. The results are presented in Appendix R. To reduce multi-collinearity, we ran more parsimonious models to include a more limited set of key variables. The key independent variables are lagged (that is, from the previous period), thus reducing endogeneity. Data for the independent variables come from the 2006-2010 five-year ACS, the earliest available in which the tract boundary is consistent with the 2009-2013 five-year ACS (the previous five-year ACS uses the 2000 boundary). We acknowledge that this method is not perfect since the 2009-2013 and 2006-2010 five-year ACS both include the 2009 and 2010 individual ACS.

Results for the parsimonious migration models are presented in Table 2D.1 In Los Angeles, with the exception of Downtown TODs, we do not see TODs having any effect on mobility in Los Angeles. In comparison, proximity to rail outside of the three major cities in the Bay Area (San Francisco, Oakland, and San Jose) is positively associated with in-migration, and negatively associated with out-migration. In the three main cities of the Bay Area, the pattern is reverse, with higher out-migration rates and lower in-migration rates.

In Los Angeles, TODs seem to accelerate change in locations that are going through transitions. The transit system going through Downtown Los Angeles was meant to bring people in and out of Downtown. It contributes to making Downtown more accessible and more susceptible to neighborhood change and development. The other changes occurring in Downtown (e.g. Grand Avenue project, Staples Center) are not the consequence of TOD; instead, TODs may help serve them.

For the Bay Area, the variability in TODs and development seems to be too great to draw any general conclusions. For instance, when including a variable for TODs, without differentiating between those in the major cities, we find positive, but not significant association for both in- and out-migration. When we differentiate between TODs in the three major cities versus other TODs, we find greater in-migration and less out-migration in non-central TODs, and the reverse in central TODs. This non-intuitive relationship may result from the wide variability in land use types among the TODs in the three major cities: some actually have more suburban land use characteristics (e.g., low density), despite being in a major city. This could also result from the timing of construction, which we don't control for – if the "Other TODs" are built more recently than the "Downtown TODs", and construction is a nuisance, out-migration rates may temporarily be higher than in-migration.

Table 2D.1: In-Out Migration, Parsimonious Multivariate Regressions

	In-Migration		Out-Migration	
	Los Angeles	Bay Area	Los Angeles	Bay Area
Constant	0.0909 ***	0.1122 ***	0.0348 *	-0.1123 ***
Median Household Income (/10,000)	0.0061 ***	-0.0033	0.0115 ***	0.005996 **
Income Squared	-0.0003 ***	0.00014	-0.0005 ***	-0.00026 **
% non-Hispanic black	-0.0002 **	0.037 **	-0.0001	-0.0015
% Asian	-0.0007 ***	-0.0278 ***	-0.0004 ***	0.023764 **
% Hispanic	-0.0011 ***	-0.0579 ***	-0.0009 ***	0.065866 ***
Downtown TOD	0.1219 ***	-0.0107 **	0.0558 **	0.015904 ***
Other TOD	-0.0046	0.0129 ***	-0.0043	-0.01239 **
% Renters	0.0016 ***	0.18276 ***	0.0018 ***	-0.19257 ***
Adj R-Squared	0.3411	0.3256	0.2576	0.268
n	2,315	1578	2,315	1578

*** P<.01, ** p<.05, *p<.10

Source: 2006-10, 2009-13 ACS

Tabulations by C.Pech & P. Ong, May 2015, M. Zuk Aug 2015

2D.2. Composition of In-Movers

Our second analysis of residential mobility looks at the composition of the in-movers by income and demographic characteristics. Specifically, we focus on the share of in-movers who are low-income, high-income, non-Hispanic white, individuals with less than a high school diploma, and persons with a bachelor's degree or higher. In part due to differences in the income distributions between the two regions (and high intra-region variability in the Bay Area), we use slightly different categories for low and high income. For Los Angeles we define low-income as persons who move with less than $10,000 annual income, and for the Bay Area we use the Census calculated incomes below the Federal Poverty level (~$11,500 for a one-person household in 2013). For high income in Los Angeles, we use $65,000 annual individual income as the cutoff and for the Bay Area we use 120% of each county's median per capita income for that year (between ~$35,000 and $68,000) and rounded to the closest Census income category.

We attempted to estimate the number of out-movers by subgroup using the method presented in Figure 2D.1, but the small sample size of the ACS resulted in uncertain estimates that made the models unreliable. We therefore only report results for in-movers by subgroup. We use the following equations to estimate the share of in-movers for each sub-population (example shown for low-income):

$$\#\ \text{In-Movers}_{\text{low-income}} = (\text{Total}_{\text{Persons Age 15+}} - \text{Non-Movers}_{\text{low-income}})$$
$$\%\ \text{In-Movers}_{\text{low-income}} = (\#\ \text{In-Movers}_{\text{low-income}} / \text{Total In-Movers}) * 100$$

Table 2D.2 contains the bivariate analysis by subgroup. The bivariate analysis shows mixed results for the gentrification hypothesis. Data for both TOD and non-TOD areas show that in-movers are lower income than stayers (Δ = % in-movers - % stayers). This, however, may be confounded by the Great Recession which depressed overall income. Figure 2D.4 shows the decline in per-capita income (adjusted to 2013 dollars) following the Great Recession. The changes in TOD by educational levels in Los Angeles show an increase at the two extremes; that is, in-movers are more likely to have less than a high school diploma and more likely to have at least a bachelor's degree. In

the Bay Area, while in-movers to TODs are more likely to have bachelor's degrees, they are less likely to have less than a high school diploma. The analysis for non-Hispanic white is unambiguous in Los Angeles. In-movers in TOD areas are more likely to be of that group than stayers. This is also true for the Bay Area, except for TOD areas outside of the three major cities, where in-movers are less likely to be non-Hispanic white.

Table 2D.2: Bivariate Analysis by Subgroups, LA County and the Bay Area, 2009-2013

	Los Angeles				Bay Area			
	Not TOD	All TOD	Down-town TOD	Other TOD	Not TOD	All TOD	Down-town TOD	Other TOD
Low Income (LT 10K)[1]								
Stayers (% Below 10K)	15.8	17.7	21.2	17.5	9.3	12	14.8	9.2
In-Movers (% Below 10K)	18.4	19.3	21.9	19.2	15.8	18.8	22.1	15.5
Δ (% In-Movers-% Stayers)	2.7	1.7	0.6	1.7	6.5	6.7	7.2	6.3
Δ Δ (Δ TOD-Δ Non-TOD)	0	-1.0	-2.0	-0.9	0	4.0	4.5	3.6
High Income (65K+)[2]								
Stayers (% Above 65K)	15.8	9.5	14.7	9.3	22	21.2	20.5	21.9
In-Movers (% Above 65K)	12.7	9.1	15.8	8.8	4	5.1	5	5.3
Δ (% In-Movers-% Stayers)	-3.1	-0.5	1.1	-0.5	-18	-16.1	-15.5	-16.6
Δ Δ (Δ TOD-Δ Non-TOD)	0	2.6	4.2	2.6	0	-13.0	-12.4	-13.5
non-Hispanic white								
Stayers (% non-Hispanic White)	30.8	17.1	25.9	16.7	46.6	38.7	34.5	42.8
In-Movers (% non-Hispanic White)	28.4	19.4	28.4	19.0	43.2	39.5	39.2	39.7
Δ (% In-Movers-% Stayers)	-2.3	2.3	2.4	2.3	-3.5	0.9	5	-3.1
Δ Δ (Δ TOD-Δ Non-TOD)	0	4.6	4.8	4.6	0	3.2	7.3	-0.8
Less than High School								
Stayers (% w/ LT HS)	23.5	28.6	29.3	35.5	29.9	32.1	34.3	29.9
In-Movers (% w/ LT HS)	20.9	35.2	25.0	28.8	28.8	27.9	28	27.8
Δ (% In-Movers-% Stayers)	-2.6	6.6	-4.3	-6.7	-1	-4.1	-6.4	-1.8
Δ Δ (Δ TOD-Δ Non-TOD)	0	9.2	-1.7	-4.1	0	-1.5	-3.8	0.8
Bachelor's Degree or Higher								
Stayers (% w/ BA+)	28.8	22.0	32.7	21.6	41.6	43.2	42.1	44.3
In-Movers (% w/ BA+)	32.0	28.4	40.3	28.0	44	49.1	48.2	49.9
Δ (% In-Movers-% Stayers)	3.3	6.4	7.7	6.4	2.3	5.9	6.3	5.5
Δ Δ (Δ TOD-Δ Non-TOD)	0	3.1	4.4	3.1	0	2.6	3.0	2.2
n	1,960	387	15	372	1,029	551	276	275

[1] In the Bay Area, people in poverty that moved in or stayed was used for this category

[2] Because of the higher incomes in the Bay Area, this category was calculated as in-movers and stayers that had incomes greater than 120% of the county median income

Source: 2009-13 ACS

Tabulations by C.Pech & P. Ong, May 2015, M. Zuk, Aug 2015

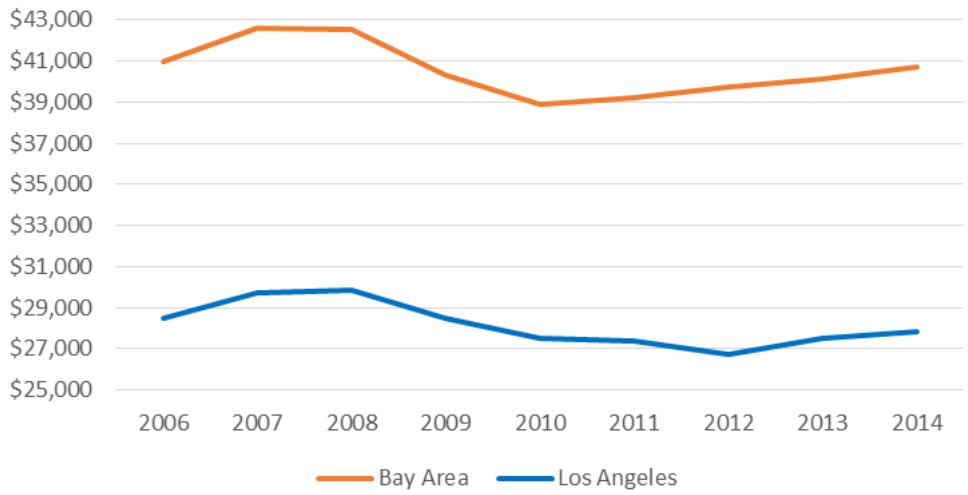

Figure 2D.4: Per-Capita Income, LA County and 9-County Bay Area (adjusted to 2013 dollars)

We ran also multivariate regressions to see whether or not we find the same results even after controlling for neighborhood demographics. Tables 2D.3 and 2D.4 report the results of the OLS regressions for each of the subgroups. After accounting for the demographic and socioeconomic characteristic (race/ethnicity and income), Downtown location, and tenure, we find that low-income and less-educated persons make up a lower share of in-movers in TOD areas than in non-TOD areas for Los Angeles. In the Bay Area, individuals in poverty actually make up a higher share of in-movers into downtown TODs, but not into non-downtown TODs. This may be related to the location of subsidized housing opportunities for very-low-income households. Conversely, higher-income and better-educated persons make up a higher share of in-movers in TOD areas for both the Bay Area and Los Angeles. Finally, non-Hispanic whites make up a higher share of in-movers to TODs after adjusting for all other factors for both regions. The multivariate results are consistent with the gentrification thesis: that is, TODs are associated with the a priori hypothesis of demographic and socioeconomic change.

Table 2D.3: Modeling Share of In-Movers by Subgroups, Multivariate Regressions for Los Angeles County, 2009-2013

	Low-Income (<10K)	High-Income (65K+)	Less than High School	Bachelor Degree or Higher	non-Hispanic white
Constant	19.233 ***	2.561	5.992 *	0.744	51.633 ***
Median Household Income	-1.642 ***	0.633 **	-0.677	1.472 ***	0.002
Income Squared	0.064 ***	0.011	0.024	-0.052 ***	0.296 ***
% non-Hispanic black	0.020	-0.041 ***	0.078 ***	-0.114 ***	-0.560 ***
% Asian	-0.033 **	-0.048 ***	-0.016	0.007	-0.551 ***
% Hispanic	0.005	-0.076 ***	0.130 ***	-0.101 ***	-0.546 ***
Downtown TOD	-0.316	4.225 *	2.970	2.700	4.821
Other TOD	-1.599 **	1.315 ***	-1.175	2.798 ***	1.440 *
% Renters	-0.024 *	0.030 ***	-0.060 ***	0.105 ***	0.066 ***
n	2,307	2,307	2,307	2,307	2,307
Adj. R-Squared	0.1206	0.5915	0.5698	0.677	0.7639

*** P<.01, ** p<.05, *p<.10

Source: 2009-13 ACS

Tabulations by C.Pech & P. Ong, May 2015

Table 2D.4: Modeling Share of In-Movers by Subgroups, Multivariate Regressions for the Bay Area, 2009-2013

	In Poverty	High-Income (> 120% County Median Income)	Less than High School	Bachelor Degree or Higher	non-Hispanic white
Constant	0.412 ***	-0.055 ***	0.496 ***	0.078 *	0.898 ***
Median Household Income	-0.053 ***	0.013 ***	-0.051 ***	0.055 ***	-0.001
Income Squared	0.002 ***	0.000 ***	0.001 ***	-0.001 ***	0.000
% non-Hispanic black	0.171 ***	-0.013 *	0.198 ***	-0.345 ***	-0.794 ***
% Asian	0.016	-0.014 ***	0.132 ***	-0.043 *	-0.933 ***
% Hispanic	0.077 ***	-0.048 ***	0.684 ***	-0.671 ***	-0.959 ***
Downtown TOD	0.019 **	0.004 *	-0.024 **	0.045 ***	0.048 ***
Other TOD	-0.014	0.008 ***	-0.015 **	0.048 ***	0.002
% Renters	0.020	0.091 ***	-0.258 ***	0.410 ***	0.066 ***
n	1,575	1,578	1,575	1,575	1,576
Adj. R-Squared	0.328	0.3922	0.5685	0.579	0.7169

*** P<.01, ** p<.05, *p<.10

Source: 2009-13 ACS

Tabulations by M. Zuk, Aug 2015

Section 2E: Modeling Neighborhood Displacement

To better understand the relationship between TODs, gentrification, and displacement, we develop dichotomous and multinomial logit models. We conduct two primary analyses, one on gentrification and the other on changes affordable rental housing. We first construct gentrification measures, which can include both direct and exclusionary displacement, for both Los Angeles and the Bay Area. Due to the unique conditions of each region and access to different data sources, gentrification is defined differently for each region. The second analysis focuses on a more direct measure of displacement, the loss of affordable housing which includes changes in affordable rental units, condo conversion, Section 8 housing, Low-Income Housing Tax Credit units, and evictions. For the San Francisco Bay Area we also explore the decline in low-income households, an indicator of displacement that is particularly salient in the region due to rising income inequality. Our main findings are that there is evidence of neighborhood change and gentrification in TOD areas. The magnitude of change varies by the type of TOD. Additionally, we find that relative to non-TOD areas, transit neighborhoods are experiencing greater losses in affordable rental housing.

2E.1. Gentrification

The method used to develop the gentrification index for this study incorporates several methods of gentrification from previous studies. These include the work done by Lance Freeman (2005) for the U.S., Lisa Bates for Portland (2013), the Bay Area (CJJC 2014; Haas Institute 2015), and the recent analysis of the largest 50 cities in the United States by *Governing Magazine* (Maciag 2015). We made some modifications to reflect the unique conditions of Los Angeles. We use the following criteria to define a neighborhood (Census tract) as having gentrified between years 1 and 2.

For Los Angeles, a tract was vulnerable to gentrification (or eligible to gentrify) if it met all of the following criteria:

1. The tract had a population of at least 500 residents in year 1
2. Vulnerable, meeting 3 out of 4 of the following indicators:
    a. % low-income households (household income below 80% of the county median) > county median
    b. % college educated < county median
    c. % renters > county median
    d. % nonwhite > county median

A tract is said to be gentrified or gentrifying if it meets eligibility and all of the following criteria:

1. Demographic change between years 1 and 2
    - Change in % college educated > county (percentage points)
    - Change in % non-Hispanic white > county (percentage points)
    - Change in median household income > county (absolute value)
2. Change in Median Gross Rent > Change County Median Gross Rent (absolute value)

For Los Angeles, two major modifications were made to the index that makes it different from the previous work on gentrification. One, instead of focusing on homeowners and property values (e.g., change in home values), we focused on the rental housing market. Renters are more susceptible to gentrification and displacement due to increase in rent (e.g., generally, homeowners benefit from rising property values). Second, we included change in non-Hispanic whites into the demographic change criteria. As noted in the literature review, gentrification involves racial changes, particularly the replacement of minority population with the dominant social group. In Los Angeles, the dominant social group, in terms of political power and socioeconomic status, are non-Hispanic whites.

For Los Angeles, we were unable to estimate the number of changes in market and non-market units (e.g., affordable, below market rate, subsidized) because we did not have information on affordable units that were negotiated with private developers in exchange for concession. Table 2E.1 reports the county averages and changes for the three decades in Los Angeles.

Table 2E.1: Gentrification Criteria for Los Angeles, County Averages

	1990	2000	2013	Δ 1990-2000	Δ 2000-2013
% non-Hispanic white	41%	31%	28%	-10%	-4%
% with bachelor's degree or higher	22%	25%	30%	3%	5%
Median Household Income (2013 dollars)	$63,423	$58,982	$55,909	-$4,441	-$3,073
Median Gross Rent (2013 dollars)	$1,082	$952	$1,204	-$130	$252

Source: 1990 and 2000 Decennial Census, 2009-2013 five-yr ACS

Using the above definition for Los Angeles, we find that 81 tracts gentrified between 1990 and 2000, and 82 tracts gentrified between the years 2000 and 2013. Of these 82 tracts that gentrified between 2000 and 2013, eight also gentrified in the previous decade. We estimate that a total of 155 tracts gentrified between 1990 and 2013 in Los Angeles. The tracts that gentrified are displayed in Figure 2E.1. It includes tracts that gentrified *in each* of the time period and those that gentrified in *both* time periods. Additionally, vulnerable tracts (see above criteria) are also displayed, regardless of the time period of when they were vulnerable.

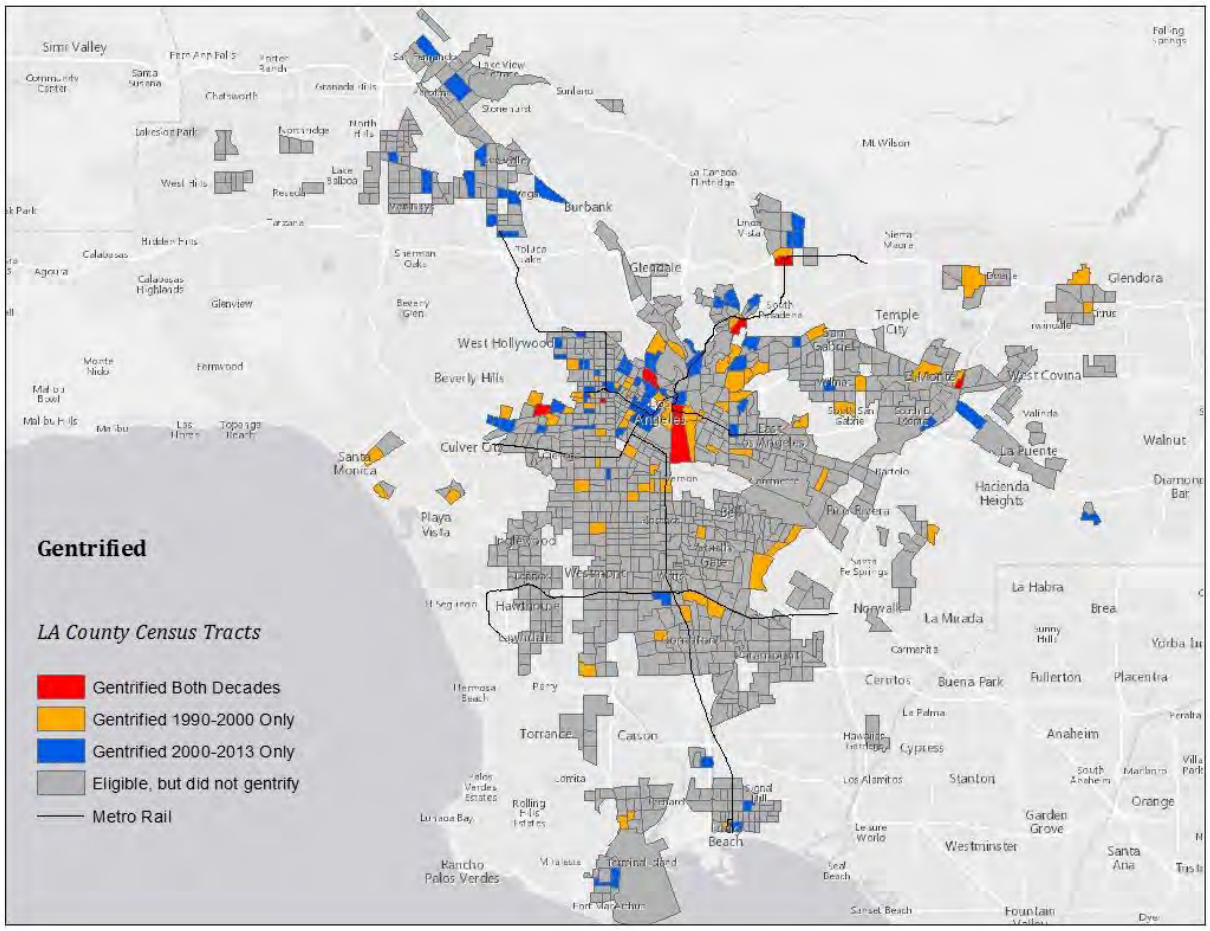

Figure 2E.1: Gentrified/Gentrifying Census Tracts, LA County 1990-2013

For the Bay Area, this index was modified slightly to reflect the conditions of the region. First, all measures were compared to the regional median that includes nine counties. Second, we did not use change in non-Hispanic white in the demographic change criteria, as considerable research has emerged on the nature of black- and Asian-driven gentrification in strong markets like the Bay Area. Finally, because of the role of the influx of global capital into the housing market, we used a combination of housing price increases and new market-rate units for the second criteria of change.

For the Bay Area, a tract was vulnerable to gentrification if it met all of the following criteria:

1. The tract had a population of at least 500 residents in year 1
2. Vulnerable, meeting 3 out of 4 of the following indicators:
    a. % low-income households (household income below 80% of the county median) > regional median
    b. % college educated < regional median
    c. % renters > regional median
    d. % nonwhite > regional median

A tract is said to be gentrified or gentrifying if it meets eligibility and all of the following criteria:

1. Demographic change between years 1 and 2
    a. Change in % college educated > region
    b. Change in median household income > region

2. Investment between years 1 and 2:
    a. % market rate units built > regional median
    b. Growth in of the following
        - % increase of single-family sales price per square foot > regional median
        - % increase of multi-family sales price per square foot > regional median
        - % increase of home value > regional median (where sales value is unavailable = 57 tracts)

Table 2E.2 reports the regional medians used for the Bay Area.

Table 2E.2: Gentrification Criteria, Medians for the 9-County Bay Area

	1990	2000	2013	Δ 1990-2000	Δ 2000-2013
% low-income	37%	37%	39%	0%	2%
% with bachelor's degree or higher	27%	35%	41%	8%	6%
% renter	38%	37%	41%	-1%	4%
% non-white	33%	46%	57%	13%	11%
Δ with bachelor's degree or higher	-	-	-	6%	5%
Δ in median household income	-	-	-	$9,925	-$5,719
% of market-rate units built	-	-	-	3%	3%
% increase in single-family sales price per square foot	-	-	-	22%	8%
% increase multi-family sales price per square foot	-	-	-	23%	5%
% increase home value for owner-occupied units	-	-	-	2%	15%

Source: 1990 and 2000 Decennial Census, 2009-2013 five-yr ACS, and Dataquick (2014)

Using the above criteria for the Bay Area, we find that 83 tracts gentrified between 1990 and 2000 and 85 tracts gentrified between the years 2000 and 2013 (Figure 2E.2). Of these 83 that gentrified between 2000 and 2013, 19 were tracts that gentrified between 1990 and 2000 as well. In total we estimate that 149 tracts gentrified between 1990 and 2013. The fact that a tract has gentrified between two years does not preclude them from continued change. In fact, of the 149 tracts that we estimate to have gentrified between 1990 and 2013, 71 had lower rates of growth of low-income households than the rest of the region, 105 lost naturally occurring affordable housing, and 100 had lower rates of in-migration of low-income residents in 2013 than they did in 2009. Furthermore, 88 of the gentrified tracts continue to have higher proportions of low-income households than the region (39%).

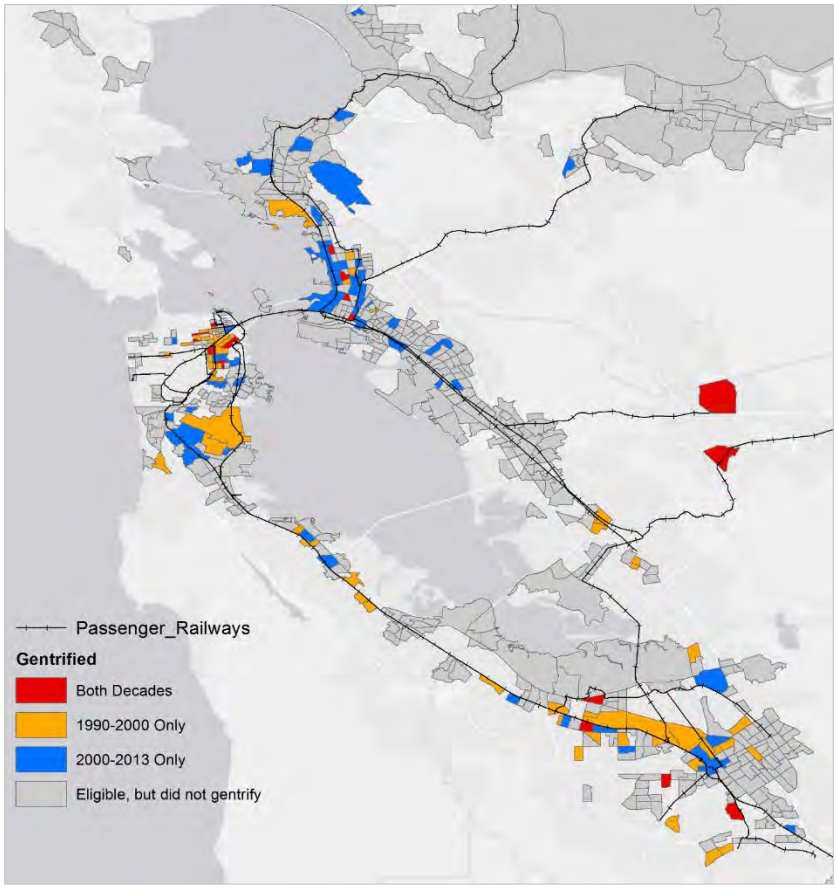

Figure 2E.2: Gentrified/Gentrifying Census Tracts, SF Bay Area 1990-2013

Our finding that tracts that gentrified in the first decade from 1990-2000 had a higher risk of gentrifying again from 2000-2013 is also shown with a simple bivariate analysis. In the Bay Area, the probability to continue gentrifying from 1990-2000 to 2000-2013 were over twice as likely as newly gentrifying areas from 2000-2013 (23% vs. 11%). In Los Angeles, a neighborhood that gentrified in the previous time period was over three times as likely to gentrify again in the following decade (10% vs. 3%). To test whether or not the findings hold true after controlling for the characteristics of the neighborhood, we ran a logit model for the 2000-2013 period to include a variable indicating whether the tract was gentrifying in the previous decade (1990-2000). After controlling for the characteristics of the neighborhood, we did not find any independent significance for Los Angeles; however, the relationship in the Bay Area was highly significant after controlling for neighborhood characteristics. The results for Los Angeles are likely due to the fact that the same variables that compelled the neighborhood to gentrify in the first period are compelling it to gentrify again, making it difficult to capture the independent effects. If a tract gentrifies in the first time period, it has much the same chance of gentrifying again, because the neighborhood has the same characteristics that led it to gentrify.

Although the chance of a tract potentially gentrifying again may be small, the fact of higher risk means that we should give additional consideration to these tracts relative or other potentially eligible tracts. Moreover, it is expected that changes that lead to gentrification would slow in the second decade, in part because some of the changes are reaching a "ceiling." What is worth noting is that another half of these tracts continued to change in the second decade in a direction that is partially related to gentrification.

Overall, we see that, if a tract started gentrifying, it will have a much higher risk of continuing down the path of gentrifying and/or upscaling. In some ways, if we project this forward, starting with the tracts that gentrified between 2000 and 2013, we can expect that a majority of these tracts will either continue to gentrify or upscale, thus putting them at a higher risk. In some ways, the methodology used to construct the gentrification index obscures some of the upscaling that continues to go on in some of these neighborhoods. Additionally, we need to look at other key factors that make an area gentrify. The next section uses logit and multinomial logit regression models to examine this.

Logit Regressions

Gentrification can include both direct displacement (socially and economically disadvantaged residents who are forced out) and exclusionary displacement (barriers that make it difficult for disadvantaged residents to move in). It is difficult to separate these two elements in the regression model. In this section, we begin by modeling gentrification for two individual time periods: 1990-2000 and 2000-2013.

For Los Angeles and the Bay Area, we use a logit regression model with two types of regression results (Tables 2E.3 and 2E.4). The first two models (I & II) only look at tracts that are eligible to gentrify, whereas the second set of models looks at all tracts (III & IV). The dependent variable is a dichotomous variable indicating whether or not a tract has gentrified. The independent variables include key factors related to gentrification (race and income), a tenure variable (percent renters), and two place variables (TOD neighborhoods and Downtown TOD). In this analysis, we separated TOD neighborhoods into three categories depending on the year the transit station opened: TOD 1990s (opened in the 1990s), TOD 2000s (opened in the 2000s), and TOD Recent (opened in 2012 or later *for LA only,* since there has been a lot of recent station development in LA compared to the Bay Area). Additionally, we include a built environment variable (percent of housing units in pre-WWII buildings, defined as those constructed before 1950) and an accessibility variable (# jobs/square mile). The baseline year data for the independent variables are either 1990 or 2000 depending on the period examined.

For Los Angeles, we find that when a station opens, there is a measurable statistical impact. In the first model, the transit stations that opened in the 1990s are associated with a significant positive impact on the tract gentrifying in that decade (Model I), but not in the following decade (Model II). Furthermore, for stations that opened in the 2000s, they negatively predict gentrification in that decade (Model II), and for stations that opened after 2012, they had a significant positive impact on the gentrification outcome. Downtown TODs positively predicted gentrification in all models. For the Bay Area, while new stations appear to influence gentrification positively between 1990 and 2000, they do not seem to have an impact on gentrification from 2000 to 2013. TODs in the three major cities (Oakland, San Francisco, and San Jose, labeled downtown) were more likely to gentrify than TODs in other cities for both time periods, however only downtown TODs were significant for the more recent model.

The role of race remains significant, but its impact changes from one decade to the next. For Los Angeles, the first model tells us that gentrification is occurring in minority areas. Model I (which covers 1990-2000) indicates that neighborhoods with a higher share of non-white population were more likely to gentrify, while Model II (which covers 2000-2013) implies the opposite. In other words, gentrification was initially concentrated in minority areas and then shifted to others. This may be due in part to the possibility that some areas continued to gentrify even after losing much of their minority population. When comparing the eligible and non-eligible models for Los Angeles, we

see a flip in the signs on the race variables, particularly for the 1990-2000 models (Model I and Model III). This would indicate that while gentrification is occurring more in predominantly minority neighborhoods, overall upscaling is more likely to occur in predominantly white neighborhoods. The changes in the estimated coefficients indicate that some patterns of gentrification/upscaling are time- and location-specific, perhaps due to changes in unobserved factors that alter the relative attractiveness for development. In the Bay Area, African-American neighborhoods were more likely to experience gentrification during the later time period (2000-2013), but not the earlier (1990-2000), possibly reflecting shifts in neighborhood preferences or housing availability.

With respect to non-demographic drivers of gentrification, in Los Angeles, the percent of all units that were built prewar is statistically significant, indicating that neighborhoods with a higher share of older units are more likely to experience gentrification. The same was true for the Bay Area model from 2000-2013, again potentially reflecting shifts in neighborhood and housing preferences. While the impact of the access variable (job density) was positive and significant in all of the Los Angeles models, it was only significant and positive in the Bay Area in the 2000-2013 model when including all of the Census tracts, possibly indicating that accessible neighborhoods have become more attractive to gentrifiers over time.

Table 2E.3: Logit Regressions of Gentrification, 1990-2000 and 2000-2013, Los Angeles

	Eligible Tracts				***All Tracts***			
	Model I LA 1990-2000		**Model II LA** 2000-2013		**Model III LA** 1990-2000		**Model IV LA** 2000-2013	
Intercept	-3.2807	***	2.6899	***	-5.7477	***	-4.5411	***
Median Household Income (/10000)	-0.2130	**	-0.8161	***	0.4623	***	0.2741	***
Income Squared	0.0208	*	0.0852	***	-0.0111	***	-0.0240	***
% non-Hispanic black	0.0065	***	-0.0756	***	-0.0069	***	-0.0124	***
% Asian	0.0273	***	-0.0296	***	-0.0157	***	0.0015	
% Hispanic	0.0126	***	-0.0538	***	-0.0106	***	-0.0160	***
% Renters	-0.0065	***	0.0026		0.0214	***	0.0247	***
Downtown TOD	0.5736	***	0.4838	***	0.7406	***	0.6822	***
TOD 1990s	0.1327	**	-0.0381		0.3575	***	-0.0193	
TOD 2000s	-		-0.2962	***	-		-0.2677	***
TOD Recent	-		1.0297	***	-		0.3971	***
% of Housing Units Prewar (<1950)	0.0178	***	0.0345	***	0.0259	***	0.0309	***
Employment Density (# jobs / square mile)	0.0001	***	0.0006	***	0.0001	***	0.0002	***
N	937		929		2,273		2,306	
Likelihood Ratio	493.110	***	2157.547	***	7822.79	***	6436.391	***
***<.01 **<.05 *<.10								

Source: 1990 and 2000 Decennial Censuses, 2009-13 5-year ACS, NETS (1990, 2000)
Tabulations by C.Pech & P. Ong, July 2015

Table 2E.4: Logit Regressions of Gentrification, 1990-2000 and 2000-2013, Bay Area

	Eligible Tracts				*All Tracts*			
	Model I BA		**Model II BA**		**Model III BA**		**Model IV BA**	
	1990-2000		2000-2013		1990-2000		2000-2013	
Intercept	-6.690	***	-4.861	***	-8.060	***	-7.191	***
Median Household Income (/10000)	0.692	**	0.332		0.765	**	0.698	**
Income Squared	-0.032		-0.011		-0.059	**	-0.057	**
% non-Hispanic black	0.012		2.030	**	1.383	*	3.772	***
% Asian	-0.890		-0.362		0.256		1.385	
% Hispanic	-0.711		-0.242		1.800	**	2.216	***
% Renters	2.373	***	0.598		3.524	***	1.412	*
Downtown TOD	1.906	***	0.782	**	1.363	***	0.366	
Non-Downtown TOD	0.841	**	-0.269		1.058	***	0.087	
TOD 1990s	0.823	**	-0.465		0.883	***	-0.179	
TOD 2000s	-		0.354		-		0.372	
% of Housing Units Prewar (<1950)	0.438		1.783	***	-0.143		1.039	*
Employment Density (# jobs / square mile)	0.000		0.000		0.000		0.000	*
N	640		626		1576		1579	
Likelihood Ratio	219.9	***	229.9	***	262.5	***	266.7	***
***<.01 **<.05 *<.10								

Source: 1990 and 2000 Decennial Censuses, 2009-13 5-year ACS
Tabulations by M. Zuk Aug 2015

2E.2. Changes in Affordable Housing

In this section, we look at the loss of affordable housing, which serves as proxy for displacement. This is measured by the change in affordable rental units, condo conversions (cities of Los Angeles and San Francisco only), Housing Choice Vouchers (Section 8), Low-Income Housing Tax Credit (LIHTC) units, Ellis Act evictions (city of Los Angeles only) and fault/no fault evictions (city of San Francisco only).

In Los Angeles, we define affordable rental units as units with median gross rent of less than 80% of the county median. For the Bay Area, we define these units as those where low-income households are paying less than 30% of their income on rent and we subtract out subsidized units. Details on data sources and definitions can be found in Appendix I.

Table 2E.5 presents the results for each of the regression models for Los Angeles. We begin by first examining the change in affordable rental units and condo conversions, which is presented in the first two columns. The market as a whole is facing some losses of affordable rental units and of apartments converted to condos, particularly in Downtown. TOD neighborhoods outside of Downtown are also experiencing loss in affordable rental units and conversions from apartments to condos. The next two columns – changes in Section 8 and LIHTC units – look specifically at subsidized housing. While Los Angeles county overall has seen an increase in the number of Section 8 units within the last decade, TOD areas are not experiencing increases in Section 8 units, and TODs outside of Downtown are actually losing them. LIHTC seems to help offset some of the loss because there is an increase of them in both TOD areas, much more so for the Downtown. The increase in LIHTC in TOD areas, however, has not been large enough to offset the total loss of affordable rental units that are occurring in the area. The final model looks at Ellis Act evictions, which are only available for the City of Los Angeles. Because of these data limitations, the results should be interpreted cautiously. They indicate that there are not many Ellis Act evictions occurring in TOD areas. The negative coefficient on the Downtown TOD variable indicates that Ellis Act

evictions are occurring less in the Downtown area. Other types of evictions, which are not Ellis Act, can be occurring in TOD areas, but because this data is unavailable, it is hard to capture this.

Table 2E.5: Changes in Affordable Housing[2], Linear Regressions (Los Angeles)

	Model I		Model II		Model III		Model IV		Model V	
	Δ Affordable Rental Units (00-13)		Condo Conversions (03-13)		Δ Section 8 (00-13)		Δ LIHTC (00-13)		Ellis Act Evictions (07-14)	
Intercept	-2.353	**	1.556	***	3.284	***	4.071	***	1.137	***
Median Household Income (/10000)	0.634	***	-0.055		-0.494	***	-0.664	***	-0.100	***
Income Squared	-0.028	***	-0.001		0.017	***	0.023	***	0.002	**
% non-Hispanic black	0.027	***	-0.010	***	0.013	***	0.003		-0.008	***
% Hispanic	0.021	***	-0.015	***	-0.008	***	-0.002		-0.008	***
% Asian	0.008		-0.008	**	-0.005	*	0.001		-0.003	
Downtown TOD	-18.966	***	4.486	***	-0.678		12.945	***	-0.290	*
Other TOD	-2.551	***	0.341	***	-0.365	***	0.392	*	0.050	
Adj. r-squared	0.091		0.052		0.112		0.147		0.0704	
N	2,316		2,317		2,316		2,316		993	
***<.01 **<.05 *<.10										

Ellis Act Evictions Data Are Only for LA City, All Other Data are for the County
Source: 2000 Decennial Census, 2006-10 & 2009-13 5-year ACS, 2000 & 2013 HUD's Picture of Subsidized Households, CTCAC, Housing Authority of the City of Los Angeles, Tabulations by C.Pech & P. Ong, July 2015

For the Bay Area (Table 2E.6), we find that being in a TOD predicts the loss of non-subsidized affordable housing and use of Section 8 vouchers; however, the effect is not significant. Similar to Los Angeles, we find that being in a TOD in one of the Bay Area's three major cities – San Francisco, Oakland, and San Jose – positively predicts the addition of federally subsidized housing (LIHTC). However, being in a TOD outside of these three cities predicts fewer new subsidized units. For the entire region, an increase in affordable housing is predicted for minority neighborhoods through both naturally occurring rental units and the use of housing choice vouchers; however, only Hispanic neighborhoods see new federally subsidized units.

[2] We ran an analysis looking at the change in public housing units in TOD and non-TOD areas and found that changes in TOD areas are essentially the same as in non-TOD areas (the difference in proportion is not statistically different). From 2000 to 2013, non-TOD areas lost 5.8% of their public housing units, whereas non-TOD areas lost 6%.

Table 2E.6: Changes in Affordable Housing, Linear Regressions (Bay Area)

	Model I	Model II	Model III
	Δ Affordable Rental Units (00-13)	Δ Section 8 (00-13)	Δ Federally Subsidized (00-14)
Intercept	-142.541 ***	34.043 ***	96.232 ***
Median Household Income, 2000	14.112 ***	-3.880 ***	-14.105 ***
Income Squared, 2000	-0.365 ***	0.086 *	0.4716 ***
% Asian, 2000	40.256 ***	36.249 ***	3.703
% non-Hispanic Black, 2000	92.624 ***	14.739 *	-18.857
% Hispanic, 2000	95.357 ***	16.762 **	43.516 ***
% Renter, 2000	-119.277 ***	-0.453	11.843
Downtown TOD, 2000	-2.978	-0.964	21.084 ***
Non-downtown TOD, 2000	-6.507	-2.744	-23.961 ***
adjusted R squared	0.189	0.184	0.082
n	1,579	1,579	1,579
***<.01 **<.05 *<.10			
Source: 2000 Decennial Census, 2006-10 & 2009-13 5-year ACS, 2000 & 2013 HUD's Picture of Subsidized Households, CHPC			

Taking advantage of the unique datasets available for San Francisco, we ran linear regressions on the rates of evictions (both fault and no-fault) as well as condominium conversions at the finer geography of the Census block group. Data on condominium conversions, building renovation permits, and code violations were all derived from San Francisco departmental data (Planning, Buildings, and the Rent Control Board). *For these models, TOD neighborhoods are defined as Census block groups that intersect with a quarter-mile buffer of a rail-transit station*.

In Table 2E.7, we show that Hispanic neighborhoods were more likely to experience higher eviction rates than other neighborhoods, whereas Asian neighborhoods were less likely to experience fault evictions. Location near rail transit appears to increase fault evictions rates, but not no-fault rates. Condominium conversions, on the other hand, appear to be less likely to occur in minority neighborhoods, and the impact of TODs is not significant.

Table 2E.7: Evictions and Condominium Conversions, Linear Regressions, San Francisco*

	Fault Evictions Rate, '10-'15	No Fault Evictions Rate, '10-'15	All Evictions Rate, '10-'15	Condo Conversion Rate, 10-15
Intercept	0.018 ***	0.002	0.021 **	0.029 ***
Median Household Income, 2010	-1.8E-04	1.0E-03	8.3E-04	1.9E-03 ***
Income Squared, 2010	-2.9E-05	-4.5E-05	-7.4E-05	-8.5E-05 **
% non-Hispanic black, 2010	-0.006	-0.003	-0.009	-0.042 ***
% Asian, 2010	-0.014 ***	-0.002	-0.016 *	-0.058 ***
% Hispanic, 2010	0.027 ***	0.018 ***	0.045 ***	-0.009
TOD	0.004 **	0.001	0.005 *	-0.001
Adj. r-squared	0.071	0.001	0.043	0.287
n	576	576	576	578

**Note: This analysis differs from previous analyses in that TOD neighborhoods are defined as Census block groups, rather than Census tracts and we look at the quarter mile buffer around the rail station rather than half mile...*

2E.3. Loss of Low-income Households

Another approach to estimating displacement is to use the loss of low-income households as a proxy. For the Bay Area, we take this approach as another way to model displacement effects of TODs. Researchers have found that neighborhood composition in the United States is considerably stable (Wei and Knox 2014; Landis 2015). In fact, on average, Bay Area Census tracts' low-income population grew by 59 households between 2000 and 2013. Therefore, we may assume that any neighborhood that experienced a net loss of low-income households while stable in overall population is a result of displacement pressures. Although the change in low-income households could be due to income mobility (e.g., low-income households moving into middle- or upper-income categories, or vice versa), from our analysis of data from the Panel Study on Income Dynamics we estimate that the Great Recession would have caused a net increase in low-income households in most places. In Table 2E.8, we find that TODs outside of the three major cities had an increase in the likelihood of losing low-income households, which is consistent with the lower rates of low-income in-migration and higher rates of higher-income in-migration found in Section 2D. In TOD neighborhoods in the three major cities, we found an increase in the likelihood of gaining low-income households, which may be related to the growth in subsidized housing found in these neighborhoods (see table 2E.6).

Neighborhoods with a high proportion of renters were more likely to lose low-income households, whereas minority neighborhoods were more likely to gain. In an alternative scenario we consider characteristics related to the built environment such as the percent of housing units in prewar buildings, and find that neighborhoods with a high proportion of historic, pre-war housing stock were more likely to lose low-income households, whereas development of any kind, both market-rate and subsidized, predicted a gain in low-income households. Finally, neighborhoods that had a high proportion of housing stock in public housing were more likely to gain low-income households, whereas neighborhoods where low-income residents were living in naturally affordable rental units were more likely to lose low-income households.

Table 2E.8: Change of Low-Income Households, Linear Regressions (Bay Area)

	Change in Low Income Households, 2000-2013		Change in Low Income Households, 2000-2013 ALT	
Intercept	-33.829		96.519	***
Median Household Income (/10000), 2000	9.850	*		
Income Squared, 2000	-0.326	*		
% Asian, 2000	108.805	***		
% non-Hispanic Black, 2000	14.670			
% Hispanic, 2000	234.995	***		
% Renters, 2000	-74.772	***		
Donwtown TOD, 2000	17.886		48.539	***
Non-Downtown TOD, 2000	-44.087	***	-73.647	***
% of housing units prewar (<1950), 2000			-140.675	***
Employment Density (/1000), 2000			0.000	
% increase in property sales value per square foot, 1990-2000			-15.782	
% increase in rent paid, 1990-2000			-6.582	
New market rate units, 1990-2000			0.052	***
New subsidized units, 1990-2000			0.378	***
% of housing units in Public Housing, 2000			167.638	*
% of low income households paying less than 30% in rent in non-subsidized units, 2000			-67.788	**
Adj. r-squared	0.065		0.105	
n	1569		1524	

Section 2F: Modeling Neighborhood Change

Given the shortcomings of the data available to analyze mobility and displacement, we conducted a third set of analyses to look at changes in neighborhood composition by income classes, income inequality, racial/ethnic groups, racial diversity, and rent burden. First we present the findings for Los Angeles County, followed by those for the Bay Area.

2F.1. Neighborhood Change in Los Angeles County

Our analysis of neighborhood change is broken into two parts. We begin with a simple bivariate analysis, comparing the changes in neighborhood characteristics between TOD and non-TOD areas using the characteristics previously described pertaining to income, race, education, and tenure. TOD neighborhoods are grouped into two separate categories: TODs that are located in Downtown Los Angeles ("Downtown TOD") and TODs that are located elsewhere ("Other TODs").

Table 2F.1 reports the average (both mean and median) tract level changes for TOD and non-TOD areas. Our analysis looks specifically at the changes in: 1) population with less than a high school diploma; 2) population with a bachelor's degree or higher; 3) non-Hispanic white; 4) rent burden (paying 30 percent or more of income on rent); 5) low-income households (households with less than $10K); 6) high income-households (households with $125K or more); 7) median household income (adjusted to 2013 dollars); and 8) gross rent (adjusted to 2013 dollars). With the exception

of the change in median household income and gross rent (which are absolute changes), all changes represent percentage point change.

It is evident from the table that TOD tracts are changing more in the direction of gentrification than non-TOD areas. In terms of demographic and socioeconomic changes, TODs, on average, experienced greater increase in white, college-educated, and higher-income households. While the county overall experienced declines in median household income from 2000 to 2013 (-$3,460), largely a result of the recent recession, the impact on TOD areas was smaller. Surprisingly, Downtown TODs on average saw a gain in median household income during this period (+$1,405). Increases in gross rent are also higher in TOD tracts than non-TOD areas.

Table 2F.1: Changes in Neighborhood Characteristics, LA County, 2000-2013*

	Downtown TOD		***Other TOD***		***non-TOD***	
	Mean	Median	Mean	Median	Mean	Median
Δ Less than High School	-16.41	-16.6	-10.8	-10.27	-6.98	-5.59
Δ Bachelor's Degree or Higher	16.98	15.97	5.77	4.17	4.9	4.3
Δ non-Hispanic white	12.37	13.04	0.21	-0.1	-4.76	-3.56
Δ Rent Burden	8.29	7.37	12.7	13.36	11.64	12.55
Δ Low-Income Households (<10K)	-4.74	-0.42	-0.23	-0.01	1.00	0.89
Δ High Income Households (125K+)	3.85	3.25	-0.57	-0.99	-2.1	-2.06
Δ Gross Rent	$358.75	$247.98	$246.95	$226.39	$223.87	$233.34
Δ Median Household Income	$8,864.43	$1,405.51	$327.72	-$824.07	-$4,110.56	-$3,460.36
% Asian, 2000	35.08	32.23	10.7	7.03	13.01	8.21
% non-Hispanic black, 2000	15.02	8.57	14.62	6.82	8.92	3.45
% Hispanic, 2000	35.47	26.61	56.47	57.83	41.78	36.81
% Renter, 2000	92.87	93.66	70.78	72.99	48.46	48.9
n	12		367		1,884	

Data Source: 2000 Census, 2009-2013 5-year ACS

**With the exception of change in gross rent and median household income, all changes represent percentage point change. Values for gross rent and median household income are adjusted to 2013 dollars.*

While the patterns seem to be consistent with the literature on gentrification, we ran multivariate models to test whether the relative changes for TOD tracts hold after accounting for other neighborhood characteristics that can also influence change (Table 2F.2). The dependent variables (in column headings) include the change in: population with less than a high school diploma (LTHS), those with a bachelor's degree or higher (BA+), non-Hispanic white (NHW), rent burden, low-income households, high-income households, median household income, and gross rent. The control variables are the 2000 baseline data presented in each row.

Table 2F.2: Neighborhood Change Multivariate Regressions, LA County, 2000-2013*

	Δ LTHS	Δ BA+	Δ NHW	Δ Renter Burden	Δ Low-Income HHs (<10K)	Δ High Income HHs (125K+)	Δ Median HH Income	Δ Median Gross Rent
Constant	-5.544 ***	3.230 *	-19.657 ***	-4.181	2.129	2.938 *	6,007 *	266.135 ***
Median Household Income (/10,000)	1.212 ***	0.137	0.106	1.333 ***	0.366 **	-0.841 ***	-410.652	28.163 ***
Median Household Income Squared	-0.049 ***	-0.003	0.030 ***	-0.049 ***	-0.022 ***	0.016 **	-75.488 ***	-2.745 ***
% Asian	-0.034 ***	0.021 **	0.078 ***	0.024	-0.039 ***	0.001	-40.271 **	-1.875 ***
% NHBLK	-0.006	-0.036 ***	0.116 ***	0.055 ***	-0.024 ***	-0.038 ***	-88.725 ***	-1.246 ***
% Hispanic	-0.108 ***	-0.055 ***	0.087 ***	0.120 ***	-0.011 *	-0.044 ***	-95.379 ***	-1.240 ***
Downtown TOD	-4.975 ***	9.028 ***	11.312 ***	-3.361	-4.596 ***	1.591	7,703 **	166.895 ***
Other TOD	-0.440	0.897 **	1.422 ***	-1.186	-0.696 **	0.611 *	2,679 ***	17.775
% Renters	-0.023 **	0.045 ***	0.131 ***	0.057 ***	-0.008	0.017 **	0.671	0.184
Δ Gross Rent	-0.003 ***	0.005 ***	0.002 **	0.006 ***	-0.003 ***	0.004 ***	9.520 ***	
Adjusted R-Squared	0.359	0.133	0.258	0.071	0.055	0.144	0.279	0.156
n	2,224	2,224	2,224	2,224	2,224	2,224	2,224	2,224

***<.01 **<.05 *<10

Data Source: 2000 Census, 2009-2013 5-year ACS
**With the exception of change in gross rent and median household income, all other changes represent percentage point changes. Values for gross rent and median household income are in 2013 dollars.*

Not surprisingly, we find similar results to what was discussed in the previous sections. Relative to non-TOD areas, TOD tracts are changing more into the direction of gentrification. Focusing specifically on Downtown TOD and Other TOD, we see that relative to non-TOD areas, TOD neighborhoods are more likely to see a decline in people with less than a high school diploma (significant only for Downtown TOD) and low-income households. Conversely, TOD tracts are more likely to see an increase in the share of people with a bachelor's degree or higher, a gain in non-Hispanic white population, a gain in higher-income households (significant only for Other TOD neighborhoods), an increase in median household income, and a rise in gross rent relative to non-TOD areas. The multivariate results are consistent with the gentrification thesis, that is, TODs are associated with the a priori hypothesis of demographic and socioeconomic change.

We found no significance in terms of rent burden, although the negative coefficients do indicate that relative to non-TOD tracts, TOD neighborhoods are more likely to see a drop in burden households. One explanation for this could be the increase in higher-income households. In early gentrifying neighborhoods, rents are cheaper and, according to existing literature on gentrification, they often attract higher-income and educated young professionals. Hoping to take advantage of the cheaper rent (cheaper relative to their income), these newcomers might displace lower-income families who can no longer afford to live in the neighborhood. The low-income family's higher housing burden status is now replaced with the new higher-income households for whom the rent is not a burden (i.e., they pay less than 30% of their income on housing). Although declining rent burden is not proof of gentrification, it certainly is consistent with what is known about early stages of gentrification.

2F.2. Neighborhood Change in San Francisco Bay Area

Using similar datasets and procedures as in Los Angeles County, Table 2F.3 reports the average (both mean and median) tract-level changes for TOD and non-TOD areas for indicators in the San Francisco Bay Area. For rent burden, we only look at low-income households that are rent burdened, defined as households earning less than 80% of the county median income that spend more than 30% of their household income on rent. Because of the high variability in incomes across

the region, we define low-income households as those earning less than 80% of the county median income and high-income households as those earning more than 120% of the county median income.

It is evident from the table that TOD tracts in the Bay Area are changing more in the direction of gentrification than non-TOD areas. In terms of demographic and socioeconomic changes, TODs, on average, lost fewer non-Hispanic whites and adults with less than a high school education than non-TODs. In contrast, TODs experienced greater increases in college-educated and higher-income households. While the region overall experienced declines in median household income from 2000 to 2013, largely a result of the recent recession, the impact on TOD areas was about half as much as on non-TOD areas. While the patterns seem to be consistent with the literature on gentrification, we ran multivariate models to test whether the relative changes for TOD tracts hold after accounting for other neighborhood characteristics that can also influence change.

Table 2F.3: Changes in Neighborhood Characteristics, SF Bay Area, 2000-2013*

	Non-TOD		Downtown TOD		Non-Downtown TOD	
	Mean	Median	Mean	Medan	Mean	Median
Δ Less than High School	-3.40	-3.28	-6.29	-4.66	-3.23	-3.55
Δ Bachelor's Degree or Higher	5.29	4.72	8.02	7.14	5.84	5.54
Δ non-Hispanic white	-8.51	-8.09	-2.43	-2.64	-8.53	-9.11
Δ Rent Burden	-6.45	-8.02	-3.87	-5.39	-10.54	-11.71
Δ Low Income Households (<80% County median Income)	2.31	2.41	1.80	1.88	-0.02	-0.29
Δ High Income Households (>120% County Median Income)	0.02	-0.16	0.83	0.51	2.61	2.65
Δ Median Rent	$145.61	$170.95	$192.97	$194.15	$133.25	$144.82
Δ Median Household Income	-$6,688.40	-$6,946.20	-$1,986.81	-$4,124.38	-$2,460.94	-$3,033.15
% Asian, 2000	18.73	13.14	28.41	22.97	23.10	19.76
% non-Hispanic Black, 2000	7.97	3.00	12.05	4.83	7.03	3.12
% Hispanic, 2000	17.09	12.41	21.74	15.92	20.32	15.92
% Renter, 2000	35.32	31.90	56.80	59.65	47.99	46.04

Data Source: 2000 Census, 2009-2013 5-year ACS

**With the exception of change in gross rent and median household income, all other changes represent percentage point changes. Values for gross rent and median household income are in 2013 dollars.*

Focusing specifically on the one TOD variable for the Bay Area (Table 2F.4), we see that relative to non-TOD areas, TOD neighborhoods are more likely to see a decline in those with less than a high school diploma and low-income households. Conversely, TOD tracts are more likely to see an increase in the share of those with a bachelor's degree or higher, a gain in non-Hispanic white population, more higher-income households, and an increase in median household income and median gross rent relative to non-TOD areas. The multivariate results are consistent with the gentrification thesis, that is, TODs are associated with the a priori hypothesis of demographic and socioeconomic change.

Table 2F.4: Neighborhood Change Multivariate Regressions, SF Bay Area, 2000-2013*

	Δ Less than High School		Δ Bachelor Degree or Higher		Δ non-Hispanic White		Δ Rent Burden of Low Income Households		Δ Low income Households		Δ High Income Households		Δ Median Household Income		Δ Median Gross Rent	
Constant	-0.03		0.01		-0.14	***	0.01		-0.07	***	0.07	***	959.01		493.59	***
Median Household Income	0.00		0.00		0.00		-0.02	***	0.01	***	-0.01	***	-30.20		1.58	
Income Squared	0.00		0.00		0.00	**	0.00	***	0.00	***	0.00	***	-30.87		-2.15	***
% Asian	0.02		-0.01		0.02	***	0.08	***	0.08	***	-0.08	***	-11314.17	***	-204.25	***
% non-Hispanic black	-0.05	***	0.03	*	0.20	***	0.13	***	0.06	***	-0.08	***	-6834.32	*	110.26	*
% Hispanic	-0.02	*	-0.03	**	0.06	***	0.05		0.14	***	-0.11	***	-28243.65	***	-106.73	**
% Renters	-0.03	**	0.04	***	0.08	***	-0.08	**	-0.04	***	0.03	***	4813.04	**	-269.02	***
TOD	-0.01	**	0.02	***	0.01	***	0.00		-0.01	***	0.02	***	4416.09	***	26.48	*
Δ Median Gross Rent	-3.4E-05	***	4.09E-05	***	3.33E-05	***	4.28E-05	**	-5.5E-05	***	5.33E-05	***	11.00	***		
n	1,575		1,575		1,575		1,546		1,567		1,567		1,574		1,575	
Adj. R-Squared	0.0633		0.0414		0.1765		0.028		0.1436		0.1301		0.146		0.2109	

*** P<.01, ** p<.05, *p<.10

Data Source: 2000 Census, 2009-2013 5-year ACS

**With the exception of change in gross rent and median household income, all other changes represent percentage point changes. Values for gross rent and median household income are in 2013 dollars.*

Section 2G. Sensitivity Analyses

For Sections 2D, 2E, and 2F, we report the results for the regression models that are both conceptually sound and empirically reasonable. There are two different methods of comparing the model results for the sensitivity analyses. One is a pure statistical comparison. We look at the estimated parameters to see if they are statistically different from or similar to each other across models. This includes conducting a simple t-test of the coefficients. The second is a more qualitative comparison of the outcomes. For example, are the directions of the impacts in the same (e.g., positive coefficients in all models), and are they roughly of the same relative magnitude?

The sensitivity analyses to test the robustness and reliability of our models can be grouped into four broad categories: 1) alternative specifications; 2) alternative data construction; 3) identifying outliers; and 4) other types of robustness testing.

Alternative Specifications

This essentially consists of purposely running a number of alternative specifications to determine whether particular results are robust to a change in specification. For example, while we ran mostly ordinary least square regressions (OLS), we also explored other types of regression models. For the research task described in section 2D, we ran both OLS and seemingly unrelated regressions (SUR) to model neighborhood mobility. SUR accounts for possible correlation of the error terms across equations. We ran the model using both techniques and found them to produce similar results, which confirmed our original conclusion derived from the OLS model. Other modeling techniques employed include logit models, both binary and multinomial, which we used to model neighborhood displacement in Section 2E, and censored regression models, specifically Tobit models, which we used to deal with datasets with a high number of zero values. On the whole, they produced similar results.

In addition to the type of regressions adopted, we also made modifications to the method itself. For example, we had to decide whether or not to apply weights to the models. We acknowledge that

they generally do not produce the same results, but conceptually, we know that the greatest inaccuracies lie within tracts with very small numbers or sample sizes. These tracts often overly influence the regression results because they often have extreme values. By applying weights to the models, we could counteract this undue influence. Changes were also made to the sets of independent variables. This process involved using different types of independent variables by adding or swapping out individual variables that either have or do not have a major impact on the estimated equation.

Alternative Data Construction

Another sensitivity analysis employed includes the construction of the same variables using different types of methods or definitions. In the analysis presented in Section 2F, for example, we ran a series of linear regressions to measure housing affordability using different definitions of rent burden. The most widely accepted definition is that a household should spend no more than 30 percent of their income towards housing costs. As part of our sensitivity analysis, we also model households paying 35 percent or more. Additionally, we ran models to include, as the dependent variable, all households (both homeowners and renters), and separately, homeowners and renters who are paying at these different levels.

Another alternative data construction test involved varying our estimates of the number of residential units. While we relied on the assessor's parcel data for information about individual properties, the parcel data had incomplete information on the number of residential units in a given parcel, as noted earlier. For properties classified as "Five or More Units", for example, we estimated the number of units in the structure by dividing the property's square footage by 900 square feet, the average size for a multi-family unit in Los Angeles County. We compared our estimated numbers to those reported by DataQuick, the Bureau of Census's 2010 Decennial Census, and the 2009-2013 American Community Survey (ACS). DataQuick reports the number of units for each property but has some missing information, which is why we decided to develop a methodology to estimate the number of units for each individual parcel for Los Angeles. The Bureau of Census does not report the number of units at the individual parcel level but does report it at the Census block (contain in the Decennial Census) and at the block group level (contained in the ACS). We compared each of these data sources for the number units within the half-mile radius of a transit station. The results are displayed in Figure 2G.1, Estimated Number of Housing Units for LA County. Our estimated numbers of units are similar to those reported by the other two sources, which allows us to have some confidence in our developed methodology and data construction. However, we do see some discrepancy, particularly in the station areas with the greatest number of housing units. One reason may be temporal, that is inconsistencies in year for the various datasets. The County Assessor's parcel data are for 2012, DataQuick is for 2014, Census block data is for 2010, and the ACS data is the average for years 2009-2013. We also use an average size of a unit across all areas to estimate the number of units for a given parcel; however, certain neighborhoods may have homes with significantly greater or smaller area footprints.

Identifying and Addressing Outliers

Outliers can distort the regression results. When an outlier is included in the analysis, it pulls the regression line towards itself. This can result in a solution that is more accurate for the outlier, but less accurate for all of the other cases in the dataset. Prior to removing them, we first had to make the decision about what would be considered unreasonable outliers. First, those identified as being too extreme on either end were removed. We determined this by looking at the distribution of the variable. Next, we looked at how changing the parameters might affect the sample size and

regression results. For example, as described in Section 2F "Modeling Neighborhood Change", we ran our regressions using three different cutoffs to eliminate outliers. Table 2G.1 reports the results for Los Angeles and only includes the coefficients for the variables of interest – Downtown TOD and Other TOD – and the sample size for each. The patterns are fairly consistent, but the level of significance for specific variables and overall sample sizes changes when different parameters are applied. For example, by applying a higher cutoff, the coefficient for the change in less than high school education becomes significant for Downtown TOD, and we are able to get a larger sample size for the Downtown area.

Table 2G.1: Regression Results for Los Angeles County

Parameters		Δ LTHS	Δ BA+	Δ NHW	Δ Renter Burden	Δ Low-Income HH (<10K)	Δ High Income HH (<125K)	Δ Median HH Income	Sample Size w/ Cutoffs	Sample Size w/o Cutoffs
30 pp, 300% Change	Downtown TOD	-3.07	7.81 ***	9.57 ***	-3.81	-3.31 **	0.64	6,677.86 **	11	15
	Other TOD	-0.52	1.02 ***	1.46 ***	-0.96	-0.81 ***	0.65 *	2,842.51 ***	352	387
40 pp, 300% Change	Downtown TOD	-5.42 ***	10.17 ***	11.61 ***	-2.45	-5.16 ***	2.33	9,232.68 ***	12	15
	Other TOD	-0.47	1.04 ***	1.46 ***	-1.11	-0.76 **	0.69 **	2,854.13 ***	365	387
40 pp, 350% Change	Downtown TOD	-6.60 ***	12.19 ***	12.09 ***	-2.03	-8.36 ***	2.81 *	10,460.00 ***	13	15
	Other TOD	-0.46	1.04 ***	1.46 ***	-1.11	-0.74 **	0.69 **	2,848.70 ***	365	387

Percentage points (PP) difference for the following variables: LTHS, NHW, Rent Burden, and Low-Income HHs
Percent change for the following variables: Gross Rent (2013 dollars), and Median HH Income

*** P<.01, ** p<.05, *p<.10

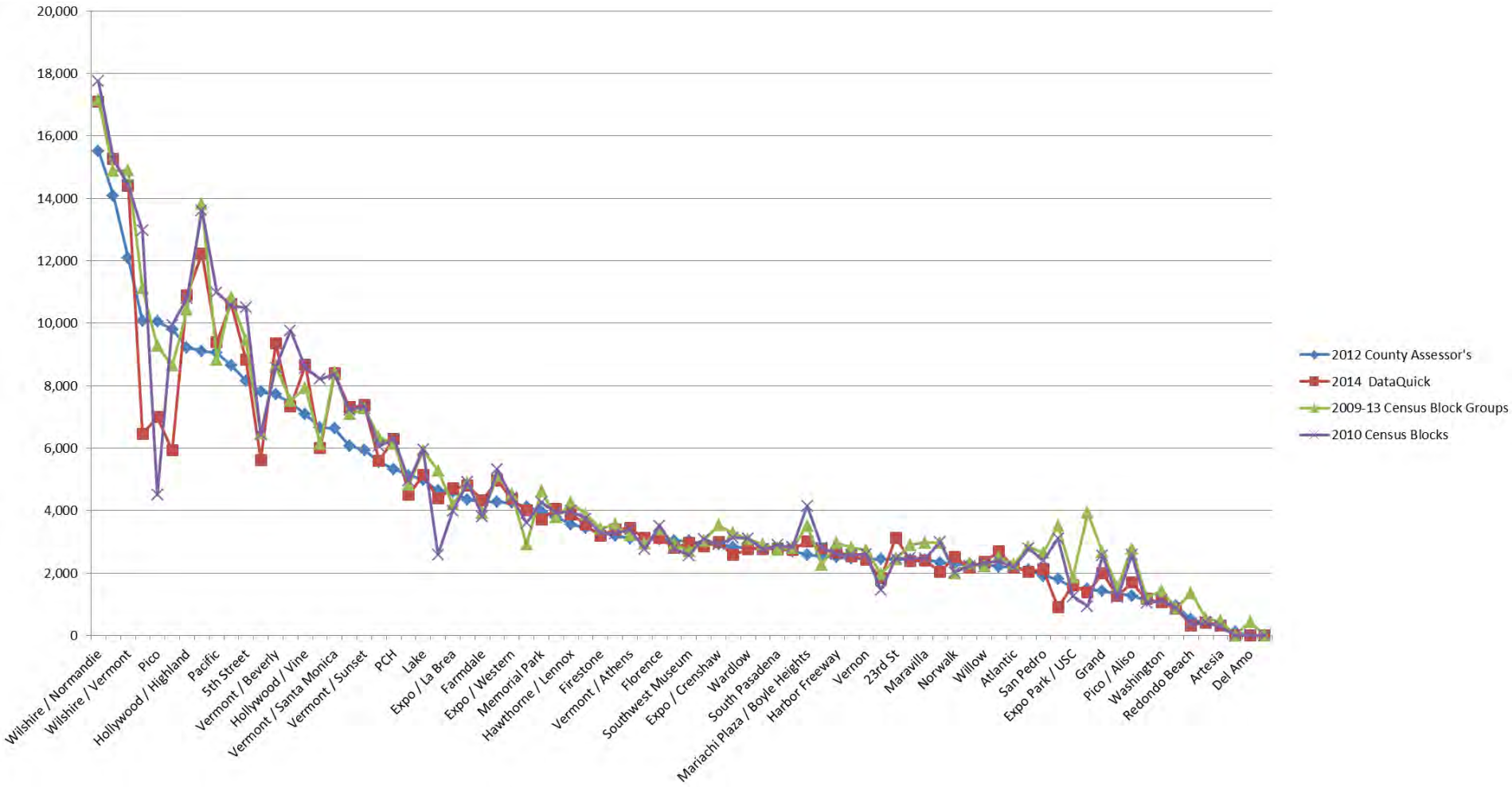

Figure 2G.1: Estimated Number of Housing Units for LA County

Section 2H: Ground-Truthing Secondary Data

The above analyses rely on secondary datasets (e.g. Census), some of which are derived from samples rather than full inventories of the population in question (e.g., people, housing units, jobs, etc.). Because of this as well as delays in data collection, reporting, etc., secondary data may not accurately depict what is currently observed on the ground. We conducted a ground-truthing exercises to assess the level of consistency between real-world observations and secondary datasets. Interviews and visual observation provide a way to verify secondary data. These methods also allow us to garner more firsthand knowledge about the processes at work in gentrification and displacement. We use these ground-truthing methods in three case studies in the SF Bay Area (East Palo Alto, Marin City, and the Mission District of San Francisco) and three case study neighborhoods in Los Angeles (Chinatown, 103rd St/Watts Tower, and Hollywood/Western).

We developed similar visual inspection tools for the two regions with some variation to account for regional differences. Both methodologies involve walking on sample blocks and, using a written checklist, noting signs of investment, disinvestment, and other features of each building on the street. For example, we note the number of units a building appears to have (by counting doorbells, mailboxes, electric boxes, and so on), the apparent use of the building (single-family, multi-family, commercial, and the like), whether the building is well-maintained (through indicators like whether it is recently painted), and how stable or transient the population appears (through indicators like whether curtains/drapes are permanent or temporary). These results are compared on a parcel-by-parcel basis to secondary parcel data, and on an aggregate block-by-block level to Census and other secondary data.

Besides this visual inspection, we also conducted interviews with stakeholders (primarily non-profit advocates) who are familiar with the history and ongoing patterns of change of the case study areas. In some cases, they accompanied us on our block-walking. This insider knowledge helped us to make sense of ambiguous visual indicators. These stakeholders also helped us "ground-truth" our overall understanding of how the area is changing.

2H.1. Bay Area Ground-Truthing

The ground-truthing exercise conducted on sample blocks in East Palo Alto, Marin City, and the Mission District of San Francisco showed us that, broadly speaking, secondary data and on-the-ground visual observation tell the same story of neighborhood change. We find, however, that there is greater divergence between the stories emerging from the secondary data analysis and the stakeholders' perceptions of change, than there is between the secondary data and the neighborhood observation.

This process reveals the relative strengths of different datasets: secondary data provides rich descriptions of demographic change, sales turnover, and changes in home values (based on assessed versus sales values). However, unlike secondary data, ground-truthing reveals perceived safety, levels of maintenance (a proxy for investment), and newer trends in investment and change not reflected in secondary data. Finally, stakeholder interviews reveal resident concerns and perceptions, historical context, and also trends too recent for secondary data to capture.

In general, the "broad" story of a block's change as told by primary data is about the same as that told by secondary data. Though there are some discrepancies in parcels' land use and numbers of units between the datasets, these are not significant enough to change the story.

In East Palo Alto, the datasets are generally aligned, and there is minimal variation among the blocks surveyed. However, stakeholders viewed the city as undergoing more displacement than our secondary data analysis indicated.

In Marin City, the same dynamic was at play: while our secondary data analysis would lead us to believe that the neighborhood was not losing low-income households, stakeholders are very concerned about gentrification and displacement. The visual observation generally aligned with secondary data here. A challenge to the methodology on one block was that almost all the homes were identical in design, upkeep, security signage, and more. Assessing the level of investment and perceiving any nuance here was difficult.

In the Mission District, the number of units per building varied considerably from the secondary datasets. The Mission has experienced significant condominium conversion and general turnover. This is a concern for modeling displacement in areas that are rapidly changing: the secondary datasets we often rely on miss a great deal of the changes happening especially in the recent past. This underscores the importance of stakeholder engagement and on-the-ground observation to ascertain the extent of development.

There is a range of accuracy in parcel data's land use and number of units (Table 2H.1). However, even with these discrepancies, the overall story from visual observation was the same as secondary data.

Table 2H.1: Comparisons of Secondary Data and Ground-truthing Data in Three Case Study Areas

Case	Land Use Match Percentages for Blocks	Unit Number Match Percentages for Blocks	Discrepancy in Total number of Units on Blocks
East Palo Alto	87% - 100%	94% - 100%	5-60 units
Marin City	74% - 97%	65% - 100%	1-28 units
Mission District	71% - 96%	32% - 44%	0-46 units

In Appendix J, we outline the basic methodology and the visual survey tools used, followed by a basic overview of each case study's history and recent changes, secondary and visual observation data for each case, and a comparison of the results of our quantitative models with stakeholder perceptions. Overall we find alignment between the secondary data analysis and the observations on the ground. Interviews, however, reveal perceptions of change or anticipation and anxiety about gentrification and displacement in response to more subtle observations on the ground and in surrounding neighborhoods.

2H.2. Los Angeles Ground-Truthing

There are 80 Metro rail stations in Los Angeles County. Metro also operates buses. Our analysis, however, focuses on three Metro station areas: Chinatown, Hollywood/Western, and 103rd St./Watts Towers. These areas were selected with input from our Southern California Advisory

Board, and each is on a different Metro rail line. Diversity of station-area conditions also influenced the selection of the three case studies, as each of the case studies represents a different typology, as described below.

(1) Chinatown is a mixed-use, ethnic neighborhood at risk of gentrification with few formal transit-specific planning efforts to mitigate the changes taking place;
(2) Hollywood/Western is a mixed-use, regional destination at risk of gentrification but mediated by formal planning efforts; and
(3) 103rd St./Watts Towers is a residential commuter neighborhood that is not gentrifying.

We focus on the area within a half-mile radius of each station. When possible, we present secondary data for the 80 stations as an aggregate group. Our analysis is done in two parts. Using results from field observations, Part I examines the validity of underlying Census and assessor data that was used to model gentrification and displacement as described in Section 2E. Part II compares the results of models in 2E with information gathered from interviews with community-based organizations (CBOs) and public agencies.

Part I: Assessment of Data Ground-Truthing in Los Angeles

The team selected parcels for observation based on land use and recent sale transactions or activity requiring a permit. A total of 123 residential and commercial parcels were observed in the three case study areas (See Table 2H.2). Detailed description of the methodology can be found in Appendix L.

Table 2H.2: Count of Parcels and Blocks Surveyed in Specific Los Angeles Neighborhoods

	Chinatown	Hollywood/Western	103rd/Watts
Total Parcels	26	48	49
Residential	19	46	46
Commercial	7	2	3
Total Block Segments	21	20	31

Source: Tabulated by authors from observational data collected between March and August 2015.

Model Results for All Three Case Studies in Los Angeles

Figure 2H.1 presents the results of our gentrification model at the Census tract level from 1990 to 2013. Tracts were classified as either eligible or not eligible for gentrification based on population size and indicators of vulnerability (income, educational attainment, rentership rate and rent costs, race). The eligible tracts where then classified into one of four categories: (1) experiencing gentrification between 1990 and 2000; (2) experiencing gentrification between 2000 and 2013; (3) experiencing gentrification in both decades (1990-2000, and 2000-2013); or (4) eligible (disadvantaged communities) but not gentrifying. For more information on the model and tract classification, see Section 2E.

As shown in Figure 2H.1, the 103rd St./Watts area is "eligible" for gentrification as defined in section 2E.1. However, while the area is a disadvantaged community, not much development has occurred. For Chinatown and Hollywood/Western, our model indicates that the areas have undergone significant changes in the past decade. Most of the change in Chinatown can be seen along the

outskirts of the half-mile buffer. On the other hand, change in the Hollywood/Western TOD area has occurred in close proximity to the transit station.

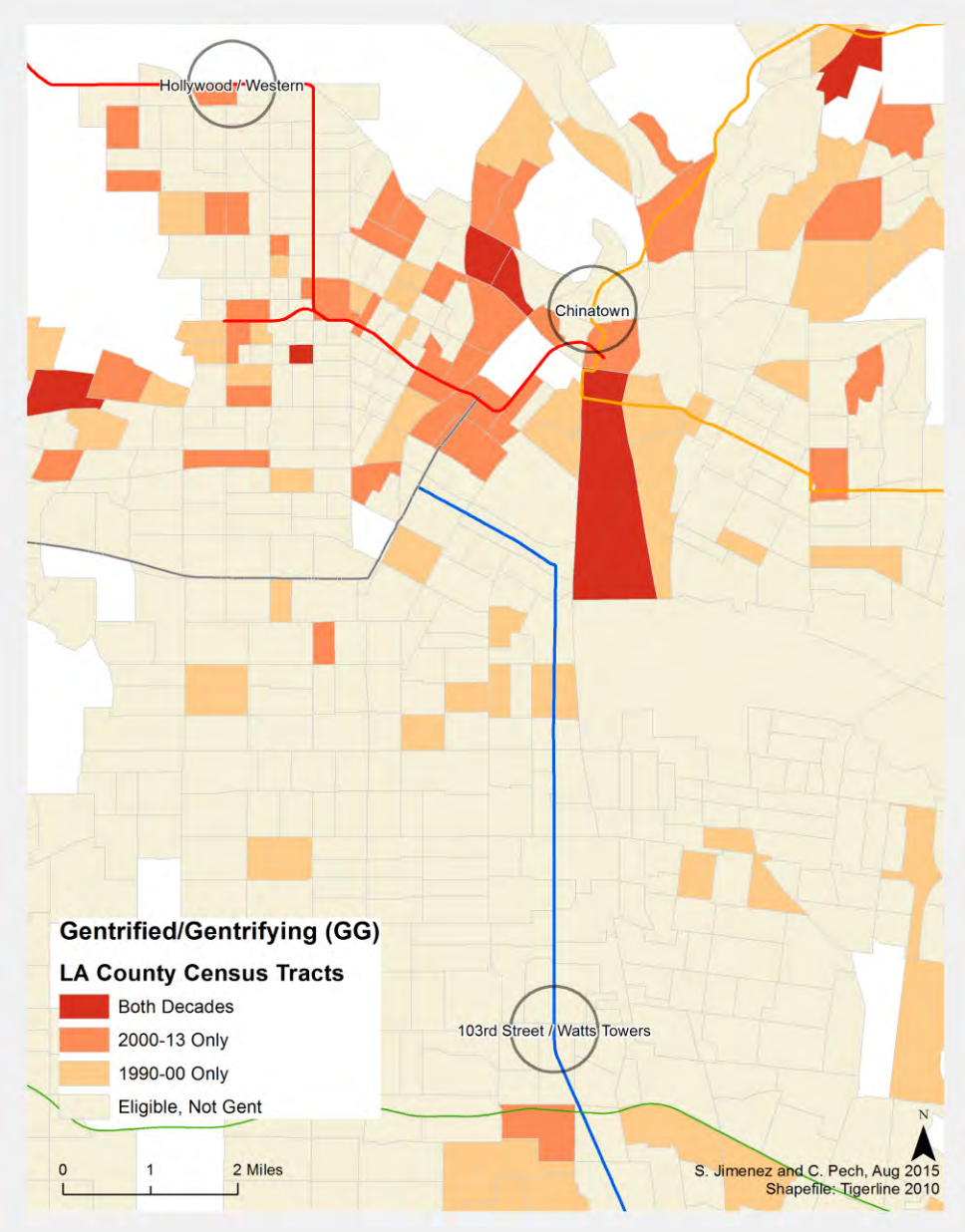

Figure 2H.1: ***Gentrifying and Gentrified Census Tracts, Los Angeles County, 1990-2013***

Assessment Results

Table 2H.3 ranks the three case studies along four composite indicators of neighborhood change: 1. sociodemographic changes, 2. job changes, 3. physical signs of residential change, and 4. physical signs of commercial change. The ranking allows us to compare the results of the gentrification model to what is happening on the ground. For the most part, we find moderate consistency when comparing the secondary data, field observations, and model results, particularly in areas where there is little development.

The sociodemographic indicators are derived from readily available Census data used in the model discussed in Section 2E. They measure greater-than-expected change (or z-score)[3] in each case study area relative to all TOD areas in Los Angeles County.[4] The higher and more positive the z-score for an individual station, the higher the signs of gentrification. Three variables are used for this indicator: average household income, average rent, and number of non-Hispanic whites. For each station, we examined the change for each variable from 1990 to 2013. Greater changes in income, rent, and number of non-Hispanic whites correlate with more signs of development.

Table 2H.3: Comparison of Indicators of Neighborhood Change in Los Angeles Case Studies

Station	Rank (from most change to least)			
	Δ Sociodemographic	Δ Jobs	Δ Residential	Δ Commercial
Chinatown	1	3	2	2
Hollywood/Western	2	2	1	1
103rd St/Watts Towers	3	1	3	3

Source: Tabulated by authors from 1990 decennial Census data and 2013 ACS; LEHD 2002-2012; and observational data collected in March and June, 2015.

For Chinatown, the z-score total is -0.247, while for Hollywood/Western it is -0.437 and for 103rd St./Watts Towers -0.561.The negative scores indicate that the three case study areas are gentrifying less than all TODs as a whole, with the Watts station showing the least indication of gentrification of the study areas.

We use job growth to measure changes in economic activity and commercial gentrification.[5] Chinatown had a 12.3% increase in jobs from 2002-2012, Hollywood/Western a 115.1% increase, and 103rd St./Watts a 194.4% increase. While Watts ranks first, its base is the lowest of the case study areas, having started in 2002 with only 484 jobs. In absolute numbers, Watts and Chinatown

[3] A z-score is essentially a standardized score that indicates how many standard deviations an observation or a data point is from the mean.

[4] To compare a specific station's change in each variable relative to all TOD stations, we compute a z-score for each of the three variables (income, rent, and race) to see how much it deviates from the average of all stations. This z-score is calculated by taking the specific station's change (in household income, for example), subtracting it by the mean change for all TOD stations, and dividing it by the standard deviation of change for all TOD stations. After finding the z-score for each of income, rent, and race, we add these z-scores to create a composite z-score.

Where

$$zscore\ composite = zinc + zrent + zrace$$

$$zinc = \frac{\Delta income for specific station - mean \Delta income of all TOD stations}{standard deviation in \Delta income of all TOD stations}$$

$$zrent = \frac{\Delta rent for specific station - mean \Delta rent of all TOD stations}{standard deviation in \Delta rent of all TOD stations}$$

$$zrace = \frac{\Delta nhw * for specific station - mean \Delta nhw for all TOD stations}{standard deviation in \Delta nhw for all TOD stations}$$

*nhw = non-Hispanic whites

[5] The percent change in jobs is from the 2002 – 2012 Longitudinal Employer-Household Dynamics (LEHD) survey for "all jobs" in blocks within ½ mile of the TOD station.

experienced similar growth in jobs while the increase in Hollywood/Western was more than four times that of the other two areas (an increase of 941,995, and 4,292 jobs, respectively).

The data on residential and commercial gentrification is based on observed signs of "upscaling" and physical signs of gentrification collected as part of ground-truthing.[6] Upscaling includes extensive renovations, changes in building characteristics, as well as a building appearance that looks more "upscale" and dissimilar to the surrounding parcels. Ground-truthing observations indicate that Hollywood/Western has undergone the most residential and commercial upscaling, followed by Chinatown, with 103rdSt./Watts last.

For the most part, we find moderate consistency amongst the four indicators, particularly in areas where there is little development. However, there are mixed results in areas undergoing development. For example, while the observations rank Hollywood/Western as having the most physical changes, Chinatown has experienced the greatest sociodemographic shift.

Assessed land-use vs. observed (at parcel level)

Land use designations between assessor data and ground-truth observations are for the most part consistent: about a 90% match for residential uses (See Table 2H.4). Chinatown had the highest consistency at 95%. The only large discrepancy is in the single-family units in the Hollywood/Western TOD area.[7]

One limitation of the land-use comparison is that it is not possible to visually distinguish whether a unit is a condo or part of a larger apartment complex. Additionally, commercial parcel matches were not noted because commercial properties comprised less than 10% of the surveyed parcels.

Table 2H.4: Percent land use matched in Los Angeles Case Study Areas

	Chinatown	**Hollywood/Western**	**103rd St/Watts Towers**
Single Family	89%	50%	100%
Condo	100%	100%	None surveyed
Multi-family	100%	88%	95%
Total Residential	95%	93%	89%

Source: Tabulated by authors from County Assessor's data; and observations collected in March and June, 2015.

Local Roll Housing Unit Counts vs. Census Counts

We compare housing units estimated from the County Assessor's data (See Appendix L for methodology) with the total housing units reported in the 2009-2013 five-year ACS. We focused on parcels with a residential land-use for this comparison.

[6] For residential, we used questions 4, 6, and 7 from survey instruments (shown in Appendix M). For commercial, we used questions 5, 7, and 8.

[7] As part of the 2015 UCLA Master's in Urban and Regional Planning Capstone project, observations in three other case studies also took place. Of the 193 total residential parcels surveyed in all 6 areas, 165 of the parcels (or about 85%) matched with the assessor data. See Appendix J.

Table 2H.5 shows some differences in housing units between assessor and Census data. The difference between the two datasets in Chinatown is about 600 units. For 103rd St./Watts, the difference is about 400 housing units. The greatest discrepancy appears in the housing unit counts between the datasets for Hollywood/Western. The Census estimates more than 2,000 units more than the assessor data does.

Table 2H.5: Estimated Housing Units from Assessor and Census Data in Los Angeles Study Areas

	Assessor Data					ACS 2009-2013 Data	
	Total Parcels	Total Residential Parcels	Total SF Parcels	Total Other Residential	Estimated Residential Units	Total Housing Units	Total Households
Chinatown	1,498	644	139	505	2,337	2,965	2,700
Hollywood / Western	1,515	1,262	591	671	8,656	10,818	9,937
103rd St / Watts Towers	2,129	1,946	1,468	478	2,828	3,269	2,894
Total	5,142	3,852	2,198	1,654	13,821	17,052	15,531

Source: Tabulated by authors from ACS 2009 – 2013 and County Assessor's data

Reported Recent Major Improvements vs. Observed Major Investments

A "major improvement" in our field observations was defined as an improvement where extensive renovation was apparent, which would have likely required a building permit; for instance, a structural improvement.[8] Reported improvements are those reported to the County Assessor.[9] We focused on residential parcels for the comparison.

Table 2H.6 shows that the percent of major improvements is similar to each other in the two datasets. For Chinatown and 103rd St./Watts Towers, the percentages only differ by about 1%. The greater discrepancy is for Hollywood/Western, where the observations found only about 2% (51 parcels out of 591) with major improvements while the assessor data indicates about 9%.

Table 2H.6: Percent of Major improvements for Observed and Assessor Parcels In Los Angeles Study Areas

	Observed Parcels	Assessor Data for All Parcels in Area	
	% with Major Improvements	% Reported Improvements [2007 - 2012]	Median Improvement Value, 2013$
Chinatown	0.0%	1%	$64,291
Hollywood / Western	2.2%	9%	$238,742
103rd Street / Watts Towers	2.2%	3%	$93,398

Source: Tabulated by authors from County Assessor's data; and observations collected in March and June, 2015.
Note: Data are for single family parcels

[8] For our observations, this refers to Question 6 on the Residential Parcel Observations form (See Appendix M for instrument). Percentages for % major improvements for each study area were calculated by taking the total numbers of parcels marked with "extensive" recent renovations and dividing it by the total number of observed parcels.

[9] Extensive rehabilitation work may involve "substantial changes to the plumbing system, electrical system, framing, or foundation and can extend the usable life of a building." Only when a building becomes "substantially equivalent to new" does it become categorized as new construction. See http://assessor.lacounty.gov/bwl-faq/.

Reported Recent Constructions vs. Observed Construction (at parcel level)

Table 2H.7 shows the match between reported and observed construction for single-family parcels.[10] Within both datasets, there is consistency in the Hollywood/Western station, whereby there is no reported or observed new constructions for single-family homes. There appears to be a larger inconsistency in Chinatown (31.6% observed new construction compared to 4% in secondary data), but this inconsistency is likely due to the methodology of selecting areas with above-average transaction activity. More importantly, we looked at matches between our observed data and the assessor data in terms of new construction. Of the parcels that we selected to observe, all that were marked as having new construction were also reported similarly in the assessor data.

Table 2H.7: Percent of Constructions for Observed and Assessor Parcels in Los Angeles Study Areas

	Observed Parcels	Assessor Data for All SFH Parcels in Area	
	%New SF Construction	% Reported New SF Construction	Observed vs. Reported Match
Chinatown	31.6%	4%	100%
Hollywood / Western	0.0%	0%	100%
103rd Street / Watts Towers	13.0%	5%	100%

Source: Tabulated by authors from County Assessor's data; and observations collected in March and June, 2015.

Part II: Comparison of Model, Street and Observations, and Interviews

Research on neighborhood change often relies on quantitative demographic and real estate data to evaluate trends and the trajectory of neighborhoods. However, subtle changes that may point to gentrification are rarely captured by quantitative data. Often times, it is the local community-based organizations and groups that notice the small changes that are difficult to quantify and track. The following compares the results of the models described in Section 2E with information gathered through street observations as well as interviews with representatives from CBOs and public agencies.

Overview of Street Observation Method

A similar method of ground-truthing as the one reported in Part I was also employed to observe physical changes of gentrification at the Census block/street segment level. We selected Census blocks that were directly adjacent to (or within a quarter-mile radius of) the rail station regardless of their land use. We also chose blocks within a half- mile radius that had above-average transaction activity even if these were not directly adjacent to the rail station. The boundaries for most Census blocks coincided with street block segments. A total of 72 block segments were observed in the

[10] New constructions are defined for the assessor data as any new structures; area added to existing structures; new items added to an existing structure such as bathroom or fireplace; physical changes that result in a change in use; "rehabilitation, renovation, or modernization that converts an improvement to the substantial equivalent of a new improvement"; or land development. See assessor.co.la.ca.us/extranet/list/faqFull.aspx. The percentage of new construction is calculated by taking the number of reported single family home constructions and dividing it by the total number of observed parcels for each station. New constructions are based on Question 1 (if "new constructed") and Question 5 (if "new construction") from the Residential ground-truthing form (See Appendix M). For the percent of reported new construction based off of assessor data, we take the number of reported of single family new constructions & divide it by the total number of single family parcels for each station.

three case study neighborhoods. Detailed description of the methodology can be found in Appendix L.

A semi-structured interview approach was used to guide a series of interviews with representatives of various CBOs and public agencies. Organizations and agencies were selected because of their location and activity in a study area or their previous experience with other aspects of TODs in Los Angeles. We identified and contacted planners, elected officials, and CBO staff. More information on the interview protocol can be found in Appendix N and detailed results comparing the street observation method with interviews and secondary data analysis can be found in Appendix O.

Los Angeles Ground-Truthing Conclusions

In general, we found a higher consistency among data sources in areas that have not experienced major changes such as in 103rd St./Watts Towers, and a lower consistency in areas experiencing more changes such as in Hollywood/Western.

This assessment indicated that the quantitative models reported in other sections of this report do not capture all the complexities and nuances of neighborhood change. At the same time, the quantitative models do identify factors and patterns that cannot be observed through primary fieldwork. Researchers and analysts should not assume, however, that secondary data are precise. Ideally, secondary data should be carefully evaluated for anomalies and other problems (e.g., discrepancies in housing unit counts) before being incorporated into models.

There are clear discrepancies in indicators and beliefs about the nature and extent of neighborhood change. This can be due in part to differences in the sources of information. Those on the ground may see patterns not captured by secondary data. Data from observations and interviews are also subjective and may reflect some of the biases, priorities, and broader concerns of the observer, interviewer, and interviewees. For all the above reasons, the utilization of multiple data sources that involve both secondary data as well as empirical work such as direct field observations and stakeholder interviews complement each other and give a more complete picture of neighborhood change.

Chapter 2 Conclusions

This chapter developed a series of analyses that examine gentrification and displacement in fixed-rail transit neighborhoods. Gentrification in Los Angeles and the Bay Area TODs cannot be attributed to new residential development, as the vast majority of transit neighborhoods in both Los Angeles and the Bay Area experienced relatively little residential development from 2000 to 2013. In the Bay Area, over half of market rate residential development occurred in tracts that did not gentrify.

Analyzing household moves into and out of neighborhoods, we find that transit neighborhoods in Los Angeles have higher rates of high income in-movers and lower rates of low income in-movers, consistent with previous findings on the relationship between proximity to transit and higher housing prices. A similar relationship is found when analyzing the education level of in-movers to transit neighborhoods in the Bay Area, who are more likely to have a bachelor's degree or higher and less likely to have less than a high school diploma. Yet, in the Bay Area, people in poverty were more likely to move into transit neighborhoods in the core cities (San Francisco, Oakland, and San Jose), but not in other cities. For Los Angeles, in-movers to transit neighborhoods were more likely

to be non-Hispanic white, which is only true in the Bay Area for transit neighborhoods located in the core cities.

Our models of neighborhood gentrification suggest that proximity to transit matters in both regions, but effects vary across time periods. In Los Angeles, proximity to transit is most clearly associated with gentrification in Downtown, and proximity to recently opened transit stations seems to have the most significant effect. The Bay Area results also indicate that proximity to fixed rail transit stations has a significant impact on gentrification.

When we look at less aggregate demographic measures and zoom in specifically on affordable housing, we find a much stronger effect of proximity to rail transit. For Los Angeles we find that proximity to rail transit significantly predicts a loss of affordable rental units and an increase in condominium conversions. For the downtown rail transit neighborhoods, we also find a significant increase in Ellis Act evictions and for transit neighborhoods outside of the downtown we find a significant decline in Section 8 vouchers. There was, however, an increase in subsidized units using the Low-Income Housing Tax Credit (LIHTC) program for transit neighborhoods both in and outside of Downtown Los Angeles. For the Bay Area, the impact of rail transit neighborhoods was not significant for the change in affordable rental units and Section 8 vouchers. Similar to Los Angeles, however, rail transit neighborhoods were more likely to increase the number of LIHTC units in the Bay Area's core cities, but less likely in other Bay Area cities. Rail transit neighborhoods outside of the core cities were more likely to lose low-income households. In San Francisco, proximity to rail transit was positively related to increased eviction rates.

Another set of analyses looks at changes in neighborhood composition by income classes, racial/ethnic groups, and rent burden. Confirming the analysis of gentrification, the results for both Los Angeles and the Bay Area showed a decline in the share of low-income residents and residents with a bachelor's degree were higher in transit neighborhoods.

To verify the secondary data analyzed in our models and to learn more about the process of change, we used visual observation in the field as well as in-depth interviews with key informants. The findings of the field observations were generally consistent with the secondary data, except that there was often a discrepancy between the number of housing units found in the County Assessor's database and those observed in the field. Often, local observers pointed to displacement processes currently underway that are not reflected in the secondary data. At the same time, interviews occasionally suggested a level of anxiety about displacement that is not supported by empirical data.

Chapter 3: Developing Tools for Analyzing Potential Displacement Impacts in Sustainable Community Strategies (SCS)

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Acronyms Used in This Chapter

- AA (Activity Allocation)
- ABAG (Association of Bay Area Governments)
- ACS (American Community Survey, U.S. Census)
- ARB (California Air Resources Board)
- AMI (Area Median Income)
- BMR (Below Market Rate)
- CSA (Community Statistical Area)
- FAR (Floor Area Ratio)
- ED (Economic/Demographic)
- EIR (Environment Impact Report)
- GIS (Geographic Information System)
- GHG (Greenhouse Gas)
- HCD (California Department of Housing and Community Development)
- HUD U.S. Department of Housing and Urban Development)
- LIHTC (Low-Income Housing Tax Credit)
- MNL (Multinomial Logit)
- MPO (Metropolitan Planning Organization)
- MTC (Metropolitan Transportation Commission)
- NPH (Non-Profit Housing Association of Northern California)
- PECAS (Production Exchange Consumption Allocation System)
- PUMS (Public Use Microdata Sample, U.S. Census)
- RHNA (Regional Housing Needs Allocation)
- ROI (Return on Investment)
- RTP (Regional Transportation Plan)
- SCAG (Southern California Association of Governments)
- SCS (Sustainable Communities Strategy)
- SD (Space Development)
- TAZ (Transportation Analysis Zone)
- TOD (Transit-Oriented Development)
- TR (Transportation)
- VMT (Vehicle Miles Traveled)

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Chapter 3 Introduction

In Chapter 3, we first present our analysis on what we believe are requirements for regional models to represent displacement, and we use this information along with findings presented in previous chapters to evaluate the suitability of the integrated land use and transportation models used by the metropolitan planning organizations (MPOs) in the Bay Area (the Metropolitan Transportation Commission, MTC) and Los Angeles (the Southern California Association of Governments, SCAG) to address displacement. To adapt the urban simulation model used in the Bay Area—UrbanSim—researchers analyzed the role of race, income, household size, rent, and rent burden on household location decisions and made adjustments to it. Researchers are working with MTC to integrate these modifications into their modeling for the next sustainable communities strategy (SCS). After analyzing how the integrated land use and transportation model used in Los Angeles—PECAS—could analyze displacement, researchers concluded that the current version is not capable of analyzing displacement issues at the desired level of detail.

In an effort to provide more streamlined and less resource-intensive modeling options, we present several different approaches to an off-model displacement assessment methodology. The off-model approaches build on the modeling results found in Chapter 2. All of the models are able to predict gentrification with results ranging from 50% to 86% accuracy.

Effects of Transit Investments and Upzoning on Prices and Rents

There is growing concern that there may be unwanted side effects of well-intentioned planning efforts to intensify development around transit stations, often referred to as transit-oriented development (TOD). The added transit accessibility from new stations, lines, and improved levels-of-service represents a local amenity that is of value to households and firms that are able to locate in close proximity to those amenities. In fact, accessibility is one of the primary influences on land values, and consequently on housing prices and rents, as well as on rents and prices of non-residential buildings.

The reason accessibility translates to higher property values is that amenities such as accessibility translate to higher willingness-to-pay for locations with such amenities. In short, increased transit accessibility increases demand for locations whose accessibility has increased as a result of public investment, and this increased demand is capitalized into land and property values. This is both intuitively obvious, and backed by a large empirical and theoretical literature.

If the real estate market were able to respond to increases in demand for those locations with new construction, one might expect that it could offset this increase in demand, pushing prices downward at least partially. Several factors tend to prevent that from happening. First, local governments may not zone for high enough intensity of development to enable developers to profitably build sufficient new housing and non-residential space to offset the demand effect. This is often due to community resistance to increased density, which pressures the municipality to keep zoning constrained considerably, compared to what the market would support in high-demand locations.

A further consideration on the supply side of the market is that higher-density development, at certain thresholds, increases construction cost substantially. Once developers move from a frame-on-podium construction appropriate for low-rise construction of two to three stories to higher

densities, it may precipitate numerous changes in construction technology, such as structure parking, steel frame construction, and elevators, all of which increase costs considerably. The end result is that, in order to realize sufficient profit to attract investment capital for construction loans, developers have to target a higher price segment of consumers, by moving to higher-quality materials and amenities. The result of these changes can be reasonably expected to put upward pressure on prices and rents.

A third factor that can contribute to both a diminished supply response to increased demand is that any upzoning done by the local jurisdiction to enable higher-density development might in fact drive up development costs for developers by increasing the reservation prices of current property owners. This arises because the zoning on each parcel confers an entitlement to the property owner to develop the parcel up to the limits imposed by the zoning. When the city upzones selected parcels around transit, the current property owners essentially receive a windfall of increased entitlement value. Assuming that these property owners are aware of this change in zoning, they are likely to demand a higher price for their property when a developer seeks to acquire it for development, since they fully appreciate that the developer could build to a higher intensity based on the change in zoning. Some jurisdictions have implemented value capture or community benefits policies to attempt to redirect some of this entitlement windfall from the public investment in transit towards public objectives. But most jurisdictions have not implemented such policies, which means that the full entitlement value gain is transferred to current property owners and translates to a higher cost for developers in these locations.

Effects of Increased Prices and Rents on Displacement

Through a combination of increased demand, constrained supply, and increased development costs, it is not unreasonable to anticipate upward pressure on prices and rents associated with transit investments and localized upzoning intended to stimulate TOD around these investments. The next issue to consider is how these pressures translate to risks of displacement and a consideration of who is at risk of such displacement.

The first, essential distinction to consider when considering the issue of displacement is how households in different circumstances might be affected. Households fortunate enough to own property, whether still paying a mortgage or owning it in full, will derive a windfall benefit of increased property values. Equity in housing is one of the main sources of wealth accumulation by households, notwithstanding the devastating effects of the global housing recession that began in 2007 and the large number of foreclosures that ensued. Still, on the whole, any amenity value that is generated by public investments such as transit, or any increases in entitlement value generated by increases in zoned development capacity, translate to increases in equity value for current property owners. As a result, the current project does not need to be concerned about any harmful effects of transit investments on the current property owners in those locations receiving additional transit service, or being upzoned to increase denser development.

These price pressures raise concerns about the potential impacts on renter households. For these households, price pressure could result in increased rents and therefore increases in the rental cost burden or potential eviction if building owners decide to convert apartments to condominiums. We would refer to these two circumstances as involuntary displacement, though the term involuntary might be subject to interpretation in the event that a household's rent increases to the point of being intolerable, and they "voluntarily" decide to relocate to a lower-cost location. We still consider this to be a hardship, and relevant to consider, so will use the term involuntary to include

those who would have preferred to stay, but either were evicted or chose to move out due to an excessive cost burden.

Another relevant population who could be harmed are low-income renters who might be able to consider moving into these locations before the transit investment or upzoning, but whose income constraints prevent them from locating there once rents increase. We could refer to this circumstance as exclusionary displacement. It is more nuanced, in the sense that we cannot directly observe which households would have considered specific neighborhoods before and after a change in rents. Nevertheless, the combination of exclusionary and involuntary displacement could combine to rapidly change the composition of transit-oriented neighborhoods toward the elimination of low-income households.

Requirements for Regional Models to Represent Displacement

Models used by MPOs were initially designed almost exclusively to address the evaluation of alternative packages of transportation projects, in order to develop a regional transportation plan (RTP) under assumptions that land use patterns should be considered as fixed, exogenous inputs. Later, these models evolved to evaluate the of potential induced demand effects that could arise from transportation projects influencing real estate markets — increasing demand for locations advantaged by increased accessibility, and increased supply in response to the demand and price effects, and subsequent increases in household and firm travel resulting from new development and new household and firm locations. UrbanSim is one of the model innovations that emerged to address this induced demand effect (Waddell 2011).

Concerns about housing affordability have only recently begun to intersect the regional transportation planning process. In particular, SB375 is one of the first legal tools to require coordination of the regional housing needs allocation (RNHA) process with the transportation and land use plans in the SCS planning process. The current project extends the consideration of housing affordability to more directly address the question of displacement associated with transit investments.

From the foregoing discussion, several requirements can be identified for making regional models responsive to displacement-related concerns.

Representation of Renter and Owner Markets Separately

As discussed above, displacement is a concern for low-income households who rent, rather than own, their homes. While homeowners receive a windfall from increasing property values, renters receive a higher rent bill, or worse, an eviction notice. Regional land use models have often used a simplification of the housing market to generalize over, or abstract away, this difference between renter and owner housing markets, often relying on a rule-of-thumb "cap rate" (capitalization rate) conversion between rents and prices, to enable a representation in the models of only one tenure type. For purposes of analyzing displacement risks, it is a fundamental requirement that rental and owner markets be treated separately. Without this distinction, it would be meaningless to attempt to discuss impacts of any market or policy change on displacement.

So the first and most essential requirement for regional models is to represent the housing stock as two fundamental market types: rental and owner. Building types, such as multi-family and single-family, townhouse, duplex, and the like, are useful in understanding the market, but do not

substitute for the tenure distinction. Single-family houses can be in the rental or the owner market, and the outcomes will be very different for the occupants when prices and rents increase.

Representation of the Influence of Rent Burdens on Moving Out

A second fundamental requirement for these models to be useful for analyzing displacement is the representation of the cost burden for renters in a model component reflecting the probability that a household will move out of their current unit. As already mentioned, this is less relevant for owner-occupants since they generally acquire a mortgage to finance their home purchase, thus payments are not influenced by market pressures on prices.

Some land use models do not attempt to represent the probability that a household will move. These models do not represent the way cities evolve over time through annual changes in the movement of households and firms and the construction of new buildings.. While a static equilibrium approach like that used in PECAS is plausible for some kinds of questions, it is not particularly well-suited to address dynamic questions such as how transit investments and upzoning might conspire to increase rents, and induce low-income renters to move out. Representing the renter market as a distinct market is a prerequisite, as is a representation of the decision to move out during a specific time frame such as over the following year.

Representation of the Influence of Rent Burdens on Moving In

A third requirement relates to the rent burdens of households who might be able to consider a neighborhood prior to increased transit services or upzoning, but are unable to afford the location after such changes. This is the exclusionary displacement circumstance.

This is a challenging issue to address since it requires making assumptions about how binding budget constraints are in households' choices of a residence. As we explore in a subsequent section, the empirical data on rent burdens suggests that this is not as simple as assuming that housing units above a specific rent burden would never be an option for locating households, since in fact, we observe large numbers of low-income households in units that impose an extremely high cost-burden.

Representation of Parcel-Level Demand and Supply

TOD involves increasing the zoning capacity for higher-density and often more mixed-use development in locations within close proximity (usually walking distance, e.g., one-quarter to one-half mile), of transit stations. The zoning changes are generally implemented in a special area plan that applies upzoning on a parcel-by-parcel level of detail, based on proximity and connectivity to the transit station. Models cannot capture the effects of these policies if they are not working at a parcel level of detail to represent, in a consistent way, both the demand side and the supply side of the models.

Some modeling approaches abstract the demand side considerably and use very large zones or districts, much larger than walking scale, to simulate market demand. They may or may not represent the supply side of the model at a parcel level or at a more aggregate level, but often encounter internal inconsistencies if the models are not structured to work consistently at the same scale and in close coordination. In order to capture localized policies and the micro-scale effects of walk access to transit, models need a consistent representation of both demand and supply at the parcel level of geography.

Representation of Affordable Housing Development Feasibility

Representing the influences of market demand on rents, and the interaction of these with zoning constraints and other policies (such as inclusionary housing), can be best represented using a financial model that mimics the decision analysis used by real estate developers. This model enables a parcel-level assessment of how increased rents, increased prices, and changes in development costs influence return on investment (ROI) as a result of the following:

- zoning constraints,
- the building program on a site,
- building technology, and
- the effects of policies such as inclusionary housing, which require developers to incorporate some fraction of affordable units into a project on site, or pay an in-lieu fee to the city to support the construction of affordable housing elsewhere in the city.

Representation of Individual Households and Housing Units

To analyze the impacts of housing affordability challenges on households, it is important to distinguish between many characteristics of households, including their income, household size, and stage of life. For example, a small unit may be inappropriate for a large family, even if the rent appears to be affordable. Our assessment is that it is necessary to represent not only individual households in the model, but also individual housing units, so that the characteristics of both can be used to analyze how households with different characteristics choose housing units with different characteristics.

Moving toward full-scale microsimulation on both the household and the housing supply sides of the model also makes the model much more transparent and reflective of the real world.

Representation of Income and Race/Ethnicity

Housing markets are heavily segregated by income, race and ethnicity, and other forms of clustering characteristics like household size and stage of life. Models tend to suppress consideration of race and ethnicity, in spite of a large body of theoretical and empirical research that documents how important these dimensions are to understanding the nature of housing markets. Common sense and experience generally confirm the magnitude of these influences in large, diverse metropolitan areas such as the San Francisco Bay Area. Further, federal and local environmental justice and equity policy mandates motivate the need to at least assess how displacement pressures might disproportionately impact low-income households and households containing black or Hispanic individuals.

Based on prior research and the need to be sensitive to equity concerns, it is therefore a final requirement that models reflect the influences of race and ethnicity on location outcomes of households.

Section 3A: Addressing Displacement in the Bay Area UrbanSim Application

3A.1. Introduction

In this section we explore the potential of the UrbanSim model system to better address displacement concerns and to provide new capacity for MPOs to consider these effects and policies to mitigate them, as part of their operational planning process. We begin by describing the prior application of UrbanSim (Waddell 2011) in the San Francisco Bay Area, as a foundation for the current project. Following this is a discussion of the requirements for adapting UrbanSim to effectively meet the research objectives of the current project to address displacement concerns related to transit investments, and a discussion of the overall strategy for making these adaptations in UrbanSim. We turn next to a more detailed discussion of the design and implementation of UrbanSim and to the changes in model structure, data, and model specification and estimation to address the current research objectives. We close with an assessment of the status of these innovations and a summary of next steps. For a detailed description of the models used in the Bay Area application of UrbanSim that were modified for this project, see Appendix P.

Prior Use of UrbanSim in Plan Bay Area

This effort builds on the prior development and application of UrbanSim in the San Francisco Bay Area, and its deployment and operational use by MTC and the Association of Bay Area Governments (ABAG). UrbanSim was used in coordination with the MTC activity-based travel model system to analyze the Environmental Impact Report (EIR) alternatives for the Plan Bay Area Sustainable Communities Strategy planning process, which ended in 2013 and is now being updated for use in the next SCS planning process.

UrbanSim is designed to support analysis of the potential effects of land use policies and infrastructure investments on the development and character of cities and regions. Its application in the Bay Area was used to update land use forecasts under alternative EIR scenarios, with differing assumptions such as aggregate economic growth targets, transportation system investments and policies, and local land use plans and policies to focus development around transit. UrbanSim was adapted to run at a parcel level and to interface with the MTC travel model. UrbanSim is designed to run as a microsimulation, at the individual household and person level of detail, so that it consistently represents choices of individuals and housing market and local land use policies at the building and parcel levels.

3A.2. Overview of UrbanSim

Design Objectives and Key Features

UrbanSim is an urban simulation system developed over the past several years to better inform deliberation on public choices with long-term, significant effects.[1] A key motivation for developing such a model system is that the complexity of the urban environment makes it is infeasible to

[1]This chapter draws in part on reference (Waddell et al. 2008).

anticipate the cause-and-effect interactions that could have both intended and possibly unintended consequences.

UrbanSim was designed to reflect the interdependencies in dynamic urban systems, focusing on the real estate market and the transportation system, initially, and on the effects of individual interventions, and combinations of them, on patterns of development, travel demand, and household and firm location. The basic features of the UrbanSim model and software implementation are highlighted in Table 3A.1. The model is unique in that it departs from prior operational land use models based on cross-sectional, equilibrium, aggregate approaches to adopt an approach that models individual households, jobs, buildings, and parcels (or gridcells), and their changes from one year to the next as a consequence of economic changes, policy interventions, and market interactions.

Table 3A.1: Key Features of UrbanSim

Key Features of the UrbanSim Model System	• The model simulates the key decision makers and choices impacting urban development; in particular, the mobility and location choices of households and businesses, and the development choices of developers • The model explicitly accounts for land, structures (houses and commercial buildings), and occupants (households and businesses) • The model simulates urban development as a dynamic process over time and space, as opposed to a cross-sectional or equilibrium approach • The model simulates the land market as the interaction of demand (locational preferences of businesses and households) and supply (existing vacant space, new construction, and redevelopment), with prices adjusting to clear market • The model incorporates governmental policy assumptions explicitly, and evaluates policy impacts by modeling market responses • The model is based on random utility theory and uses logit models for the implementation of key demand components • The model is designed for high levels of spatial and activity disaggregation, with a zonal system identical to travel model zones • The model presently addresses both new development and redevelopment, using parcel-level detail
Key Features of the UrbanSim Software Implementation	• The model and user interface is currently compatible with Windows, Linux, Apple OS X, and other platforms supporting Python • The software is implemented in the Open Platform for Urban Simulation • The software is open-source, using the GPL license • The system is downloadable from the web at www.urbansim.org • The user interface focuses on configuring the model system, managing data, running, and evaluating scenarios • The model is implemented using object-oriented programming to maximize software flexibility • The model inputs and results can be displayed using ArcGIS or other GIS software such as PostGIS • Model results are written to binary files, but can be exported to database management systems, text files, or geodatabases

Model System Design

The overall architecture of the UrbanSim model system is depicted in Figures 3A.1, 3A.2, and 3A.3. Most of the early applications of UrbanSim used gridcells of 150 by 150 meters in resolution as the

basic unit of spatial analysis. More recent applications have adopted the use of parcels and buildings, but the overall logic remains intact. What differs is the configuration of specific models.

The models used in the parcel version of UrbanSim differ in some obvious respects from the earlier gridcell versions, and these differences are summarized in Table 3A.2. In addition to the substitution of parcels for gridcells as the unit of analysis, the real estate development model was completely restructured to take advantage of the availability of parcel geography in representing actual development projects, which do vary in size and shape in the real world, in ways that are difficult to reconcile with gridcell geography. The explicit use of buildings is also fairly new in UrbanSim, and allows a clear mapping of occupants to buildings and buildings to parcels.

Table 3A.2: Specification of UrbanSim Model Components Using Parcel Data Structure

Model	Agent	Dependent Variable	Functional Form
Household Location Choice	Household (New or Moving)	Residential Building With Vacant Space	Multinomial Logit
Employment Location Choice	Establishment (New or Moving)	Non-residential Building With Vacant Space	Multinomial Logit
Building Location Choice	Building	Parcel (With Vacant Land)	Multinomial Logit
Real Estate Price	Parcel	Price	Multiple Regression

UrbanSim simulates the real-world actions of agents in the urban system. Developers construct new buildings or redevelop existing ones. Buildings are located on land parcels that have particular characteristics such as value, land use, slope, and other environmental characteristics. Governments set policies that regulate the use of land, through the imposition of land use plans, urban growth boundaries, and environmental regulations, or through pricing policies such as development impact fees. Governments also build infrastructure, including transportation infrastructure, which interacts with the distribution of activities to generate patterns of accessibility at different locations that in turn influence the attractiveness of these sites for different consumers. Households have particular characteristics that may influence their preferences and demands for housing of different types at different locations. Businesses also have preferences that vary by industry and size of business (number of employees) for alternative building types and locations.

The model system contains a large number of components, so in order to make the illustrations clearer, there are three “views” of the system. In Figure 3A.1, the focus is on the flow of information related to jobs. Figure 3A.2 provides a household-centric view of the model system. Finally, Figure 3A.3 provides a view with a focus on real estate.

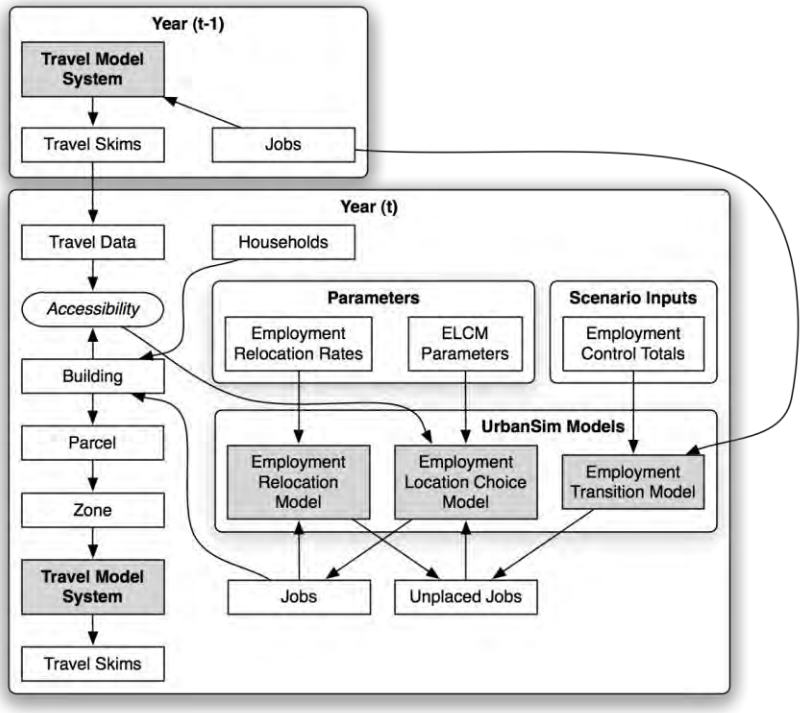

Figure 3A.1: UrbanSim Model Flow: Employment Focus

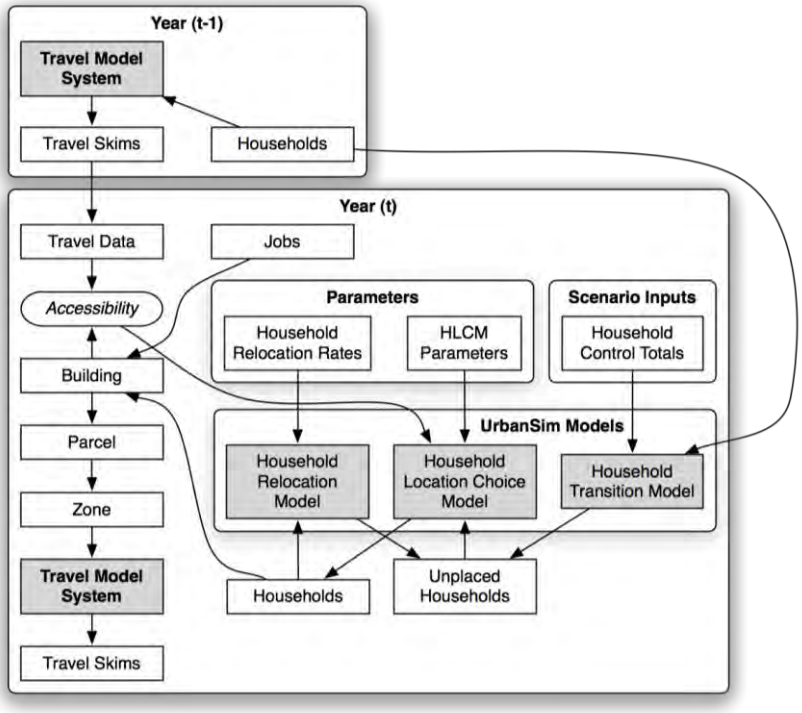

Figure 3A.2: UrbanSim Model Flow: Household Focus

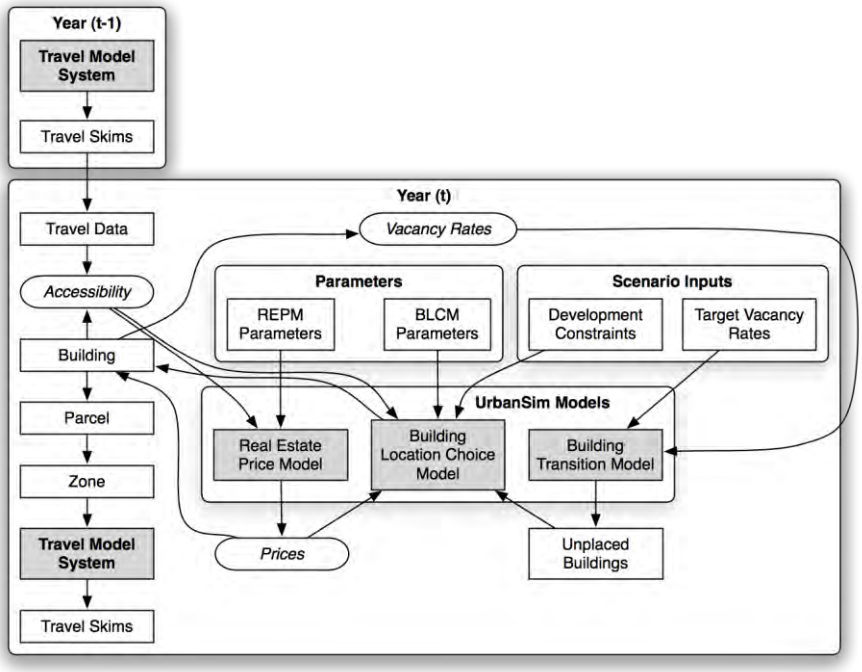

Figure 3A.3: UrbanSim Model Flow: Real Estate Focus

UrbanSim predicts the evolution of these entities (employment, households, and real estate) and their characteristics over time, using annual steps to predict the movement and location choices of businesses and households, the development activities of developers, and the impacts of governmental policies and infrastructure choices. The land use model is interfaced with a metropolitan travel model system (e.g., an MPO's travel demand model) to deal with the interactions of land use and transportation. Access to opportunities, such as employment or shopping, are measured by travel time or cost of accessing these opportunities via all available modes of travel.

The data inputs and outputs for operating the UrbanSim model are shown in Table 3A.3. Developing the input database is challenging, owing to its detailed data requirements. A geographical information system (GIS) is typically used to manage and combine these data into a form usable by the model, and can also be used to visualize the model results. Fortunately, freely available open-source GIS tools such as Quantum GIS and PostGIS are now generally robust enough to handle these needs. Once the database is compiled, the model equations must be calibrated and entered into the model. A final step before actual use of the model is a validation process that tests the operation of the model over time and makes adjustments to the dynamic components of the model. The steps of data preparation, model estimation, calibration, and validation will be addressed in later sections. In the balance of this chapter the design and specification of UrbanSim, using a parcel-based approach adapted for use in the Bay Area, is presented in more detail.

Policy Scenarios

UrbanSim is designed to simulate and evaluate the potential effects of multiple scenarios. We use the term "scenario" in the context of UrbanSim in a very specific way: a scenario is a combination of input data and assumptions to the model system, including macroeconomic assumptions regarding

the growth of population and employment in the study area, the configuration of the transportation system assumed to be in place in specific future years, and general plans of local jurisdictions that will regulate the types of development allowed at each location.

In order to facilitate comparative analysis, a model user such as an MPO will generally adopt a specific scenario as a base of comparison for all other scenarios. This base scenario is generally referred to as the 'baseline" scenario, and this is usually based on the adopted or most likely to be adopted regional transportation plan, accompanied by the most likely assumptions regarding economic growth and land use policies. Table 3A.3 summarizes both the inputs and the outputs of UrbanSim.

Table 3A.3: Data Inputs and Outputs of UrbanSim

UrbanSim Inputs	• Employment data, usually in the form of geocoded business establishments, but alternatively from zonal employment by sector • Household data, merged from multiple census sources • Parcel database, with acreage, land use, housing units, non-residential square footage, year built, land value, improvement value, city and county • City and County General Plans and zoning • GIS overlays for environmental features such as wetlands, floodways, steep slopes, or other sensitive or regulated lands • Traffic Analysis Zones • GIS overlays for any other planning boundaries • Travel model outputs • Development costs • Real estate transactions
UrbanSim Outputs (by Building, Parcel or Gridcell), Generally Summarized by Zone	• Households by income, age, size, and presence of children • Employment by industry and land use type • Acreage by land use • Dwelling units by type • Square feet of nonresidential space by type • Real estate prices
Travel Model Outputs (Zone-to-Zone) Used in UrbanSim	• Travel time by mode, by time of day, by purpose • Trips by mode, by time of day, by purpose • Composite utility of travel using all modes by purpose • Generalized costs (time + time equivalent of tolls) by purpose

Discrete Choice Models

UrbanSim makes extensive use of models of individual choice. A path breaking approach to modeling individual actions using discrete choice models emerged in the 1970s, with the pioneering work of McFadden on Random Utility Maximization theory (McFadden 1974, 1981). This approach derives a model of the probability of choosing among a set of available alternatives based on the characteristics of the chooser and the attributes of the alternative, and proportional to the relative utility that the alternatives generate for the chooser. Maximum likelihood and simulated maximum likelihood methods have been developed to estimate the parameters of these choice models from data on revealed or stated preferences, using a wide range of structural specifications (see Train 2003). Early applications of these models were principally in the transportation field, but also included work on residential location choices (Quigley 1976; Lerman 1977; McFadden 1978), and on residential mobility (Clark and Lierop 1986).

Choice models are implemented in UrbanSim in a modular way, to allow flexible specification of models to reflect a wide variety of choice situations. Figure 3A.4 shows the process both in the form of the equations to be computed, and from the perspective of the tasks implemented as methods in software.

For each model component within the UrbanSim model system, the choice process proceeds as shown in Figure 3A.4. The first steps of the model read the relevant model specifications and data. Then a choice set is constructed for each chooser. Currently this is done using random sampling of alternatives, which has been shown to generate consistent, though not efficient, estimates of model parameters (Ben-Akiva and Lerman 1987).

The choice step in this algorithm warrants further explanation. Choice models predict choice probabilities, not choices. In order to predict choices given the predicted probabilities, we require an algorithm to select a specific choice outcome. A tempting approach would be to select the alternative with the maximum probability, but unfortunately this strategy would have the effect of selecting only the dominant outcome, and less frequent alternatives would be completely eliminated. In a mode choice model, for illustration, the transit mode would disappear, since the probability of choosing an auto mode is almost always higher than that of choosing transit. Clearly this is not a desirable or realistic outcome. In order to address this problem, the choice algorithm used for choice models uses a sampling approach. As illustrated in Figure 3A.4, a choice outcome can be selected by sampling a random number from the uniform distribution in the range 0 to 1, and comparing this random draw to the cumulative probabilities of the alternatives. Whichever alternative the sampled random number falls within is the alternative that is selected as the "chosen" one. This algorithm has the property that it preserves in the distribution of choice outcomes a close approximation of the original probability distribution, especially as the sample size of choosers becomes larger.

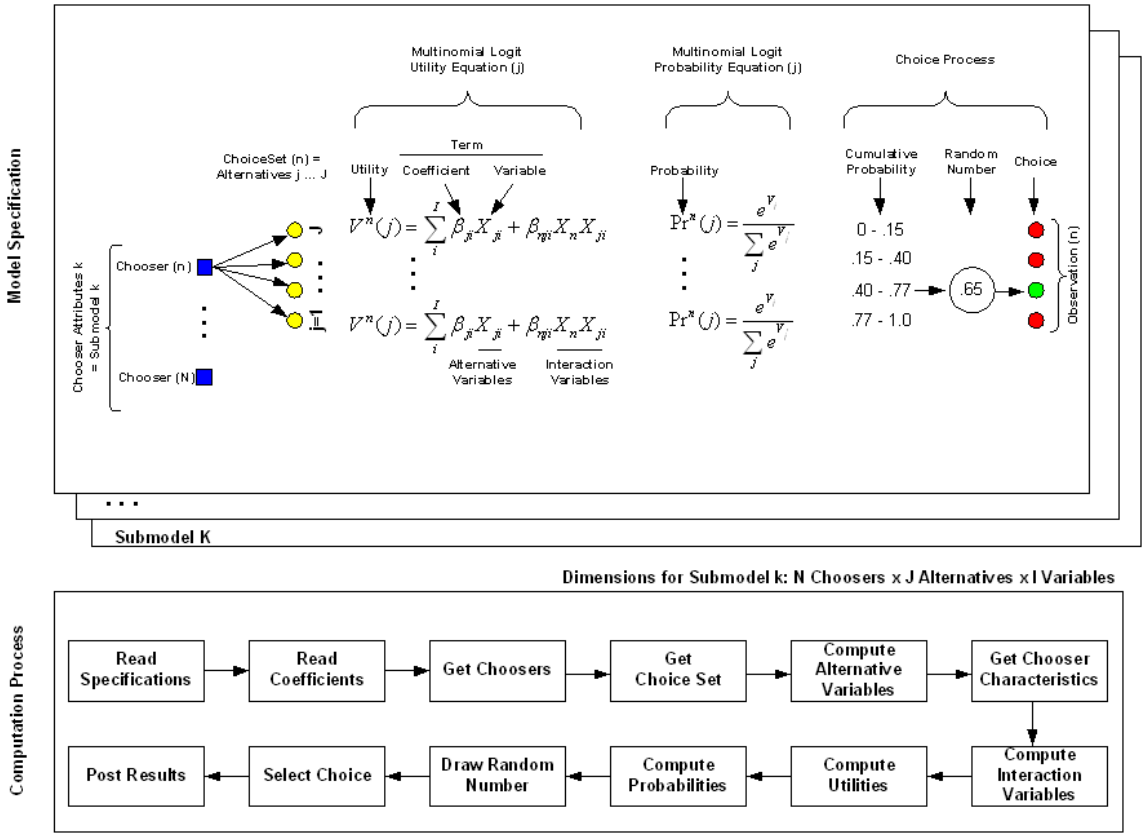

Figure 3A.4: Computation Process in UrbanSim Choice Models

3A.3. Adapting UrbanSim to Address Displacement

Representation of Individual Households and Housing Units

A prerequisite for many of the enhancements to UrbanSim required for this project was to represent individual households and individual housing units. While UrbanSim already used individual households (and persons) in the previous implementation for the Bay Area, it used parcels and buildings as the smallest representations of housing supply. In this project, we have extended the data schema to represent each residential unit in the region, in addition to buildings and parcels. The combination of microsimulating households and residential units simplifies the accounting of which units are for rent (and which households are renting) as well as enabling more detailed tracking of households of different incomes, household structures, and racial and ethnic composition, which are found to be important in exploring the core questions in this research project.

Representation of Renter and Owner Markets Separately

In order to separately represent renter and owner housing markets, several changes have been implemented in data structures and model specifications.

Model structures were modified in the following ways:

- Household relocation models were modified to separately model the move-out probabilities of renters and owners
- Hedonic regression models were modified to separately predict owner-occupied housing sales prices and rental rates for rental housing
- Household location choice models were modified to separate renters from owners, with renters only choosing from vacant rental units, and owners only choosing from among vacant owner units
- Supply-demand price adjustment models were adapted to separately treat the adjustment of rents and prices in the respective components of the housing market
- The real estate development model was modified to evaluate pro forma return on investment for both rental and owner options for relevant housing types, using prices and rents from the relevant hedonic regressions

Data structures were changed in the following ways:

- A housing-unit-level table was added, disaggregating from parcels and buildings, representing each individual housing unit in the region
- Tenure status (rent or own) was imputed for each housing unit from census-block-level tenure composition
- Tenure status was added to each household record in the synthetic population, from the relevant Public Use Microdata Sample (PUMS) record

These changes to models and data structures capture the most essential changes to address the requirement of separately representing the owner and renter markets.

We used rental listings from Craigslist to estimate the rental hedonic model presented in Table 3A.4, using the log of monthly asking rent per square foot as the dependent variable. Housing rents were collected by scraping rental listings from the Bay Area Craigslist website over a period of several months. Only records that were sufficiently complete, and included a geocoded location, were used.

Figure 3A.5 shows the distribution of rent per square foot for the collected listings. We tested a combination of structural, neighborhood, and accessibility variables as independent variables in the model. Neighborhood variables were computed as queries of parcels that were within a half-kilometer along the local street network, to better reflect the localized nature of neighborhood effects. The accessibility variables are from the MTC Travel Model, and reflect composite utilities (logsums) that are intended to capture the full set of influences on accessibility to specific modes, across destinations. The estimation results for the rental hedonic model reflect that not only do standard structural characteristics such as square footage and structure type influence rents per square foot, but so too do socioeconomic characteristics of the neighborhood around the units, including their income and racial composition, as well as broader accessibility from the location by auto and transit.

Table 3A.4: Hedonic Regression Estimation Results for Rental Listings

Dependent Variable: Log of Price Per Sq. Ft.	coef	std err	z	P>|z|
Intercept	6.6031	0.079	84.012	0.000
Log of average sq. ft. per unit	-0.3266	0.002	-148.469	0.000
Average lot size per unit	-0.0406	0.001	-34.985	0.000
Average income	0.0473	0.001	32.935	0.000
Poverty rate	-0.5245	0.013	-39.223	0.000
% Black	-0.0068	9.46e-05	-71.538	0.000
% Hispanic	-0.0028	0.000	-27.751	0.000
% Asian	0.0057	9.77e-05	58.724	0.000
% Renters	0.0009	0.000	5.159	0.000
Single family dwelling unit	-0.0718	0.001	-79.909	0.000
Auto Peak Total Accessibility	-0.5061	0.014	-36.533	0.000
Transit Peak Total Accessibility	0.0166	0.001	30.635	0.000
Auto Off Peak Retail Accessibility	0.2103	0.015	14.046	0.000
Total non-residential units	0.0279	0.001	41.777	0.000
Total residential units	0.1467	0.002	82.811	0.000
Observations	73,134			
Adj R-squared.:	0.562			

Data Sources: Bay Area UrbanSim Synthetic Population (derived from PUMS), MTC Travel Model, Craigslist

Note: Neighborhood variables are averages within 0.5 to 3 km

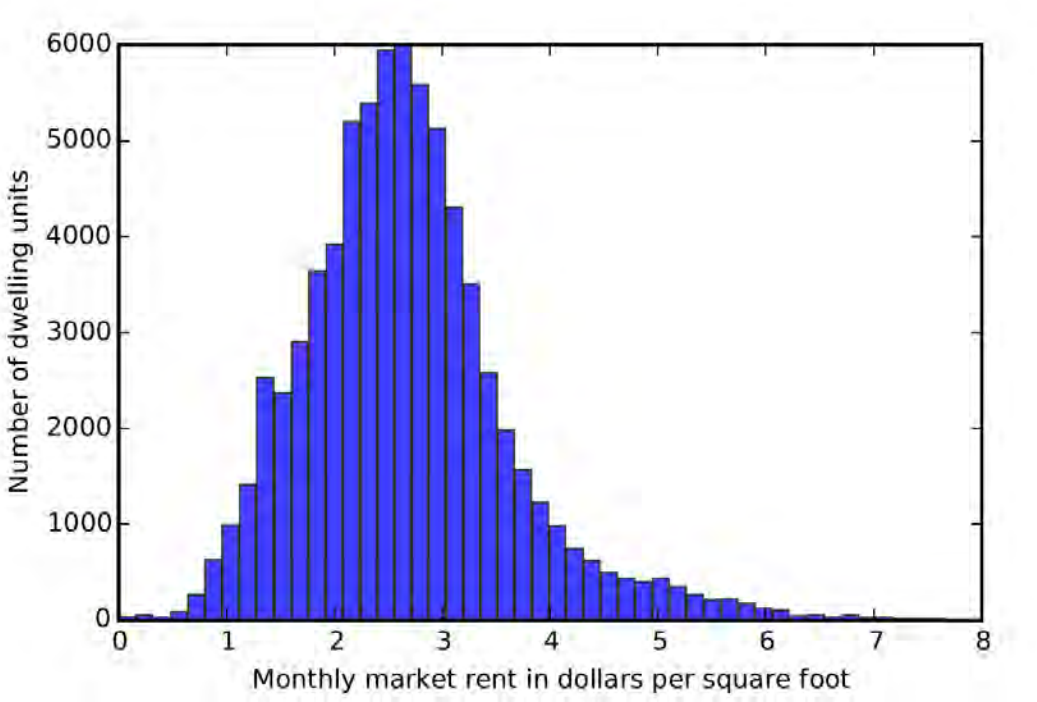

Figure 3A.5: Rent per Square Foot from Craigslist Rental Listings

Size of units is of course relevant to housing affordability, and the size distribution of the rental listings is shown in Figure 3A.6.

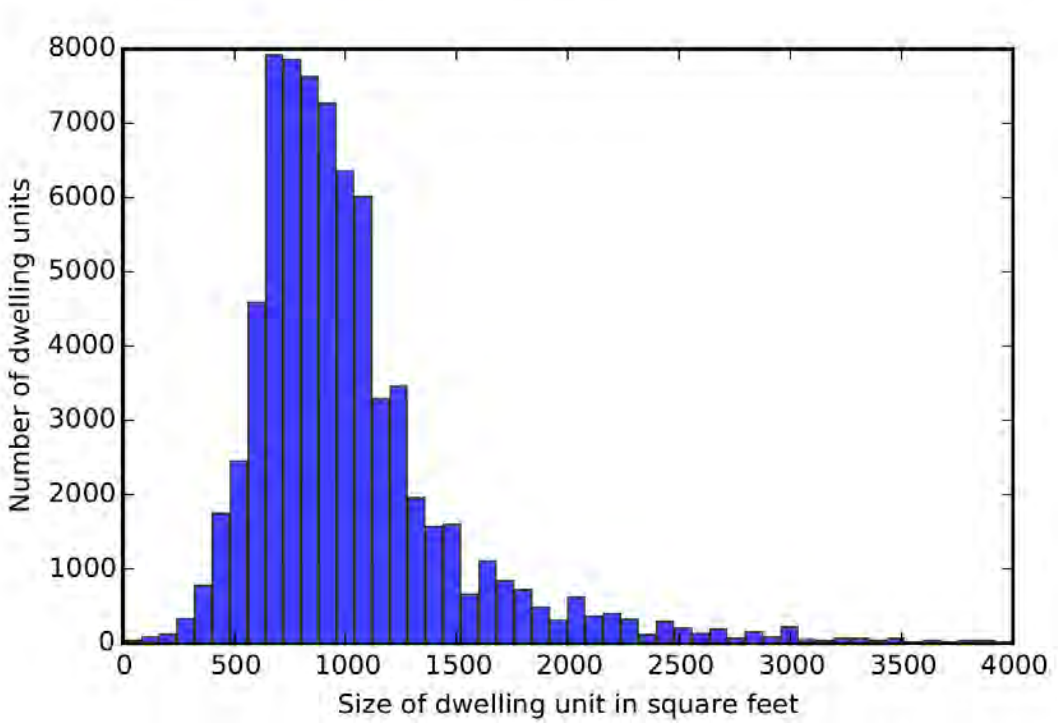

Figure 3A.6: Square Footage per Unit from Craigslist Rental Listings

Representation of Income and Race/Ethnicity

Income, racial and ethnic composition of households was incorporated into the data and several models. It was added to the hedonic regression models as shown above in Table 3A.4, in addition to the move-out models and the location choice models. Results were mainly significant in the location choice models (housing demand), and not surprisingly, therefore also in the hedonic models of housing rents and prices. Income and race/ethnicity were not generally found to be significant in the decision to move out.

Representation of the Influence of Rent Burdens on Moving Out

UrbanSim's household relocation choice model prior to this project was a rate-based model in which the probability that a household moves out of its residence in a given year (independent of housing tenure) depended on the age of the head of the household and household income. This model was modified to a binary logit model, with the probability of moving as the outcome variable.

The hedonic regression for rents was used to predict rents for all units. For renters in the synthetic population, the rental cost burden was calculated as the annualized rent divided by household income, and used as an independent variable and presented in Figure 3A.7.

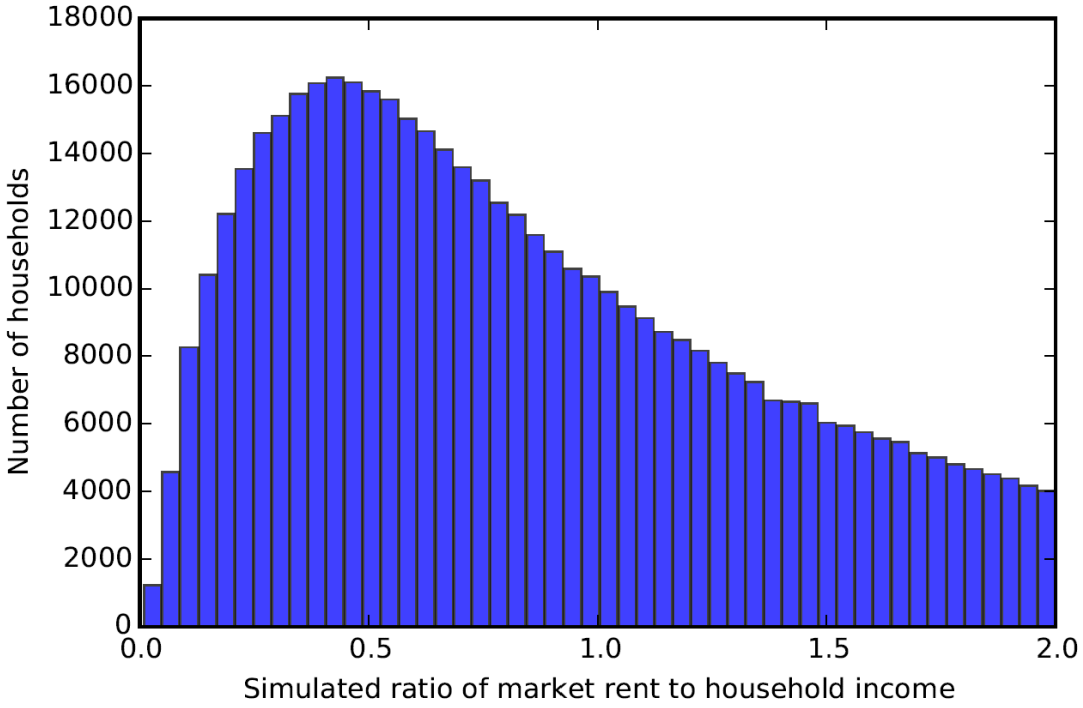

Figure 3A.7: Rent Burdens for Bay Area Households

These estimation results in Table 3A.5 show that there is a systematic change in the coefficients on rent burden as the income of the household increases, with higher coefficients for higher-income households. While this might initially appear counter-intuitive, it is entirely consistent with the observed data: households with lower incomes are forced to spend a higher fraction of their incomes on housing. We also test for any impacts of race of household on move-out propensity, but find these to be largely insignificant, with only Asian households having a measurable difference in their propensity to move. The lack of race effects on move-out behavior is also consistent with the hypothesis that the move-out decision is mostly driven by the economics of rent burdens and other factors such as age, household size, and the presence of children.

Table 3A.5: Relocation Choice Model Estimation Results for Renters

Dependent. Variable: Moved During Last Year	coef	std err	z	P>|z|
Intercept	0.3159	0.134	2.365	0.018
Rent Burden ($10,000 income bracket)	0.0121	0.001	8.707	0.000
Rent Burden ($20,000 income bracket)	0.0114	0.001	7.679	0.000
Rent Burden ($40,000 income bracket)	0.0176	0.002	9.873	0.000
Rent Burden ($60,000 income bracket)	0.0257	0.003	9.593	0.000
Rent Burden ($80,000 income bracket)	0.0379	0.003	11.099	0.000
Rent Burden ($100,000 income bracket)	0.0432	0.004	10.253	0.000
Rent Burden ($120,000 income bracket)	0.0566	0.005	11.064	0.000
Rent Burden ($150,000 income bracket)	0.0582	0.006	9.545	0.000
Rent Burden ($200,000 income bracket)	0.0803	0.008	10.575	0.000
Rent Burden ($300,000 income bracket)	0.0976	0.012	8.317	0.000
Rent Burden (top income bracket)	0.1607	0.029	5.553	0.000
Income\($ thousands)	0.0003	0.001	0.442	0.659
Age of householder	-0.0429	0.002	-23.155	0.000
Persons in household	-0.2380	0.020	-11.727	0.000
Presence of Young Child	0.1953	0.081	2.424	0.015
Hispanic householder	-0.0927	0.072	-1.294	0.196
Black householder	0.0337	0.094	0.357	0.721
Asian householder	0.1312	0.064	2.047	0.041
Public assistance income ($ thousands)	-0.0087	0.030	-0.288	0.774
San Francisco householder	-0.8309	0.073	-11.458	0.000
Observations	10,014			
Pseudo R-squared:	0.09712			
Data Source: American Community Survey 2013				

Representation of the Influence of Rent Burdens on Moving In

The effects of rent burdens on households considering a location to move into are captured in the household location choice models in UrbanSim. These have been structured for this project to segment households by income quartile, with separate model estimation for each income quartile, from 1 (lowest) to 4 (highest)[2]. The models are estimated using PUMS. The models are also segmented by owner and renter households. Table 3A.6 displays the results are for renters in income Quartile 1.

These estimation results still require further calibration in order to adjust for the potential influence of variables not measured in the model. In particular, we do not observe numerous internal quality characteristics of housing units, and as a result of this omission, the coefficients on rent are positive rather than negative, though this must be interpreted in the context of other variables such as income, which is a powerful variable in these location choice models. Note that the coefficient for average nearby income increases from -1.45 for quartile 1 (Table 3A.6), to -0.839 for quartile 2 (Table 3A.7), -0.155 for quartile 3 (Table 3A.8), and finally to 1.197 for quartile 4 (Table 3A.9). Rents and average incomes are of course correlated, so in this case the income coefficient for renters is negative for low income renters since they cannot afford to locate in higher income neighborhoods. As incomes for renters increase, this negative correlation is reduced, and

[2] Quartile 1: $0-$30,000, Quartile 2: $30,000-$60,000, Quartile 3: $60,000-$100,000, Quartile 4: $100,000 +

Table 3A.6: Location Choice Model Estimation Results for Renters in Income Quartile 1

Dep. Var: Location Choice	Coefficient	Std. Error	Z-Score
Log of rent	0.488	0.076	6.396
Log of nearby sq. ft. per unit	0.084	0.024	3.554
Log of nearby lot size per unit	1.063	0.117	9.059
Average nearby income	-1.454	0.032	-46.069
Log(persons * avg. household size)	0.198	0.020	9.965
White * Log(1 + % White)	9.169	0.007	1318.078
Black * Log(1 + % Black)	5.386	0.009	619.337
Hispanic * Log(1 + % Hispanic)	6.267	0.006	1001.648
Asian * Log(1 + % Asian)	5.374	0.008	641.331
Nearby Jobs	0.022	0.008	2.685
Auto Peak Total Accessibility	0.463	0.054	8.634
Transit Peak Total Accessibility	0.048	0.006	8.139
Auto Off Peak Retail Accessibility	-0.437	0.059	-7.425
Pseudo R-squared:	0.077		

Data Sources: Bay Area UrbanSim Synthetic Population (derived from PUMS), MTC Travel Model

Note: Neighborhood variables are averages within 0.5 to 3 km

The comparison of the rent coefficients across income quartiles reveals that it drops slightly from 0.488 for quartile 1 (Table 3A.6), to 0.174 for quartile 2 (Table 3A.7), before climbing to 0.768 for quartile 3 (Table 3A.8), and to 1.011 for quartile 4 (Table 3A.9). Taken as relative measures, this indicates that from quartile 2-4, there is declining sensitivity to rents, which is consistent with households at higher incomes being more willing and able to pay for amenities and higher-quality finishes. Why the lowest income quartile is slightly less sensitive to rents than the second income quartile is less obvious, but most likely is due to an inability to escape higher rent burdens due to the absence of lower-cost housing options.

Aside from control variables for accessibility and neighborhood job density, the interaction of household characteristics with the socioeconomic characteristics of neighborhoods also appears to be very important in understanding spatial segregation patterns. We find very significant clustering effects when interacting the characteristics of households making a location choice with the fraction of households in a neighborhood that share the same characteristic. This applies for household size, with larger households preferring locations in which other households are also larger (more children, generally). It also applies to the racial and ethnic composition of households independent of the income effect. Clustering of whites, blacks, Hispanics, and Asians is clearly evident in the coefficients for these location choice models. One intriguing pattern emerges when comparing across income quartiles: the coefficient on same-race interaction decreases markedly from the lowest to higher income quartiles for blacks, and declines somewhat less for Hispanics, whereas it does not decline much at all for whites or Asian renter households. This suggests that as their income increases, blacks and Hispanics are more likely to move into more integrated neighborhoods.

Table 3A.7: Location Choice Model Estimation Results for Renters in Income Quartile 2

Dep. Var: Location Choice	Coefficient	Std. Error	Z-Score
Log of rent	0.174	0.076	2.276
Log of nearby sq. ft. per unit	-0.017	0.024	-0.721
Log of nearby lot size per unit	0.202	0.106	1.908
Average nearby income	-0.839	0.032	-26.212
Log(persons * avg. household size)	0.474	0.019	24.471
White * Log(1 + % White)	9.244	0.006	1464.798
Black * Log(1 + % Black)	3.924	0.009	448.839
Hispanic * Log(1 + % Hispanic)	5.820	0.006	965.782
Asian * Log(1 + % Asian)	4.598	0.008	587.814
Nearby Jobs	-0.000	0.008	-0.037
Auto Peak Total Accessibility	0.459	0.054	8.422
Transit Peak Total Accessibility	0.015	0.006	2.794
Auto Off Peak Retail Accessibility	-0.359	0.059	-6.067
Pseudo R-squared:	0.041		

Data Sources: Bay Area UrbanSim Synthetic Population (derived from PUMS), MTC Travel Model

Note: Neighborhood variables are averages within 0.5 to 3 km

Table 3A.8: Location Choice Model Estimation Results for Renters in Income Quartile 3

Dep. Var: Location Choice	Coefficient	Std. Error	Z-Score
Log of rent	0.768	0.082	9.404
Log of nearby sq. ft. per unit	0.130	0.025	5.222
Log of nearby lot size per unit	-0.758	0.111	-6.846
Average nearby income	-0.155	0.039	-4.005
Log(persons * avg. household size)	0.940	0.020	47.245
White * Log(1 + % White)	8.908	0.008	1182.424
Black * Log(1 + % Black)	3.636	0.010	349.770
Hispanic * Log(1 + % Hispanic)	5.094	0.007	762.927
Asian * Log(1 + % Asian)	4.854	0.009	565.542
Nearby Jobs	-0.027	0.008	-3.506
Auto Peak Total Accessibility	0.934	0.058	16.201
Transit Peak Total Accessibility	-0.019	0.005	-3.657
Auto Off Peak Retail Accessibility	-0.617	0.063	-9.762
Pseudo R-squared:	0.032		

Data Sources: Bay Area UrbanSim Synthetic Population (derived from PUMS), MTC Travel Model

Note: Neighborhood variables are averages within 0.5 to 3 km

Table 3A.9: Location Choice Model Estimation Results for Renters in Income Quartile 4

Dep. Var: Location Choice	Coefficient	Std. Error	Z-Score
Log of rent	1.011	0.075	13.517
Log of nearby sq. ft. per unit	0.175	0.024	7.451
Log of nearby lot size per unit	-1.132	0.109	-10.389
Average nearby income	1.197	0.036	33.641
Log(persons * avg. household size)	0.030	0.020	1.448
White * Log(1 + % White)	8.032	0.009	928.342
Black * Log(1 + % Black)	3.253	0.013	258.123
Hispanic * Log(1 + % Hispanic)	3.792	0.008	486.235
Asian * Log(1 + % Asian)	4.310	0.010	449.356
Nearby Jobs	-0.028	0.007	-3.917
Auto Peak Total Accessibility	1.622	0.061	26.596
Transit Peak Total Accessibility	-0.008	0.005	-1.673
Auto Off Peak Retail Accessibility	-1.268	0.069	-18.390
Pseudo R-squared:	0.06		

Data Sources: Bay Area UrbanSim Synthetic Population (derived from PUMS), MTC Travel Model

Note: Neighborhood variables are averages within 0.5 to 3 km

Representation of Parcel-Level Demand and Supply

As noted in the above section, "Requirements for Regional Models to Represent Displacement," the need to reflect detailed zoning and walk-scale access to transit imposes a requirement that parcel- and building-level representation be used to capture these effects. In this application of UrbanSim, we have exploited the use of local street network-based accessibility, and moved to a representation not only of parcels, but of individual residential units within buildings. This enables appropriate measurement of localized policies and amenity effects in the location choice models (demand), real estate development models (supply), and hedonic models (prices).

Representation of Affordable Housing Development Feasibility

We have explored alternative strategies to address affordable housing construction in the real estate development model using pro forma analysis. The affordable housing component is made up of two subcomponents, inclusionary housing development and multi-family housing built with assistance from the Low-Income Housing Tax Credit (LIHTC) program, which we believe will capture a majority of all new subsidized affordable housing developed in the coming decades. We have developed a working add-on to the developer model to simulate inclusionary housing development, using San Francisco as a prototype. This can be expanded to the rest of the Bay Area with some data collection about the particular aspects of different jurisdictions' inclusionary housing ordinances. After pursuing several options of how to operationalize a model of LIHTC-assisted developments, we have developed a potential blueprint for how to address this in the UrbanSim developer model.

Inclusionary Housing

For the past 10 years or so, recognizing the difficulty of providing housing at prices affordable to low and moderate-income households, the City and County of San Francisco, among other

jurisdictions in the Bay Area, have required developers of market-rate housing to provide housing affordable to low-income households. The developer can choose to:

- Provide affordable housing on site;
- Provide affordable housing off site;
- Pay an in-lieu fee on a per-unit basis, providing funds the Mayor's Office of Housing can use to support affordable housing development.

The program applies to all housing development above 10 units, which is the vast majority of development projects (counted in terms of units provided) in San Francisco.
Affordability levels:

- Per Planning Code Sections 415.6 (c) and 415.7 (d), initial rental below market rate (BMR) Rental Units will be priced to be Affordable to Qualifying Households at 55% of area median income (AMI).
- Per Planning Code Section 415.6 (c), initial sale BMR Ownership Units that are provided on the site of the Principal Project will be priced to be Affordable to Qualifying Households 90% of AMI on average.
- Off-site BMR Ownership Units must be affordable to Qualifying Households earning no more than 70 percent of AMI.
- Off-site BMR Rental Units must be affordable to Qualifying Households earning no more than 55 percent of AMI.

UrbanSim has a ROI-type developer model which is separated into the following: a) a feasibility calculation for all parcels for a number of building types, and b) a model selecting the most promising projects. The feasibility model returns a list of parcels where projects could pencil out. When the simulation is actually run, development is randomly chosen among such feasible projects, weighted by profitability, favoring financially stronger projects.

We incorporate inclusionary housing into the developer model on the feasibility side, such that jurisdictions whose planning codes contain inclusionary housing would be, all other things being equal, more expensive places in which to develop, assuming some portion of the cost for renting or selling units at less than their market value is carried by the developer. The implication from a policy perspective would be that the geography of development would, all other things equal, be impacted by the presence or absence of inclusionary ordinances, allowing for somewhat explicit testing of the effect of their introduction, and the provisions they contain. From a modeling perspective, adjusting the feasibility calculation is a quite direct and explicit way of achieving this end.

An important component in the feasibility calculation is the revenue side of potential development projects, which, compared with the cost estimate, make up the basics of the feasibility. Potential revenues come from an aggregation of hedonic sales prices for nearby or similar projects. The basic idea behind the implementation of inclusionary housing is to enter the calculation where expected sales prices are calculated. This takes place in the variable function known as "parcel-average-price." Instead of relying strictly on zone-level hedonic quantiles for expected sale price, the parcel-average-price function now performs a county-level lookup of a U.S. Department of Housing and Urban Development (HUD)-derived table on low-income limits, which is used to calculate upper threshold values for how much housing can cost and remain affordable to households earning 50% of the AMI. The developer must be able to break even, while providing these units at these much lower levels of revenue.

The following lists assumptions made to simulate inclusionary housing development in UrbanSim for the San Francisco prototype:

- We assume inclusionary units are built for this target income level, which is true for the San Francisco program but not necessarily for other jurisdictions.
- We assume inclusionary units are only built in jurisdictions with actual ordinances on the books, ignoring any voluntary arrangements.
- Placeholder values exist at the jurisdiction level (city-id), assuming 12% for all jurisdictions with an inclusionary ordinance.
- We also assumed a two-person household for the purpose of determining the target rent level, which is the closest integer to the average San Francisco household size. It may be advisable to parameterize this choice as a constant, or allow it to vary geographically to better fit actual local variations.
- We have set aside for now the complexities of off-site provision, as well as in-lieu fees.
- Concretely, this would mean that while a hedonic model may provide $600 per square foot as a revenue assumption, 12 percent of the units now come with a much smaller, around $200-per-square-foot assumption. The overall project revenue is then the weighted sum of the two.
- A significant deficiency here is that no accounting is done of BMR units produced pursuant to the program. Ideally, there would be explicit accounting of any BMR units produced, over time changing the geography of affordable housing as the simulation progresses. The reason for this is mainly because of a pending migration of the unit of analysis to individual housing units away from the current square footage representation of built space. Once that is in effect, individual units should be flagged as deed-restricted units, and, importantly, the household location choice model should be segmented to select BMR vs non-BMR units. This would entail schema changes as well as model changes.

LIHTC-Assisted Projects

We have explored several possibilities for modeling 100% affordable multi-family units, which make up a majority of all income-restricted housing units in the Bay Area, developing rough conceptual models for each, and discussing their plausibility with specialists from the San Francisco Mayor's Office of Housing, ABAG, the San Francisco-based Non-Profit Housing Association of Northern California (NPH), and Mercy Housing California (a large statewide developer of non-profit housing).

The initial concept was a "layering" approach, whereby affordable housing projects would compete with market-rate development for land in the developer model. Their ability to compete would be based on layers of subsidies from various public sources (LIHTC, remaining redevelopment funds, and other sources) as well as streamlined entitlement processes that would reduce friction and allow these projects to be completed in less time. Housing practitioners acknowledged that affordable housing would be developed in this manner in an ideal world, but in reality, land in San Francisco has become so expensive that it only gets set aside for affordable developments if it is dedicated by public agencies, donated by developers through one-off agreements with elected officials, or is made available through other types of arrangements that would be impossible to model.

The next iteration was based on an assumption that the vast majority of 100% affordable multi-family developments would receive LIHTCs, which is supported by our interviews with housing experts. Based on this assumption, if we could model the location of LIHTC-assisted projects (in

addition to the inclusionary housing units) we could approximate locations of the new income-restricted units that will be built in the region. Although we have a dataset of all of the developments built in past years with tax credits, our goal was to use the locational criteria established by the California Tax Credit Allocation Committee to forecast where future developments might go. Unfortunately, this approach proved infeasible as locational criteria have a relatively small effect on the likelihood that a proposed project will receive 9% LIHTC, which are competitively allocated by the California Tax Credit Allocation Committee. The official 2015 regulations for assessing 9% LIHTC applications, for example, provide applicants with a maximum of 15 points for neighborhood amenities, a small percentage of the total possible score of over 120 points.[2]

We have, however, come up with a filtering mechanism that may allow us to narrow the range of total possible parcels to one in which affordable housing developments may be located. Municipalities are required to submit their housing elements to the California Department of Housing and Community Development (HCD). Housing elements must include a listing of parcels already entitled for residential development that will allow cities to meet their Regional Housing Needs Allocation (RHNA). ABAG intends to compile this list of suitable housing sites from all Bay Area jurisdictions in the near future. We believe that the combination of sites deemed suitable through the housing elements (which will have already cleared the political hurdles of public hearings and entitlement process) and the locational criteria of LIHTC may give a reasonable approximation of where 100% affordable multi-family housing developments are likely to occur.

Summary of Status and Next Steps

This project has explored strategies for addressing questions around displacement related to transit investment and has made substantial progress in first, identifying requirements for making such adjustments in the modeling, and second, implementing these requirements. Significant changes have been made in the data structures and models to address the challenges of modeling displacement and modeling the impacts of alternative policies intended to mitigate these problems. We have not fully incorporated these changes into the operational models at MTC and ABAG, though most are in a condition that they could be easily incorporated at this point. This should be the case for the changes in data structures, household relocation model, hedonic models, and household location choice models. Estimation for these models has been completed.

What remains before full implementation and operational use is the following:

- Completion of proposed changes to the real estate supply model to simulate alternative policies designed to address affordable housing supply
- Testing and calibration of the combined changes to ensure reasonable predictions with the fully integrated model system
- Sensitivity testing of the updated, calibrated model system
- Running alternative scenarios with the calibrated model system to compare the effects of alternative policy strategies on displacement outcomes

As of early 2017, MTC has begun integrating most of the research innovations added to UrbanSim as part of this project and through a separate project funded by the MacArthur Foundation into their operational version of UrbanSim. The UrbanSim modeling methodology and platform has also recently been adopted for operational use by SANDAG, and efforts are now underway to generalize

[2] See http://www.treasurer.ca.gov/ctcac/programreg/regulations.asp for details on the regulations.

these changes to make them readily usable by any metropololitan area without extensive customization.

Section 3B: Addressing Displacement in the SCAG PECAS Model

3B.1. Introduction

In this section we present enhancements to the land use model used in the Los Angeles by the Southern California Association of Governments (SCAG) known as the PECAS Land Use Model. First, we review the types of displacement categorized by previous research (Chapple, Chatman, and Waddell 2014) and assess how to implement the causality within PECAS;s general equilibrium framework (Hunt and Abraham 2005). Second, given empirical findings concerning the displacement near TOD areas outlined in Chapter 2, the SCAG PECAS model was updated to incorporate incomes and rents. This update allows the analysis of the regional economic benefit of TOD that took place in Los Angeles County, which is presented in the Appendix Q. Lastly, it provides possible options for further enhancement.

The SCAG PECAS model is designed as a sketch tool to provide an overview of the impact of planning alternatives for the SCAG region, which consists of six counties with over 5 million households and 18 million people. The SCAG PECAS model was developed from 2008-2010 via a cooperative arrangement with the UC Davis Team charged with developing the statewide PECAS version.. The SCAG region was "carved" out from the statewide database as a sub-regional model. Then, the model was recalibrated with available data for the SCAG region at that time, including travel skim matrices and land use inventory. Its relevancy was somewhat compromised by not fully being calibrated with genuine SCAG regional data. However, by taking such an expedited development path, SCAG was able to operate the model internally to produce cursory impact analyses for the 2012 RTP/SCS.

In its core, PECAS estimates the amount of goods, services, labor, and building floor space produced and consumed. As an output, it generates snapshots of household and job allocation in the region at 302 zones defined by Community Statistical Areas (CSA). While PECAS estimates land use transition for 4.5 million individual parcels in the SCAG region in its space development (SD) model (described in more detail in Section 3B.2), the model's main focus is to summarize regional economic performance of various policy assumptions at a manageable scale.

Given this modeling framework, the SCAG PECAS model is equipped to answer the question, "how does the region look when TOD is implemented compared to when TOD is not implemented?" It is not, however, equipped to answer the question, "what are the characteristics of the residents or households that move into or out of the TOD area?" This is because the sketch model searches for a spatial equilibrium state and uses relatively coarse geographic units of analysis (the CSA zone) and simplified stratification of economic agents (e.g., categories of households, not individual households). This simple model specification allows SCAG to review various planning alternatives in a relatively short analysis period and on a small budget.

The SCAG PECAS models is only partially adequate to explain the dynamic and disaggregated nature of displacement presented in the discussions in previous chapters and sections of this report. The SCAG PECAS model is a quasi-dynamic model in which a momentary state depends on the previous state, and it calculates the "changes" by comparing the two states at different times. Thus, it presents the net changes instead of identifying individual effects separately. The current SCAG PECAS model is without a mechanism that associates individual agents (e.g., households) to residential units at parcel level. Thus, the current SCAG PECAS model is not capable of analyzing potential displacement at the level of detail desired for this project.

Without major investment planned for the foreseeable future, this project gives SCAG an opportunity to review the new requirements for modeling potential displacement and to consider how these requirements compare to the SCAG PECAS model's current capabilities. It also gives SCAG the opportunity to evaluate methods that could be used in the future to incorporate additional information and to marginally update the model with the latest statistical findings related to TOD investment.

Modification of modeling dimensions, like reclassification of households/industrial sectors or changing zone systems, is considered a major update. In the general equilibrium states on which the PECAS is formulated, every variable is inter-related. Changing the model's dimension means almost all model coefficients should be re-estimated for the new structure. The current project does not aim for such a major update. The updating process summarized in the following sections demonstrates a possible method for enhancing existing PECAS-like land use models that represent economic actors and activities in aggregated form with very limited resources.

The following discussion consists of three sections: 1) an overview of the SCAG PECAS model, 2) a review of how it can be updated to model the types of displacement under consideration by recalibrating the zonal utility constant (but without radically re-framing the model structure) and applied to show the impact of TOD, and 3) a summary and recommendation with options for further enhancement, including major updates.

3B.2. PECAS and SCAG PECAS Model Overview

PECAS (Hunt and Abraham 2005) is a land use forecasting and policy analysis system used for comprehensive planning and transportation planning. It is a time-series (year-by-year) simulation of the evolution of the spatial form and the contribution of the transportation system to the future development of the economy and spatial patterns.

It consists of two internal modules—activity allocation (AA) and space development (SD)—and two external modules—economic/demographic (ED) and transportation (TR) (J.E. Abraham and Hunt 2007).

The AA module represents two elements: (1) the relationships between the people of the region—their interaction with businesses and other establishments in the region (and in the world) through markets for labor, goods, and services and (2) the relationships between businesses and establishments. The module allocates the region's households and production (employment) (called "activities") to the region's buildings (and other land improvements). It uses the region's travel demand models (TDM) to allocate "activities" according land uses and "skims" the TDM for travel conditions between transportation analysis zones (TAZs). The word "PECAS" is an acronym for "Production Exchange Consumption Allocation System," since AA represents the production of

goods, services, and labor (collectively called "commodities") in one location, and the exchange (and transportation) of these items to consuming entities in other locations, with a spatial price search mechanism at the point of exchange in order to clear the markets for each commodity in each short-term equilibrium time period (each year of the simulation).

PECAS' AA module estimates the production and consumption of commodities and building floor space, with consideration of three types of equilibrium states: 1) given the regional control of households and jobs, the estimated regional production is identical to consumption, and there is a set of market clearing prices in zones; 2) each type of household and business has a set of substitution technology, which determines the amount of input and output to maximize their gain at a given set of commodity prices according to the technology; 3) given the transportation system (and its capacity) as supply for transportation activity, the zone-to-zone travel demand for exchange of commodities from the produced zone to the finally consumed zone determines travel time and travel cost. The market clearing commodity price includes this endogenously determined travel cost.

The SD module represents developers (private or public) as they change the built form of the region (Hunt et al. 2007; Hunt and Abraham 2009). SD represents the land and buildings in the region via a parcel database; development conditions are represented via construction costs, zoning regulations, fees, servicing costs, etc. SD also represents the detailed appropriateness of specific parcels for specific uses through proximity functions, and is thus able to respond to the price signals (received from AA) indicating neighborhood demand/supply in a way that respects and responds to the specific arrangement of developable land, roads, buildings, transit stations, etc. SD inputs are largely GIS files that describe the land and parameters that represent developer behavior and ROI functions.

An aggregate version of SD is often developed in complex regions with missing or inconsistent data. This aggregate version contains a simplified inventory of the quantity of developed and vacant land in each land use zone, categorized by current development and zoning category. The aggregate version of SD converts quantities of vacant land into quantities of developed land in each TAZ in each year of the simulation, in response to the price signals from the AA module (higher rents indicating unsatisfied demand), and other demand signals that are region specific. In the SCAG region, there is both an aggregate SD model and a disaggregate SD model, with the disaggregate SD model not yet fully calibrated.

AA and SD work together with a spatial economic forecasting model of ED and TR to represent the state of a spatial economy over time.

Figure 3B.1 depicts the flow of information in the PECAS system. The system runs year-by-year. The ED module forecasts the size of the total economy given outputs from the AA module. Note that AA allocates by TAZ based on transportation system performance and the inventory of buildings and other space. Within the SD module, the inventory of buildings and space is modified per AA's price signals. The TR model develops measures of transportation system performance given the locations of business and household activity from AA.

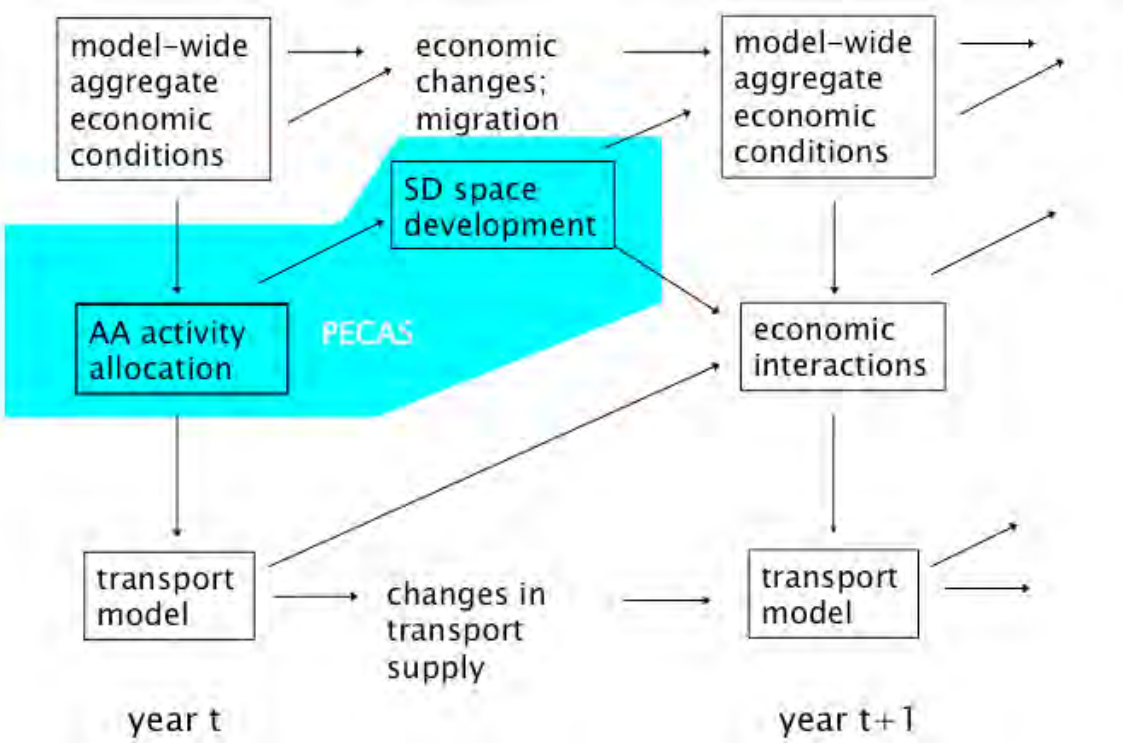

Figure 3B.1: Information flows in the PECAS framework

In the SCAG region, the PECAS model is currently operational with a simplified TR model, which relies on the skim matrices (average zone-to-zone travel time and distance by all modes including bus and rail transit, weighted by the ridership) produced by the regional travel demand model. The ED model is represented by forecasts, guided by a group of experts' economic outlook. The feedback process from PECAS to ED has not yet been established since, in SCAG's practice, the regional forecast is considered to be fixed during an RTP cycle.

3B.3. Modeling TOD and Displacement in PECAS

Rent in Modeling TOD using PECAS

In the context of TOD, it is generally expected that the lower-density and older uses will be replaced by newer, higher-density uses. Each of the housing categories shown in Table 3B.1 represents a range of densities, with the upper (and lower) value of floor area ratio constrained by both 1) the definition of the category, and 2) the zoning regulations that prohibit or allow specific ranges of densities.

Real estate developers modeled in the PECAS SD module are motivated by future profit, and thus are blind to specific social issues (e.g., race and ethnicity) and spatial issues (e.g., proximity to transit), *unless* those factors are included in the calculation of rent or construction costs. Such issues are more directly related to households' decision process and housing demand, which is modeled in the AA module. Within PECAS's general framework, TOD should directly impact rent in two ways: (1) in the AA module, via the estimation of the zonal average rent as the equilibrium market

clearing price, and (2) via the SD module, whereby parcel-specific rents are determined within a zone, depending on the local condition where the parcel is located.

Table 3B.1: Dwelling type categories in the SCAG PECAS Model

Dwelling Type	Description
ResType1-VL Luxury	Very low-density (acreage style homes, high value)
ResType2-VL Economy	Very low-density (acreage style homes, low value), includes rural mobile homes
ResType3-L Luxury	Low-density (subdivision style homes), high value
ResType4-L Economy	Low-density (subdivision style homes), low value
ResType5-MD Separate Entrance	Duplexes, attached single-family, townhomes
ResType6-MD Shared Entrance	3,4,5 or 6 units per structure
ResType7-Higher Density	More than 6 units per structure, but not high rise
ResType8-Highrise	More than 6 units per structure, high rise
ResType9-Urban MH	Mobile home in an urban area

Zonal Rent Impacts

The zonal average rent for each of the space types in each zone is calculated in the PECAS AA module (J. Abraham and Hunt 2007), based on the ability of people to depart from (or arrive to) the zone to exchange labor, goods, services, or other items of tangible or intangible value. The travel attributes are calculated in the SCAG transportation demand model and are used by PECAS to represent "how travel on the transportation system fulfills economic needs," such as travel to work to sell labor, travel to schools to obtain an education, and so on.

The zonal rent is established through a supply/demand relationship in the housing market, with households in the PECAS categories making location and housing choices to optimize their access to the labor markets (to sell their labor as a product of the household) and to goods, services, and other PECAS commodities (to buy and to consume), based on their chosen economic interactions. In their choice process, the "zonal attractiveness factor" is considered as representing a base attractiveness of a zone to the household based on the zone's categorization. This factor includes both economic and non-economic terms, but the existing SCAG PECAS model does not include any non-economic attractiveness term at this time. Typical economic terms—which are included in the SCAG PECAS model—are price of goods and services, travel impedance, and amount and variety of available commodities including transit services.

The economic terms for the PECAS's "zonal attractiveness factor" have been developed using two key data sources: (1) economic input-output tables, which show household consumption relationships, (2) and Census micro-sample data, which show labor force participation and housing choices in terms of dwelling size and type. It is not expected that an analysis of displacement data and literature will significantly contradict the spatial economic interactions that drive spatial behavior in the SCAG PECAS model. Therefore, further analysis of displacement data is not expected to add much value to improve rent estimation from an economic aspect. Of course, recalibration of the model upon the availability of better and more recent data should enhance the model.

However, as new data and information emerges, model updates may be warranted to reflect non-economic aspects of household choice behavior, particularly if these new findings might affect PECAS's rent model. In PECAS, the "zonal attractiveness factor" represents how certain types of households are drawn to certain neighborhoods independent of the housing and the accessibility provided by the transportation system, which is considered part of economic attractiveness. Social proximity effects, wherey households more attracted to neighborhoods with matching or desirable attributes of current residents, can be represented in these factors.

In the current SCAG PECAS model, household categories—denoted by income range and household size—are shown in the Table 3B.2. The empirical findings could be included as a zone-by-zone modifier to the zonal attractiveness measures to target households with certain characteristics as long the findings are in a form of specific quantitative metrics about how neighborhood attractiveness changes for households as a function of household attributes and neighborhood attributes.

Table 3B.2: Household Categories in the SCAG PECAS Model

Household Category	Income Range	Household Size
INC0010 2 or less	Less than $10K	2 or less
INC0010 3 or more	Less than $10K	3 or more
INC1025 2 or less	$10K ~ $25K	2 or less
INC1025 3 or more	$10K ~ $25K	3 or more
INC2550 2 or less	$25K ~ $50K	2 or less
INC2550 3 or more	$25K ~ $50K	3 or more
INC5075 2 or less	$50K ~ $75K	2 or less
INC5075 3 or more	$50K ~ $75K	3 or more
INC75100 2 or less	$75K ~ $100K	2 or less
INC75100 3 or more	$75K ~ $100K	3 or more
INC100150 2 or less	$100K ~ $150K	2 or less
INC100150 3 or more	$100K ~ $150K	3 or more
INC150m 2 or less	$150K or more	2 or less
INC150m 3 or more	$150K or more	3 or more

In the PECAS model, neighborhood attractiveness influences would have to be treated as average amounts for each of the above household categories, either model-wide or zone-by-zone. The method of aggregation could make use of the relationship between PECAS household categories and household attributes in the measured relationships. There are few data options to support the method. The census PUMS data provides the information to enable an aggregation based on regional relationships, or the synthetic population representation could be used to aggregate within specific TOD zones. Individual households and population were synthesized based on the controls of household size/income/housing type distributions, as well as population age/race/worker status at 11,268 TAZs for the base and planning years (2012, 2020, 2035 and 2040) of the 2016 RTP/SCS in various land use scenarios.

The most important aspect of using observed neighborhood attractiveness in the PECAS model is the monetization of attractiveness into an annual willingness-to-pay measure, since zonal attractiveness households in PECAS are currently measured dollars of annual expenditure. Statistical estimations in location choice models should include, as a variable, a measure of housing

cost as annual rent. Otherwise, the units will be ambiguous and not translatable into the PECAS context. There is currently no explicit representation of race or ethnicity in the SCAG PECAS model, and a statistically sound relationship of race/ethnicity composition to the annual willingness-to-pay as rent has not yet been established.

The SCAG PECAS model is being developed using an "agile and incremental" development approach (Beck et al. 2001). This means that SCAG is continuously interested in potential improvements to the PECAS model. Recommendations regarding adjustments or enhancements to the system of categorization of households in Table 3B.2 could result from the displacement study described throughout this report, especially as quantifiable measures of neighborhood desirability are a produced. A microsimulation version of the PECAS AA module is also planned, allowing additional socioeconomic variables or location variables to be included in utility functions, removing the need for zonal based variables. The study could recommend that SCAG adopt this PECAS enhancement.

Within-Zone Parcel Rent Adjustments (Local Level Effects)

Within each zone, certain parcels are more desirable for certain uses. PECAS uses a two-level hedonic model to modify parcel-level expected rents by development type to account for the characteristics of each parcel. This allows PECAS to represent particular parcel-specific development probabilities.

An example in the statewide model (as well as in the SCAG PECAS model) is the rent modifier that considers the distance to the nearest transit station. The average zonal rent estimated in the AA module based on economic and non-economic terms of attractiveness is further modified for each parcel and each space type, based on the distance to a major transit stop by multiplying factors from the shifted exponential function shown in Figure 3B.2.

Using the same distance to the transit station example, the distance to the transit service would have both positive and negative influences on rent, when all other factors are controlled. With ease of access to the transit service, the shorter distance from a residential parcel should be a positive impact on rent. But if the distance is too far, its influence diminishes. On the other hand, due to nuisance factors such as noise from train operation, shorter distance could negatively affect rent, but this negative influence also diminishes with distance. The adjustment factor to a parcel is 1 when the rent of the parcel is exactly the same as the zonal average, and its distance from the station is the "reference distance value" for local effect of g, RefDValue_g. The local effect factors are then modeled as increasing functions for positive influences and decreasing functions for negative influences of observable measures, such as distance to certain amenity or age of property (DValue_g) with one known point on the Figure 3B.2 of (RefDValue_g, 1). Negative values for θ_g in the exponential function result in values of $\text{LEFac}_{g,h}$ that decrease from 1 as DValue_g decreases from RefDValue_g to 0. Thus, rents decrease down from the zonal-level value as the effect gets closer to the parcel.

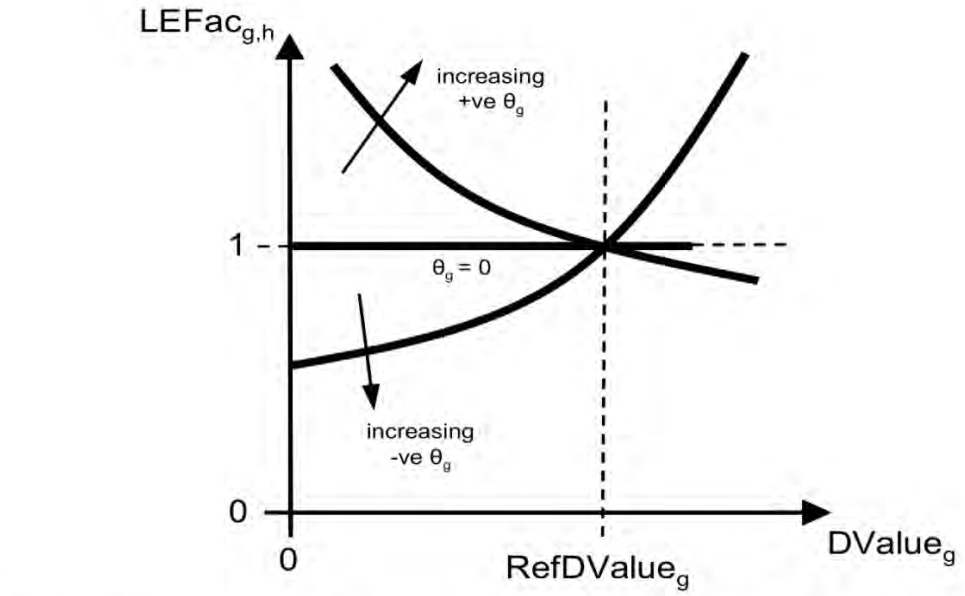

Figure 3B.2: Shifted Exponential Function used in Transit Local Rent Modifier

$LEFac_{g,h}$: Factor adjusting proportional change in rent for space type h as a function of values on dimension relevant for local-level effect g

$DValue_g$: Values on dimension relevant for local-level effect g. Typically this represents the distance from the parcel to the source of the local-level effect, the local-level density for the parcel, or the age of the space on the parcel

$RefDValue_g$: Reference value on dimension relevant for local-level effect g

θ_g : Parameter for function calculating values for $LEFac_{g,h}$

g : Index of local-level effects on rent

In the SCAG PECAS model, the coefficients were estimated locally, using Orange County data. Table 3B.3 shows the empirically estimated rent modifier function coefficient by household categories. Higher-density housing shows increased value within the zone when it is located closer than one mile from a major transit stop, while non-residential uses increase even more substantially. Within the single-family housing categories, the nuisance effects of proximity to major transit (noise, litter, traffic) at the sub-zone level causes rents to decrease (although rents could still increase in total due to the zonal average impact). See (Wang et al. 2011) for details regarding the technique and the estimations that were performed using 58,000 residential parcels, and statewide (California) GIS representations.

These local rent coefficients could be updated based on the findings from the literature review and analysis of this project that provides additional information about the localized impact on the desirability of developments (separate from the neighborhood effect). Any analysis of changing rent patterns that occur due to major transit development should be careful to separate neighborhood uplift effects from parcel-specific effects, and should attempt to classify rental properties using the above categorical definitions. In this way, the displacement study could provide a major enhancement to the SCAG PECAS model, by improving this representation of rental proximity effects, and hence improving the representation of housing demolition and reconstruction. In

general, the *a priori* expectation is as follows, and these hypotheses should be tested and confirmed with a rigorous statistical analysis.

Table 3B.3: Rent Modifier Coefficients in the SCAG PECAS Model for Distance to a Transit Station

Space type	RefDValue	θ
ResType1-VL Luxury	5280	-0.116
ResType2-VL Economy	5280	-0.116
ResType3-L Luxury	5280	-0.116
ResType4-L Economy	5280	-0.116
ResType5-MD Separate Entrance	5280	-0.116
ResType6-MD Shared Entrance	5280	0.056
ResType7-Higher Density	5280	0.056
ResType8-Highrise	5280	0.056
ResType9-Urban MH	5280	0.056
Manufacturing space	1320	0.993
Commercial High space	5280	0.713
Commercial Low space	2640	0.252

- Multi-family residents are protected from nuisance effects by the structure type (they may live on higher stories, do not have to maintain a yard, and can secure the outside entrance to the building in addition to the entrance to their own residential unit) and have already chosen housing that causes them to interact with others as they come and go from their residence. Thus, the households bidding for multi-family housing will place a much higher value on the reduced walking time to transit, over the privacy and nuisance effects of transit stations and multi-family dwellings near transit will have an increased value.

- Single-family residents are more affected by the nuisance effects of transit, yet still value the reduced walk time of the closer locations, so the effect of major transit station proximity on rent could be positive or negative depending on which element is stronger.

- Users of commercial space value the visibility and access to pedestrian and change-mode (park-n-ride, bus transfers) users, and, all other things being equal, should bid the rents in the closest locations higher.

The other local effect modifiers in the current SCAG PECAS model are:

- Distance from schools
- Distance from coastline
- Distance from major roads
- Distance from freeway link (negative effect primarily due to noise)
- Distance from freeway access ramp (positive effect, especially for commercial uses, due to access)
- Distance from parks (positive effect for residential uses)

Analysis of parcel-specific rents or parcel-specific desirability for specific uses should attempt to include (or control for) the proximity effects of these other variables. For instance, if a major transit facility is built on an existing road right-of-way, turning a former major road into a local road,

commercial rents along the right-of-way could decrease, as the positive impact of the transit stop could be more than offset by the negative impact of the loss of a major road.

Analysis of parcel-specific rents or desirability could also suggest additional proximity measures affecting rents, for eventual inclusion in an enhanced PECAS model. Adding or changing these local-level effect modifiers in the PECAS SD module is a potential stand-alone enhancement that could have high modeling value for a potentially reasonable cost.

Modeling of Displacement in PECAS

This section reviews types of displacement in focusing on the possible methods to incorporate in PECAS model. According to the previous research referenced in the project scope (Chapple, Chatman, and Waddell 2014):

> "Transit investment and TOD may result in either direct displacement, when residents are forced to move when new development replaces their housing units, or indirect displacement, which may occur as property values in the area increase due to its new desirability. Indirect displacement may be voluntary, if property owners elect to sell their residences (typically for a profit), or involuntary, occurring in any of three forms: (1) economic, in which housing becomes prohibitively costly (because of high rent or, outside of California, property tax increases); (2) physical, in which the landlord evicts the tenant or induces departure through harassment or persuasion; and (3) exclusionary, in which low-income and/or minority households no longer have the opportunity to move into the neighborhood."

This categorization of displacement provides the organizational framework for this section, explaining how the PECAS model in Southern California can represent displacement.

Direct Displacement

Direct displacement is defined as "when residents are forced to move when new development replaces their housing units." In PECAS, this category represents the demolition of existing housing units, potentially for two reasons: government demolition and private demolition.

<u>Direct Displacement due to Government Demolition</u>

Housing could be purchased for civic use and demolished by government authority. For example, housing can be demolished so the land can be used as a right-of-way for transit, for new access roads to transit stations, for park-n-ride transit lots, or for a new school provided together with new transit.

Since PECAS is designed to represent how the spatial economic and social economic system responds to government policy, the impact of forced displacement by direct government policy should be understood directly, analyzed outside of PECAS. Instead of letting the model decide future land use of the parcels in the TOD area, it is directly edited into the database for the SD module. In this situation, PECAS could be used to help understand how the system may adapt by the externally given land use change through second-order effects.

<u>Direct Displacement due to Private Demolition</u>

Housing can be demolished and replaced by private developers, who are pursuing the *Highest and Best Use* of existing land. The PECAS model for SCAG provides a direct representation of this

phenomenon, especially if the microsimulation SD module is calibrated and used. It contains a parcel-by-parcel representation of developer decisions, with developers motivated by expected future rent streams by type, age, and intensity of development. The space types in the SCAG PECAS model, representing types of development, are the same as in the California statewide PECAS model, and as Table 3B.1 shows. Within each category, the cost of constructing new space is calculated based on a commercial construction costing model, adjusted for zip code and for the slope of land (Circella et al. 2011).

Voluntary Indirect Displacement

Voluntary indirect displacement occurs if property owners elect to sell their residences. This category involves owner-occupied residences being sold for the benefit of the owner. The representation of this phenomenon in PECAS relates to the specific representation of rents, as already discussed in the previous section, direct displacement due to private demolition. The opportunities discussed in the section to better understand the TOD-related rent impacts in the context of demolition and redevelopment also apply to the understanding of voluntary displacement.

The PECAS model represents housing value as a rent stream regardless of whether housing is owner- or tenant-occupied, representing the direct rent paid by tenants and the opportunity cost of not renting forgone by owners. Typically, tenant vs owner analysis in PECAS has relied on the segregation by household income (Table 3B.2). Given the strong tendency of higher-income households to own their own homes, prior analysis along this dimension has been appropriately successful. Analysis of data for this category of displacement should attempt to understand the characteristics of households choosing to sell their homes to take advantage of upward rent pressures, to help assess the appropriateness of the existing income- and size-based classification system.

Owners usually have a longer-term mortgage with payments set based on purchase price. This allows them to make longer-term decisions, but they are less mobile in searching for a new residence than renters. The opportunity of increased revenue due to selling (or renting out) a residence with increased desirability may not be something that households are initially aware of, or initially consider, and because it represents an increase in value (rather than an increase in costs subject to a budget constraint), it does not force immediate lifestyle changes, or immediate decisions in a general equilibrium state of the economic system. The PECAS model has terms (called "inertia terms") that serve to adjust the rate of locational response, if it is shown through the displacement research that households who own their dwellings respond more slowly to increased housing value, the PECAS inertia terms could be adjusted.

Analysis of displacement data could support this household categorization, as long as the rates of response are highly correlated with income or household size in the manner represented in the current SCAG PECAS model. Or it could suggest a more detailed categorization, or supplementary variables to be included in a future microsimulation version of PECAS AA, when the rates of response are highly correlated with many different variables, which are not part of the current SCAG PECAS household classification variables. Statistical analysis presented in Chapter 2 show that race/ethnicity and housing tenure are important variables in the explanation of demographic changes near TOD areas of Los Angeles County. Unfortunately, the current SCAG PECAS model does not include those variables to represent households explicitly.

Involuntary Displacement due to Rent Impacts

This category of displacement is economically similar to the category above, "Voluntary Indirect Displacement," with the difference being that the residents of the household are not the owners of the residence. It is implied in the literature that this displacement is less desirable than voluntary displacement, because the displaced households do not themselves receive the benefit of property uplift.

In the current SCAG PECAS model, no tenure distinction is included. The location choice and space consumption behavior is mainly modeled by rent or rent-related accessibility, assuming the household mobility is already incorporated implicitly in the model by the income category as a proxy, owing to the high correlation between the proportions of renters and income category (from ACS PUMS 2007-2011 in SCAG region, it is 0.995). Such an assumption might be reasonable for the purpose of the current SCAG PECAS model, in which specificities are aggregated into totals or averages. But, if the model should be revised in a way to maintain the individual specificities, it would be desirable to expand the household classification given by Table 3B.2.

Involuntary Displacement due to Physical Evictions / Harassment / Persuasion

This category of displacement refers to non-market-based representations of displacement, with some person or entity forcing people out of the home. The general assumption is that landlords would be the ones trying to force out existing tenants, so that they can increase rents on new tenants or redevelop the property to a higher-profit use. From an economic theory perspective, this implies one of following:

- an "economic agent" who, by definition, acts on profit motivation, would simply increase the rent on existing tenants, and let them decide whether to leave or stay,
- an attempt by monopolistic landlords (or a landlord cartel) to change the character of the neighborhood due to perceived benefits (and eventual higher rents) associated with a dominant socioeconomic characteristic, or
- an undesirable tenant, whether due to landlord discrimination or tenant behavior.

The empirical research should explore, or potentially identify, situations where individuals felt compelled to leave. In the case when the compeller was a landlord, the research could explore why the landlord didn't simply raise rents. As this category of displacement is identified as a common one, different possible constrained choice frameworks should be investigated for future inclusion in an enhanced PECAS model. It can only be represented in the current SCAG PECAS model in a calculation (for calibration) of adjusted zonal specific constants, as discussed in the context of neighborhood rent in the section on Zonal Rent Impacts. This could be adequate to represent the non-economic attractiveness, but may not be adequate to represent the non-free-market motivations of this category of displacement.

Exclusionary Displacement

"Exclusionary Displacement" refers to situations where households no longer have opportunities to move into the neighborhood. This could be due to overly high rents as already discussed in previous sections, or characteristics of the neighborhood that make it less desirable to future residents. If this is not related to high rent, then the observed rent does not explain the composition of household characteristics in a certain community. Thus, the mechanisms for neighborhood desirability and exclusivity should be explored and quantified in terms of willingness-to-pay to

convert the effect of non-economic terms to economic. Any measures of willingness-to-pay in equivalent annual rent can be included in the PECAS zone specific attractiveness measures. For example, if an exclusionary characteristic of a zone causes low-income households to avoid the zone to the same degree as a $500 higher annual rent, this can be represented in PECAS directly for zones that acquire the characteristic, through a modification of the zonal attractiveness variable for low-income households by -$500.

Representing Displacement Mitigation Measures in PECAS

There are policies that can be undertaken to mitigate displacement by allowing existing residents (or new residents matching the income, ethnicity, or other characteristics of existing residents) to live in areas that are affected by improved transit service. Some examples are listed in this section, but other possibilities should be further identified to determine how they can be best represented in the PECAS model.

Low-Income Housing Tax Credit (LIHTC)

SCAG may consider a future enhancement to PECAS that adjusts the housing types in the model (Table 3B.1) to separate LIHTC properties from other properties. In general, space types in PECAS represent physically different types of space, but the LIHTC works through the investment and capital formation phases of development. Since abandoning LIHTC status in favor of renting to higher-income households affects developer profitability as represented through the corporation or investor syndicate, this program is also best represented in PECAS's SD module.

Any program under consideration that impacts developers' costs in a conditional-use way, so that the housing is classified and its use or tenancy is restricted in the future based on the payments or fees at the time of development, are best represented as enhancements to the housing categorization in the SD module. However, this must be balanced against the availability of data to accurately represent such housing.

Changes to Rent Stabilization Ordinance, Ellis Act, and the like

Rent controls in a city affect the ability of landlords to increase rents. This limits the response of the market to changes in desirability induced by the improved transit services. The Ellis Act allows building owners to evict tenants if they wish to demolish their building or change its use. Any proposed changes to these or similar ordinances could be analyzed with the existing PECAS model as they are targeted towards housing types in Table 3B.1 or household types in Table 3B.2.

Future enhancements to PECAS's household categorizations (Table 3B.2) should be necessary as housing is built that restricts particular households from occupancy. For instance, if a program of providing housing without any on-site parking in the vicinity of major transit stops is being considered, further household category segmentation based on auto ownership should be included. Programs based on racial or ethnic characteristics are unlikely to be proposed due to anti-discrimination laws, so housing supply policies are unlikely to suggest further segmentation of household categories based on race and ethnicity variables. Despite this, however, the effectiveness of the policy may not be diminished due to the certain existing conditions. To better analyze impact of policy, future versions of the SCAG PECAS model need to be flexible enough to incorporate various household types.

Enhancements to housing type categories (Table 3B.1) could reflect any revealed market segmentation variables that cause differences in rents and opportunity costs. For example, dwellings that can freely and easily be converted from owner-occupied to tenant-occupied dwellings could continue to share a category (since owner-occupiers are clearly foregoing a rent stream through their occupation) while dwellings that are required, through agreement or legislation, to remain tenant-occupied, could be included in a separate categorization.

3B.4. Representation of Empirical Research Findings in PECAS

This section describes the use of the model to represent displacement in the SCAG region, in the context of the empirical research findings. The method presented in this section demonstrates the possibility of further calibration of the SCAG PECAS model to better represent the impact of TODs on displacement when new findings are available without requiring a major re-framing of the model.

Findings Reported

The PECAS modeling team was tasked with incorporating the empirical results from Chapter 2 into the existing regional forecasting and policy analysis models. It was also tasked with considering adjustments and enhancements for future model versions.

For the Southern California region, the primary empirical research made available to the PECAS modeling team took the form of a regression equation relating the changes in 2,224 census tract-level attributes in Los Angeles County between the years 2000 and 2013, to census tract attributes from the year 2000. These results are shown in Table 2F.2. We present them again in Table 3B.4 below, since the remainder of this section relies heavily on the regression coefficients presented. Table 3B.5 defines terms shown in Table 3B.4.

Table 3B.4: Effects of neighborhood characteristics on neighborhood change

	Δ LTHS	Δ BA+	Δ NHW	Δ Renter Burden	Δ Low-Income HH (<10K)	Δ High Income HH (<125K)	Δ Median HH Income	Δ Gross Rent
Constant	-5.544 ***	3.230 *	-19.66 ***	-4.181	2.129	2.938	6006.842 *	266.135 ***
Median Household Income (/10,000)	1.212 ***	0.137	0.11	1.333 ***	0.366 **	-0.841 ***	-410.652	28.163 ***
Median Household Income Squared	-0.049 ***	-0.003	0.03 ***	-0.049 ***	-0.022 ***	0.016 **	-75.488 ***	-2.745 ***
% Asian	-0.034 ***	0.021 **	0.08 ***	0.024	-0.039 ***	0.001	-40.271 **	-1.875 ***
% NHBLK	-0.006	-0.036 ***	0.12 ***	0.055 ***	-0.024 ***	-0.038 ***	-88.725 ***	-1.246 ***
% Hispanic	-0.108 ***	-0.055 ***	0.09 ***	0.120 ***	-0.011 *	-0.044 ***	-95.379 ***	-1.240 ***
Downtown TOD	-4.975 ***	9.028 ***	11.31 ***	-3.361	-4.596 ***	1.591	7703.347 **	166.895 ***
Other TOD	-0.440	0.897 **	1.42 ***	-1.186	-0.696 **	0.611 *	2679.065 ***	17.775
% Renters	-0.023 **	0.045 ***	0.13 ***	0.057 ***	-0.008	0.017 **	0.671	0.184
Δ Gross Rent	-0.003 ***	0.005 ***	0.00 **	0.006 ***	-0.003 ***	0.004 ***	9.520 ***	- -
Adjusted R-Squared	0.359	0.133	0.258	0.071	0.055	0.144	0.279	0.156
n	2,224	2,224	2,224	2,224	2,224	2,224	2,224	2,224

***<.01 **<.05 *<10

Parameters with a p-value of > = .10 are not denoted with asterisks

With the exception of change in gross rent and median household income, all other changes represent percentage point changes

Values for gross rent and median household income are in 2013 dollars

Data Source: 2000 Census, 2009-2013 5-year ACS

Tabulations by P. Ong & C.Pech

Table 3B.5: Legend of measured effects from Table 3B.4

Effect	Meaning
Δ LTHS	Change of proportion in individuals with less than high school education
Δ BA+	Change in percent non-Hispanic black
Δ NHW	Change in percent non-Hispanic white
Δ Renter Burden	See Chapter 2 Sections E and F for the definition
Δ Low-Income HH (<10K)	Change in percent low-income households, adjusted to inflation to less $10,000/year 2013 dollars income
Δ High-Income HH (>125K)	Change in percent high-income households, adjusted to inflation to more than $125,000/year 2013 dollars income *
Δ Median HH Income	Change in median household income, inflation-adjusted to 2013 dollars
Δ Gross Rent	Change in average gross rent paid per month, inflation-adjusted to 2013 dollars

The regressions controlled for accessibility via a variable that measured location within a transit station area. However, they did not analyze changes in accessibility provided by the transportation network operations over time, and so have a limited ability to explain how transportation infrastructure and services impact the socioeconomic arrangement of households in the region. Also, PECAS would benefit from information on real estate development for recalibration of the SD. Overall, however, the very strong statistical significance of some of the coefficients shows correlations that could be represented in regional land use models, in particular, as the causal nature of the correlations can be explained through further investigation.

Implications of Findings on PECAS Model Scenarios

For modeling TOD and possible subsequent displacement in the SCAG PECAS model, it was anticipated that the fine representation of the detailed development pattern would focus on the PECAS SD module, representing developers' attempt to provide appropriate housing types and densities in desirable locations, within the constraints of zoning, to maximize profits (J.E. Abraham et al. 2015b). However, the empirical analysis presented in Table 3B.4 is more focused on neighborhood-level changes over 13 years. As a result, the PECAS AA module is more appropriate to be updated.

Households are represented in the PECAS model using an aggregate categorical system, as shown in Table 3B.2. Categorizing households in this way—by income and size—makes it possible to link them to economic information via economic input-output tables, which is why this categorization method was chosen for both the SCAG PECAS model and the statewide version of PECAS. The division into income categories is based on the earnings and expenditure patterns of households, as well as their participation in different labor markets according to the predominant wages paid in different occupational categories. The partition into size categories is done specifically to represent the consumption of different housing types/rates in the real estate model, the differing trip rates per household in the travel model, and to further support the spending and consumption patterns on a per-capita (rather than per-household) basis.

Mechanism for Representing Displacement in PECAS

We stated above that the quantitative metrics about how neighborhood attractiveness changes for households is a function of household attributes and neighborhood attributes and could be included as a zone-by-zone modifier to the zonal attractiveness measures in the PECAS AA module.

Instead of the empirical results that are presented as zonal attractiveness measures, it showed the changes in the rent and income distribution around TOD zones (separated into Downtown and Other TOD zones), controlling for other influences, and thus implying that the TOD nature of the zone caused such changes. Changes in zone-by-zone modifiers for each household category were planned to best reproduce the reported shift in neighborhood characteristics.

Scenario Development and Calibration

Parameter Change Methodology

The overall approach was to develop a small set of parameters for the SCAG PECAS model that represent the effect of TOD on housing location choice in a simple but realistic way. This was done using linear relationships that modify the utility constants on each zone for each household type (distinguished by income level and household size). These parameters were then calibrated so that they reproduced the currently representable findings from the empirical research.

The pool of parameters to calibrate was based on the following conceptual relationships:

- TOD makes neighborhoods more attractive in general because of the improved accessibility.
- TOD has a greater attractive effect on higher-income households when expressed as a monetary value because money is less valuable to them. They are willing to pay more for amenity value because they can afford it, e.g., they have a higher value of time in transportation.
- In addition, households with fewer members could be more or less attracted to TOD than those with more members, due, for example, to differing preferences for housing types and different labor force participation rates.

To represent these relationships, three types of parameters were examined:

- a constant utility adjustment applied to all household types equally,
- an income-sensitive utility adjustment applied to each household type in proportion to its income, and
- a “small household” utility adjustment that applied only to household types with one or two members.

Each of these parameter types had one variant for downtown TOD and another for non-downtown TOD, for a total of six parameters.

Thirteen model scenarios were formulated with different combinations of these parameters to test their ability to help match the correlations in the metrics from Table 3B.4. Based on the results of these test runs, the “small household” utility adjustments were dropped because they had a minimal impact on the metrics, while the income adjustments were coalesced into one parameter for both downtown and non-downtown TOD areas. This left three parameters to calibrate:

- a downtown TOD constant for all household types,

- a non-downtown TOD constant for all household types, and
- a household income TOD adjustment.

Once the values of the three parameters are chosen, the following formula produced the changes in the utility constants for each zone needed to represent the effect in the SCAG PECAS input files:

$$K_{zh} = p_{DTz}k_{DT} + p_{NDz}k_{ND} + (p_{DTz} + p_{NDz})i_h s$$

where K_{zh} is the value added to the zonal utility constant for household type h in zone z;
p_{DTz} is the percentage of zone z that is in a downtown TOD area, while p_{NDz} is the percentage that is in a non-downtown TOD area, to translate census tract TOD binary categorical variables into portions of PECAS LUZ Zones;
i_h is the midpoint of the income range represented by household category h;
k_{DT}, k_{ND}, and s are the downtown constant, non-downtown constant, and income adjustment.

The calibration runs were then made and the differences in various metrics from the base condition were calculated. Table 3B.6 shows the metrics used in the calibration process.

Table 3B.6: Metrics used to calibrate TOD scenario

Metric	Description
DT % low-income	Change in the percentage of the households that are low-income in the downtown TODs
DT % high-income	Change in the percentage of the households that are high-income in the downtown TODs
DT median income	Change in the median income of households in the downtown TODs
DT average rent	Change in annual rent in the downtown TODs
ND % low-income	Change in the percentage of the households that are low-income in the other TODs
ND % high-income	Change in the percentage of the households that are high-income in the other TODs
ND median income	Change in the median income of households in the other TODs
ND average rent	Change in annual rent in the other TODs

The differences in these metrics were compared to the changes found by the empirical research. By changing one parameter at a time, the approximate effect of each parameter on the metrics could be calculated. A least-squares optimization was then solved for the best set of parameter values to use. Each metric was weighted according to its statistical significance in Table 3B.4. The metrics with a correlation significant at $p < 0.01$ were given the highest weight, while those at $p > 0.1$ were given the lowest weight. In addition, the "average rent" metrics were given lesser weights than their significance would imply, since a price investigation revealed unreasonably high residential space prices for some uncommon space types in many zones of the SCAG PECAS model. Insisting on an accurate match on the rent metrics would distract from matching the more reliable income-based metrics.

Description of Calibration Scenarios

Six of the 13 calibration scenarios are described here. They are the ones that were relevant to finding the final set of parameter values. The scenarios are:

- **The constrained base scenario.** This scenario was done in the way that is normal for the base year in a SCAG PECAS time series run: the number of households in each zone was constrained to be equal to the observed amounts to establish the zonal constants. It represents the control case that does not account for TOD and its effects on the neighborhood income mix.

- **"SDBU", the unconstrained base scenario.** This model run was designed to reproduce identical results to the constrained base scenario, but without the option to constrain the allocation to the controls. Instead, the zonal constants found in the constrained base scenario were given to the SCAG PECAS model as a direct input, to open up the possibility of changing these constants in future scenarios. Since no adjustments were made to the zonal constants in this run, it represented the case where all three parameters were zero ($k_{DT} = 0, k_{ND} = 0, s = 0$).

- **Test scenario 1: downtown TOD constant.** This run was the same as the unconstrained base scenario, but with a constant of $10,000 added to each zone containing the downtown TOD, in proportion to the fraction of the zone that is located in the downtown TOD. This constant would make all households willing to spend an extra $10,000 per year on living expenses in order to gain the accessibility benefits of locating in a downtown TOD neighborhood. The choice of this number was somewhat arbitrary, since it served only for exploration purposes and was not intended to be realistic. The other two parameters were zero ($k_{DT} = 10{,}000, k_{ND} = 0, s = 0$).

- **Test scenario 2: non-downtown TOD constant.** This scenario had a constant of $10,000 added to zones containing non-downtown TOD zones, in proportion to the fraction of the zone located in the non-downtown TOD. The other two parameters were zero ($k_{DT} = 0, k_{ND} = 10{,}000, s = 0$).

- **Test scenario 3: income adjustment.** This scenario had an income adjustment of 0.2, representing each household being willing to pay an extra 20% of its income to locate in a TOD neighborhood. The other two parameters were zero ($k_{DT} = 0, k_{ND} = 0, s = 0.2$).

- **"SD10": Scenario with optimal parameters.** This scenario used the parameter values found from the least-squares optimization; as discussed below, these values were $k_{DT} = -3{,}110, k_{ND} = 2{,}530$, and $s = 0.0176$.

Parameter Exploration

For each of the above scenarios, the eight metrics were calculated, with the differences between the metrics for each test scenario and those for the unconstrained base scenario. Table 3B.6 defines the metrics for the unconstrained base scenario and the test scenario. Table 3B.7 shows the changes caused by the parameter values in the test scenarios, i.e., the difference between the metric in the test scenario and that in the base scenario. With the addition of $10,000 to downtown TOD zones, Test Scenario 1 shows an increase of high-income households to 6.56% from 4.93% in the same zones. Interestingly, this additional utility in the downtown TOD area also affects the proportion of high-income households and median income, as well as the average rent in the non-downtown TOD zones. On the other hand, the SCAG PECAS model responded very little to the additional utility in the non-downtown TOD zones of Test Scenario 2.

These differences are compared to the empirical values, which are derived from Table 3B.4. Since all of the scenarios were run for one year, while the targets were calculated from changes between 2000 and 2013, the targets were divided by 13 for the comparisons. It would be desirable to extend this approach to a run over time, so that the parameters could be increased in each successive year to simulate the long-term effects captured by the empirical findings.

Table 3B.7: Results of the parameter test scenarios

Metric	Unconstrained base	Test Scenario 1: Downtown constant	Test Scenario 2: Non-downtown constant	Test Scenario 3: Income adjustment
DT % low-income	32.69%	30.22%	32.86%	32.71%
DT % high-income	4.93%	6.56%	4.69%	4.89%
DT median income	$15,003	$18,049	$14,780	$15,007
DT average rent	$4,149	$4,408	$4,232	$4,170
ND % low-income	14.29%	13.45%	14.29%	14.39%
ND % high-income	14.16%	15.85%	14.15%	13.79%
ND median income	$41,704	$44,844	$42,217	$41,986
ND average rent	$5,237	$5,502	$5,239	$5,329

The size of the effects from Table 3B.8 provides an estimate of the derivative (or marginal differences) of each metric with respect to each parameter. From these results, a set of optimal parameters were derived using a least-squares optimization. In this optimization process, the targets were given tolerances (desired closeness of match) based on the statistical significance of the correlation found between that outcome and the presence of TOD.

Table 3B.8: Effect of parameter changes compared to the empirical targets

Metric	Unconstrained base	Test Scenario 1: Downtown constant	Test Scenario 2: Non-downtown constant	Test Scenario 3: Income adjustment
DT % low-income	-2.48%	+0.17%	+0.01%	-0.35%
DT % high-income	+1.63%	-0.24%	-0.03%	+0.12%
DT median income	+$3,046	-$223	+$3	+$593
DT average rent	+$259	+$84	+$21	+$13
ND % low-income	-0.84%	-0.01%	+0.09%	-0.05%
ND % high-income	+1.69%	-0.00%	-0.36%	+0.05%
ND median income	+$3,139	+$513	+$282	+$206
ND average rent	+$265	+$2	+$93	+$1

The approach for the weights was to assume that the parameter effect was a Gaussian random variable with a mean equal to the target and a standard deviation equal to the tolerance. A tolerance was chosen so that the chance of this random variable reaching zero (and therefore the correlation does not actually exist) was equal to the stated p value. For example, at the $p < 0.01$ statistical significance level of the empirical study, the tolerance was set to about 43% of the

absolute value of the target, since at that standard deviation, the probability of the target reaching zero was about 1%. The targets that showed no statistical significance were assumed to have a p value of 0.3.

In addition, the tolerances on the rent targets were multiplied by 15, since the rents produced by the current SCAG PECAS model were not believed to be reliable. The resulting tolerances are shown in Table 3B.9.

Table 3B.9: Change resulting from the optimal parameters

Metric	Empirical target	Tolerance	Actual change
DT % low-income	-0.35%	0.15%	-0.27%
DT % high-income	+0.12%	0.23%	+0.21%
DT median income	+$593	$360	+$338
DT average rent	+$13	$83	+$2
ND % low-income	-0.05%	0.03%	-0.05%
ND % high-income	+0.05%	0.04%	+0.06%
ND median income	+$206	$125	+$188
ND average rent	+$1	$39	+$46

The actual changes in the metrics produced by these parameters are also shown in Table 3B.9. As expected, the changes of rent were not close to the targets, although they had the correct sign. However, the other metrics showed a good match to the targets. Therefore, the method outlined in this section is a viable way to reproduce the empirical effects of TOD on neighborhood change.

The optimal parameters derived from this approach were: $k_{DT} = -3{,}110$, $k_{ND} = 2{,}530$, and $s = 0.0176$. Households, in general, were willing to spend $2,530 per year to locate in a non-downtown TOD, $3,110 to *avoid* a downtown TOD, and 1.7% of their income to locate in any TOD.

The parameters in the PECAS AA model inputs are constants by zone type (TOD, Downtown TOD), which are then modified in an alternative scenario based on the optimal "meta parameters" discussed above. The changes in the PECAS model inputs are shown in Table 3B.10.

Table 3B.10: Changes in Zone Constants

Household Category	DT TOD Mod	Other TOD Mod
INC0010 2 or less	-3,019.27	2,616.29
INC0010 3 or more	-3,019.27	2,616.29
INC1025 2 or less	-2,799.27	2,836.29
INC1025 3 or more	-2,799.27	2,836.29
INC2550 2 or less	-2,447.28	3,188.28
INC2550 3 or more	-2,447.28	3,188.28
INC5075 2 or less	-2,007.29	3,628.27
INC5075 3 or more	-2,007.29	3,628.27
INC75100 2 or less	-1,567.30	4,068.26
INC75100 3 or more	-1,567.30	4,068.26
INC100150 2 or less	-907.32	4,728.24
INC100150 3 or more	-907.32	4,728.24
INC150m 2 or less	-27.34	5,608.22
INC150m 3 or more	-27.34	5,608.22

In this section, a set of parameters was estimated for the SCAG PECAS model to best reproduce the empirical findings on changes of households by income category, median household income and gross rent in downtown TOD and non-downtown TOD areas. For the zones identified as TOD zones, the zonal accessibility factors in the AA module were updated during its run with the parameters in Table 3B.10 for each household category. For downtown TOD zones, the annual changes of low and high-income households are -0.3% and +0.2%, respectively. For non-downtown TOD area, the annual changes of low and high-income households are -0.05% and +0.06% respectively, as Table 3B.9 shows.

This study did not attempt to incorporate the existing conditions, such as proportion of Asian or black, or proportion of renters. It could be possible to calculate the willingness-to-pay rent depending on the zonal conditions with racial/ethnic proportion in year 2000, just as demonstrated in this section. However, it would be more desirable to be able to update such conditions with endogenous variables and express displacement through the relationship between variables, rather than keep referring to a fixed set of input data. To make this possible, fine-scaled household/population segmentation is required.

In spite of the limitation of being incapable of dealing with existing conditions, the updated SCAG PECAS model with the optimized parameters still gives an opportunity to examine system-wide changes. Although the SCAG PECAS model is not able to pinpoint the origin of the 0.2% high-income households who relocate in the downtown TOD area, it shows changes of households by income/size categories and cascading effects from all of the zones in the region. The following section briefly summarizes the zonal differences created by inclusion of the TOD-related parameters. Appendix Q summarizes the region-wide impact of TOD by household types, industries, and housing types.

Displacement Impact

This section analyzes the region-wide zonal changes of household location and rent estimated by the updated SCAG PECAS model with and without the TOD-related parameters. The model run with this optimized set of parameters is labeled “SD10.” The equilibrium state estimated by the SD10 scenario is compared to the unconstrained base scenario, called “SDBU.” The difference of the two states is caused by the parameters estimated from the empirical findings of Table 3B.4, which shows the displacement as the changes of household proportion by income group.

Location Changes

The calibration of model behavioral constants described in the previous section was able to reproduce the change in income that occurred in the TOD zones. Average incomes in TODs went up compared to the model run SDBU, without TOD consideration, and the percentage of people in TODs who are low-income went down, as Table 3B.9 shows in the “Actual Change” column. However, Table 3B.4 also shows that the absolute number of low-income households in TODs generally went up, even though the percentage went down, with the exception of the low- to middle-income groups (0 to $75K). They are being reduced in the downtown TOD zone, as Figure 3B.4 shows. It is also shown that the reduction in the downtown TOD zone is severe (colored by dark red) for households with less than $10K income and of small size, and $10K-$25K income and of large size.

Note that SDBU, the "without" TOD version of the SCAG PECAS model, is also calibrated to the zonal household statistics by income and size categories. In the calibrated "with" TOD version (SD10 in the previous section), the estimated household location deviates from the target statistics. Two separate attempts were made to get the SCAG PECAS model to calibrate, one with targeting of a snapshot of household location in the region, and another one to match the marginal changes in the TOD zones. And the latter one contradicts the former effort. In the ideal situation, the introduction of the TOD-related parameters should maintain the previously calibrated household location, and still should be able to show the marginal changes over simulation time. Along with an "agile and incremental" approach, a comprehensive strategy should be devised to calibrate the model to reproduce not only a static snapshot, but also marginal changes.

Spatial Changes in Rent

The spatial changes in rent for the "L Luxury" category (ResType3) and "L Economy" (ResType4) are shown in Figures 3B.5 and 3B.6. There are increases in rent in most of the TOD zones, but decreases in rent in the non-TOD zones.

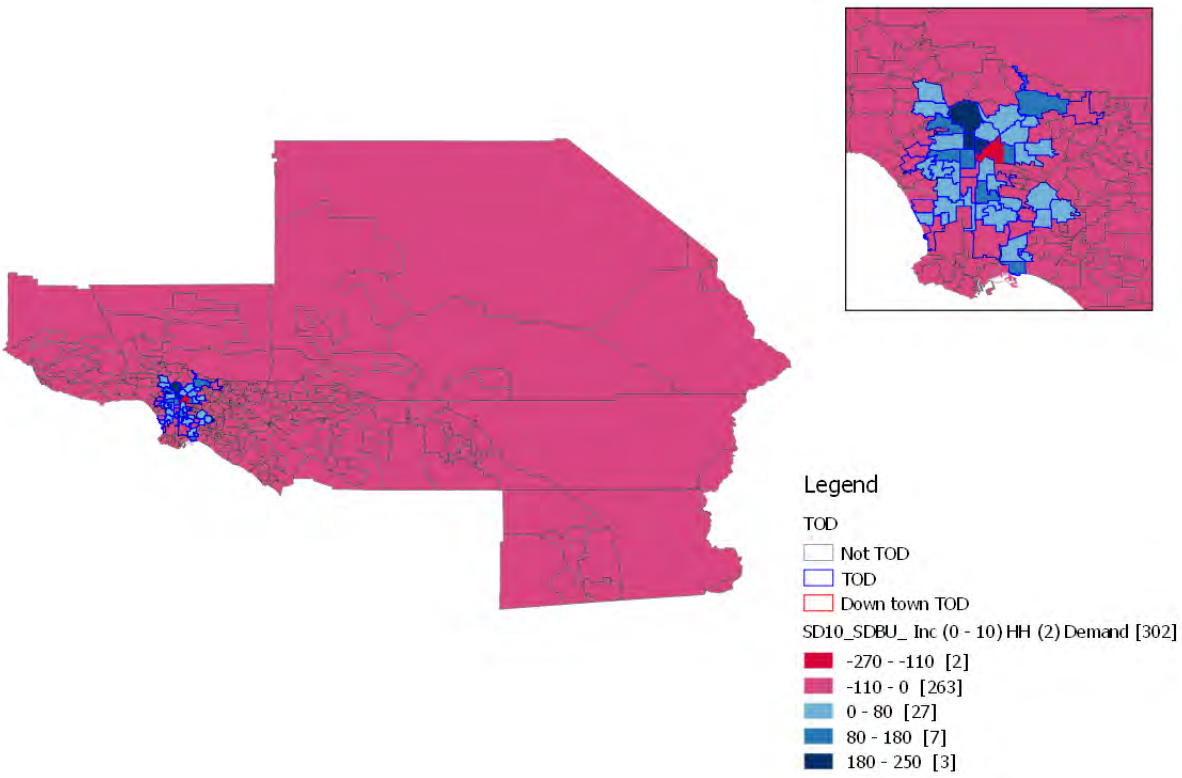

Figure 3B.3: Change in number of households <10k, 2 or less person

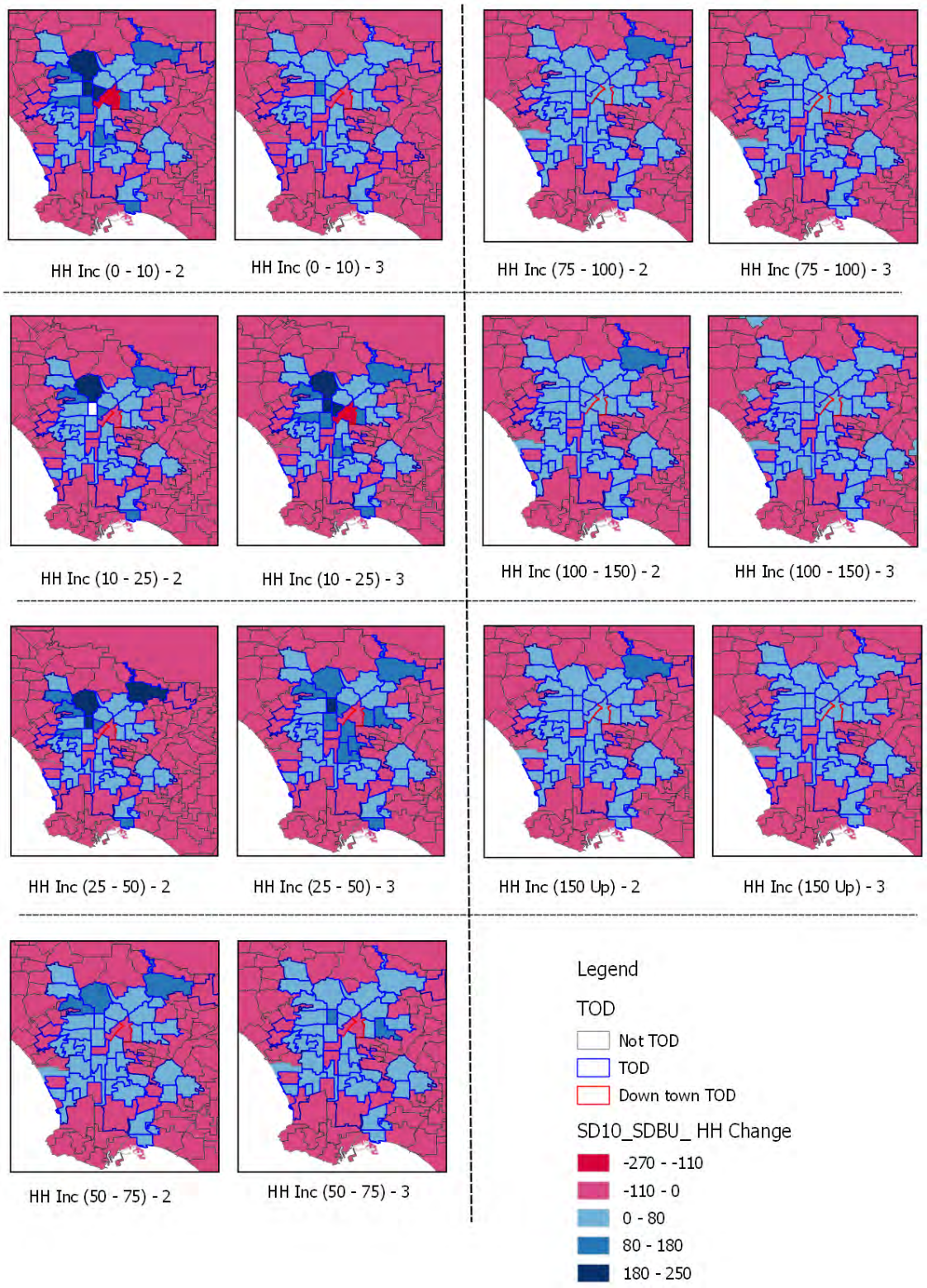

Figure 3B.4: Change in Households by Category and Zone

The shift in the demand for location towards TOD zones allows for an overall decrease in housing prices in the region with a corresponding benefit to residents and loss to landowners. However, the increase in some TOD zones is much larger than the decreases elsewhere, and hence much more likely to be measureable and noticed. When TODs are envisioned and developed, the region-wide impacts on rent must also be considered, since they mitigate the TOD-specific changes in rent, and may be larger in aggregate to the region but smaller in each location.

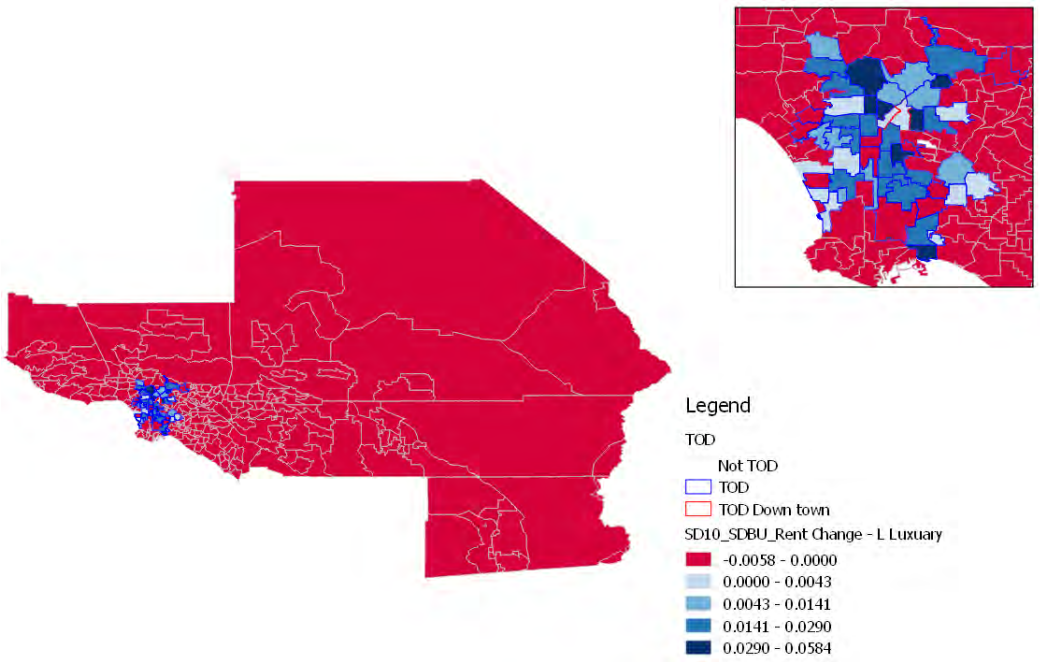

Figure 3B.5: Relative change in rent in Luxury Single Family Dwelling space (ResType 3)

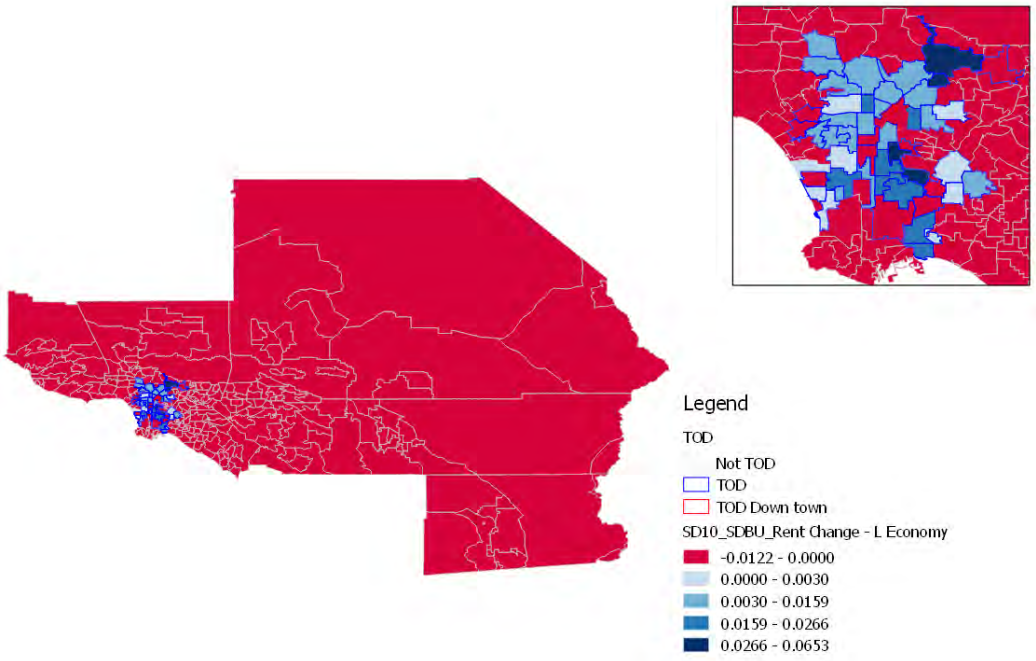

Figure 3B.6: Relative change in rent in Economy Single Family Dwelling space (ResType 4)

3B.5. Findings and Conclusions

SCAG PECAS Update and Findings from TOD Scenario

This work explored possibilities for representing TOD and displacement in the SCAG PECAS model, and it proved challenging. The current model design could best represent the real estate development nature relating to TOD as developers demolish, convert, and build housing (or non-residential space) near major transit stations. PECAS, then, represents displacement as the difference of states estimated from with and without TOD-related parameters. Further empirical research on real estate development, especially with a behavioral framework analysis of developer profit motive, could lead to a very rich representation of displacement in the SCAG region in terms of physical changes anticipated in planned TOD areas.

The SCAG PECAS model was modified to best represent the empirical findings regarding displacement around TOD zones that occurred between 2000 and 2013. The attractiveness of the TOD zones was changed for households, with a search process determining the optimum set of parameter shift strategies to represent observed changes (divided by 13 to annualize) in TOD zones in the percentage of low-income households, percentage of high-income households, median household income, and gross (and then) average rent. This scenario was compared to the base scenario to determine the impacts on the spatial economy.

A shift in the desirability of TOD zones brings about changes in the distribution of households in the region. As Figures 3B.5 and 3B.6 show, rent outside of TOD zone decreases as the demand for housing in TOD zones is generally increased. The increase of rent in TOD zones and the decrease in non-TOD zones result in positive net change in rent; in other words, regional net rent increases. In the updated model, the TOD-related parameters work as an increasing factor of rent in the TOD. Within the closed economic system (aka, the input-output analysis framework) that characterizes the SCAG PECAS model, the rent increase in TOD zones is interpreted as a positive direct impact without any leakage to outside the region. Also, its multiplied impact (again, as of Input-Output framework) cascades to every household in the region. Analysis of aggregated economic impact has been traditionally used as one of the most important measures in evaluation of various facility or land use plans. The current SCAG PECAS model shows that TOD in Los Angeles County is economically desirable to every household in the region.

However, this may be an overly simplified assertion in the modeling of displacement. Even at the zonal aggregated level, households of certain types are moving out from the downtown TOD zone, and the resulting rent of certain type of residence decreases as modeled with fixed real estate inventory. Although the total of their surplus or composite utility might be increased, this is not the case for a small group of households, and the degree of negative impact to them might be very acute. Parting from its initial design specification, the SCAG PECAS model might need a radical update so that it can scrutinize the difference in susceptibility to policy at the micro level.

Caveats and Cautions in Interpreting the TOD Scenario

The scenarios developed here do not include a representation of shifts in developer behavior. The magnitude of observed change in the empirical study was reproduced in the cross sectional portion of the SCAG PECAS model through attractiveness measures to draw households into TOD zones. Without the enabling effect of shifts in development, the attractiveness measures would be too

high. Thus, the total benefit measures calculated may be too high, and the absolute magnitude of those benefits may be overstated.

The proper consideration of transport costs requires a time-series scenario run with full integration with one of the SCAG travel models. This study approximated the improved desirability of TOD zones through a constant neighborhood effect, but the direct travel improvements from transit services would be better represented in changes in the "skims" calculated from the travel demand model. The suggestion in the scenarios that TOD development could lead to higher travel costs for obtaining household services is based on location (home and destination) changes only; a travel model is the appropriate tool for further investigating this concern.

Consideration for Next Steps

The monitoring and future empirical analysis of TOD in the SCAG region should be expanded to incorporate the motivating factors of developers: notably the costs and profitability of different types of buildings on land with different conditions such as land classified by spatial regulations, fees, and physical geography effects influencing construction costs. Housing desirability, and hence developer profitability, of different building options vary with the exact location. The analysis should include a numerically specific representation of the impact on rent (or willingness pay for housing) of proximity to transit station entrances, transit infrastructure noise effects, and other statistically important effects such as proximity to freeways, parks, beaches, and major arterial roadways. The specific approaches described in (Wang et al. 2011), where California statewide data was used, should be expanded into a time-series analysis with a focus (or oversampling) on changes in the vicinity of transit stations.

The model scenarios developed here show that the undesirable displacement of low-income people from around TOD stations could be the result of changes that are beneficial at the aggregate level to other households. Wealthy people have more freedom and economic power, and so they can take advantage of changes in situations more easily. Their shifts in behavior, however, may open up other opportunities, which low-income people who are sensitive to price changes may be able to take advantage of. Displacement of people of certain ethnic groups could not be analyzed with the current SCAG PECAS model.

The empirical research and the model categorize households by their income. It was found that TODs tend to be associated with higher incomes in the future. This modeling result could happen due to higher-income households moving into TODs, lower income households moving out, or upward mobility. Future empirical research in the SCAG region should attempt to address these possibilities, through panel analysis of TOD residents, or through retrospective surveys of current residents. Time-series census tract data is not generally adequate to identify these possibilities (although the ACS geographic mobility question has proven somewhat useful).

The household-level categorization in the SCAG PECAS model should be refined to add representation of race and ethnicity. The empirical findings showed correlations between race and ethnicity variables over time, and causal hypotheses could be explored using a PECAS model that includes race/ethnicity and housing tenure. Even though current empirical study suggests adding these variables, a more vital improvement would be focusing on making the SCAG PECAS model more flexible. Its tight theoretical structure and use of input-output (and social accounting) matrix makes it hard to expand PECAS to include non-economic variables. Enhancing the flexibility of

PECAS requires fundamental change in the model structure, which would require considerable time and resources.

A few options for expanding the household classification could be explored, including options to incorporate the variables suggested by the empirical study, and options for restructuring the model. Table 3B.11 summarizes the pros and cons to be considered.

The first option is to expand the dimension of household classification in the SCAG PECAS model to three or more from the current 2 dimensions of [7 income group]-by- [2 size group]. In addition to 4 to 7 groups for race/ethnic variables, 2 housing tenure groups (owner/renter) can be considered. Although this is one explicit way to incorporate the empirical findings' variables, the model's flexibility is not improved. In the case when a new finding points to another important variable, the same discussion should be repeated. In the incorporation of the variables mentioned above, the model should be recalibrated for at least 112 (= 7 * 2 * 4 * 2) household types; the scope of that task would be virtually identical to a fresh development of PECAS for the region. Another aspect to be considered is that a change in household classification from the current version also means that the SCAG version would diverge from the statewide one, and there would be no more direct cooperative relationship in its development.

A microsimulation version of the PECAS AA module is the one of the options, respecting the same PECAS utility function, to enable specific coefficient modifiers in the PECAS utility functions for different races and ethnicities, without drastically expanding the number of categories represented in the model. However, adopting microsimulation without caution and respect for the type of analysis undertaken here, and the economic foundations of PECAS, could weaken the ability to show comprehensive distributions of benefit measures by type of household, interaction, location, housing type, etc. Since this option radically changes the model structure as well as the software implementation, existing microsimulation tools should be considered with an open mind. Even though the model structure would be different from the existing one, a new microsimulation model could use data similar to what is already collected for PECAS. Therefore, instead of developing new software with an updated model formulation of PECAS, a fresh start with an existing tool might a way to increase the chance of success.

Recalibration of the hedonic price model and complete development of the disaggregated version of the SCAG PECAS SD module is another option. Since the current SD module includes the zone ID as a dummy variable to capture unexplained price factors, it is also possible to include other neighborhood variables, such as ethnicity. This is not performed in this project, because the empirical finding does not include sufficient evidence to support recalibrating the hedonic model. However, this might be the most feasible among the options examined as additional parcel-level real estate data, including price, becomes available.

Another option in modeling ethnic change is to apply a household joint distribution of income, size, and ethnic composition to the current SCAG PECAS output of household by income and size. This approach assumes that the current ethnic composition is determined by income and size composition at the TAZ level and the relationship is fixed. However, that method just matches the empirical findings without making much economic sense. The ethnic proportion is just calculated without clear causality with TOD and displacement.

As the method demonstrated in the previous section of the recalibration of SCAG PECAS based on the empirical finding, the last option is to recalibrate the zonal utility constant with ethnic variables and the proportion of owners. It could be possible to match more coefficients provided from the

empirical findings shown in Table 3B.4. However, this option still does not improve the flexibility of the ultimate model.

Table 3B.11: SCAG PECAS Enhancement Options

Option	Description	Pro	Con
Expand household classification for AA	Currently household is in [7 income group] X [2 size]. Expand to [7 income group] X [2 size] X [4 to 7 ethnic group] Re-estimate model within general equilibrium framework. - Consumption (commodity and housing by location) pattern for each household type - Labor supply (occupation) pattern for each type of household.	Explicit modeling of the household by ethnic group	Divert from the State-wide PECAS model Requires significant resources and time for data compilation and recalibration. Model is still inflexible to add other important/significant variables that are found.
Microscopic version of AA	Current model structure is in matrix-represented aggregated form, and calculates the market clearing prices in a closed mathematic way. Restructuring it into simulation based model with representation of individual households and business, model resulted from random drawings	Individual representation of economic entities allows flexible model expansion	Details are in discussion. Hard to make a decision to go with it without further estimation of development time and budget. Need more concrete evidence of "success" to choose this option
Ethnic composition as neighborhood condition for SD (Hedonic price model)	Current model uses ZONE ID as dummy variable to compensate for all of the unexplained price factors. Use the ethnic composition in the price model along with the ZONE ID dummy. It was has to be done in separate study for the empirical study in this project does not provide the necessary parameters	Technically feasible to incorporate additional zonal level variables to price estimation.	Space development is partially calibrated for the SCAG land use. It can be incorporated when the SD is fully calibrated with the proper value data.
Ethnic composition comparison before-and-after the calibration with TOD binary variables	Using joint distribution of household [income] X [size] X [ethnic composition], calculating the difference in the ethnic composition before and after the calibration (with TOD variables). Further adjust the model to match the estimated parameter (changes of NHW at TOD area)	Technically feasible with relatively small budget and resources.	Ad-hoc application of TOD variables to estimate ethnic composition as DV, not IV.
Ethnic composition as neighborhood condition for AA	Adjust AA model further to incorporate ethnic variable as neighborhood condition, as the method described in this chapter. Given estimated parameters, adjust the location choice constant to match the gross rent change by proportion of Asian, NHBLK and Hispanic	Technically feasible with relatively small budget and resources	Model is still inflexible to add other important/significant variables that are found. Model will depend on 2000 ethnic composition. Then why not the time period out of recession?

Section 3C: Development of an Off-Model Displacement Assessment Methodology

In this section we identify neighborhood indicators that significantly predict types of neighborhood change associated with displacement in the models developed in Chapter 2 as related to transit investment. We construct neighborhood indicators from readily available, tract-level ACS data in order to facilitate assessment of displacement risk by city or regional agency staff in a simple spreadsheet analysis. For the Bay Area and Los Angeles cases, we will calibrate these indicators to the extent possible with the findings of the UrbanSim and PECAS models.

The following presents several different approaches to an off-model displacement assessment methodology, reflecting in part the differences between the model structure and results for the Bay Area and Los Angeles. The Los Angeles model builds on the logit regression of gentrification in Chapter 2, section 2E, adding variables to represent change in rent and density. The tool assesses risk by totaling the significant coefficients using data from each tract; to assess future risk, SCAG will need to provide additional inputs that project rent and density. For the Bay Area, we provide two models: one to assess gentrification risk based on risk factors from the built environment and the second to predict displacement specifically (since it is occurring in all types of neighborhoods, not just gentrifying neighborhoods). The tool identifies whether a tract is at risk for each factor, and totals the risk factors to determine the level of risk. All of the variables used can be predicted by UrbanSim in order to assess future risk. All of the models demonstrate a robust ability to predict gentrification and/or displacement, with results ranging from 50% to 86% accuracy.

Defining a Predictive Model

A predictive model should have the ability to predict future outcomes, and a quantitative predictive model uses a set of observed or anticipated indicators (variables) that influence the projected results. For this task, the objective is to identify neighborhoods (defined as tracts) that will be at risk of gentrification and displacement in the future so that the relevant governments (e.g. counties and cities) and their agencies (e.g. MPOs, housing, transportation, and environmental departments) can take appropriate action to offset negative effects. A predictive model can be based on causal or descriptive models of past patterns and dynamics. A causal model uses causal independent variables or factors, while a descriptive model may also include independent variables that are not necessarily causal but nonetheless correlated with the variable (outcome) of interest. For predictive purposes, we do not necessarily require knowing causal relationships since correlated indicators may be sufficient to forecast the outcome. (An example is the canary in the coal mine, where the bird does not cause poisonous gases but merely serves as an early warning.)

Specifications of the Off-Model Tool for Los Angeles

The key challenge of creating a predictive model is the availability of input data for the future time period of analysis. We explored whether SCAG's PECAS model can help fill in some of the required projected variables. We focused on three key variables from SCAG's previous efforts, which include: (1) household by income by size, (2) housing types, and (3) land prices. In terms of household by income by size, for Los Angeles, we find that SCAG's projected patterns are not consistent with recent trends. For example, SCAG projects growth of low-income households on the Westside of Los Angeles County, an area of moderate to higher income. We examined the changes in the spatial patterns of low-income households in the past decade using 2000 and 2013 data and find

inconsistencies with SCAG's trajectory of low-income households in the future. We believe that part of the discrepancy is the way SCAG models the spatial distribution of future changes in total housing units and households, and then translates into household by income by size. Unfortunately, we do not have enough information to understand their modeling approach.

The second variable that we examined is SCAG's housing type category. The challenge is that it does not correspond to available ACS information. Perhaps the biggest issue is the fact that the housing type variable does not differentiate between renters and homeowners. This is a severe limitation because displacement mainly affects renters, and renters comprise an overwhelming majority of households around transit stations. We recommend that SCAG should have projections by tenure. This includes building a bridge between housing type and tenure. A related issue is the lack of information on households by race and ethnicity, which is a key element in the debate regarding gentrification and displacement. Our analyses reported in Chapter 2 show that race and ethnicity have an independent effect and could not be captured by mere differences.

The third variable that we assessed is land prices. Land price is the value of the land per square foot. The idea behind looking at land value is that changes in land price, whether historical or projected, can help us understand changes in rent level, which is highly related to displacement and gentrification. SCAG has stated that it has done very preliminary work on land prices in the previous RTP. This work has only been done at the TAZ level, which makes it problematic if we are to focus on smaller-level geographies such as TOD neighborhoods. As part of our assessment of SCAG's land-price data, we did our own estimate of baseline land prices using the county assessor's parcel data. Here, we find discrepancy with the land price data that SCAG provided to us. Upon further investigation and inquiry with SCAG, SCAG responded that they did not estimate land prices but instead were estimating improvement prices (built structure price per square feet). In our opinion, improvement prices are not an adequate proxy for land prices, and thus have limited usefulness in projecting future rent changes.

We also examined what SCAG is planning to do with land prices in their current PECAS model. They stated that they will use different techniques (e.g. hedonic pricing) to estimate land prices and that they will use micro simulation of the market to project market-clearing land prices in the future. SCAG uses an equilibrium approach rather than a marginal change approach. An equilibrium approach maybe appropriate if the time period is very long, but for shorter time periods, a partial adjustment model is more appropriate. Because this effort is ongoing, SCAG has been reluctant to share any preliminary numbers with us, and we did not receive any of the information for our assessment. As such, we cannot assess its current work. We do believe, however, that if it is able to estimate land prices for the base year and adequately project land prices in the future, then there also needs to be a serious effort to determine how land prices are related to rent levels, and how changes to land prices are related to changes in rent levels.

A possible feasible alternative is an off-model module to identify potential areas at risk of gentrifying. The key missing values (e.g., projected changes in rent) can be filled in later when SCAG finalizes its PECAS land price model and estimates how changes in land prices affect rent levels.

Off-Model Module: Identifying Potential Areas at Risk of Gentrification

As previously mentioned, a predictive model should have the ability to predict future outcomes, and a quantitative predictive model uses a set of observed or anticipated indicators that influence the projected results. Below is a basic predictive model that forecast for outcome "O" into the future (time = t +1) from today (time = t).

$$\mathbf{O(t+1)= a + b*X(t-1) +c*Y(t) + d*Z(t,t+1) + g*V(t+1) + error}$$

In this model, a, b, c, d, and g are vectors of parameters (usually based on some cause or descriptive model or models). X is a vector of past factors that have persistent influences on the future (For example, major features of the built environment inherited from the past, which are not likely to change over time). Y is a vector of current factors, Z is a vector of factors that will materialize between today and tomorrow, and V is a vector of factors that will be present in the future. The error term denotes the degree of uncertainty in the prediction. Z can only contain factors that themselves can be predicted over the projection period. This can include policy decisions or major actions within the control of an agency, such as major investments in new infrastructure. Z can also contain variables that have been predicted through other means. For example, some regional economic models use national economic projections as drivers (e.g., the projected growth in GDP). Similarly, V can only contain factors that are predicted at the end of the projection period.

We calibrated the model by examining observed recent trajectory. This is based on analyses reported in Tasks 2D, 2E and 2F. Below is a stylized example model, where t is the current period and t-1 is the previous (baseline) period. The model parallels the above predictive model:

$$\mathbf{O(t)= a + b*X(t-2) +c*Y(t-1) + d*Z(t-1,t) + g*V(t) + error}$$

For example, we estimated whether a neighborhood (tract) was defined as gentrified or gentrifying by 2009-13 (the most recent period with ACS data at the tract level). The baseline year is 2000. X(t-2) includes whether the tract was gentrifying in an earlier period and whether it had pre-existing transit stations (e.g., during the 1990s, prior to the 2000 baseline year). Y(t-1) includes variables for the demographic (race/ethnicity), socioeconomic (income), and housing (tenure) characteristics during the baseline year (2000). Z(t-1,t) also includes the opening of transit stations after 2000. It is important to note that we do not include variables denoting changes in the population between t-1 and t. We exclude them because they are potentially endogenous and because we cannot predict their values in the future. The model does not include V(t). Which factors are important is determined empirically (i.e., the variables that are statistically significant).

We use the empirical results to develop the off-model module, which predicts the risk of gentrifying. Gentrifying includes both direct displacement (socially and economically disadvantaged residents who are forced out) and exclusionary displacement (barriers that make it difficult for disadvantaged residents to move in). Our goal is to identify tracks at risk of being gentrified in the future (roughly 10 years from the base year since our analysis of past trends is roughly by decades). We aim to use only data that are readily available to the public and MPOs (ACS) and outputs from PECAS. In our analysis and spreadsheet, we do the following:

1. We determine which tracts are eligible for possible gentrification in 2000 (baseline), and which have gentrified/gentrifying (G/G) by 2013 (future).
2. We develop a list of variables (based on the data restrictions described above) that can be used to model the odds of gentrifying during the 2000-13 period. This is not a causal model,

but a descriptive one including changes (possibly endogenous) during the period. We also include TOD by type to capture its effects.

3. We estimate the influence/association of the right-hand side variables on the probability of gentrifying using a logit regression with available data. We use only eligible tracts. We only use statistically significant right-hand side variables, determined interactively by eliminating insignificant variables.
4. We then run some basic robustness and efficacy analysis on predicted odds of gentrifying, looking at consistency of actual versus predicted G/G. We have decided on three categories: (1) high predicted odds [predicted>.666]; (2) moderate predicted odds; and low predicted odds [predicted<.333]. We examine the absolute and relative numbers of false positives and false negatives.
5. We incorporate the logit regression model results into a spreadsheet that can be used to calculate the predicted odds and the three categories. We do not know if the estimated coefficients are applicable outside of Los Angeles. If not, then each region would need to run a logit model. The values in the spreadsheet can be replaced with new baseline and predicted data from SCAG when these become available.

Limitations

The accuracy of a predictive model varies with a number of factors. For example, the predictive power can be low if the model relies on a causal or descriptive model with little explanatory power (e.g., a multivariate linear model with a low adjusted R-square). The prediction may also be systematically biased if there are fundamental changes in circumstances not captured by the causal/descriptive/predictive models. The accuracy of a predictive model also diminishes when examining detailed outcomes or outcomes further into the future. Because of the inherent variance around a prediction, there will be false positives and false negatives, whose prevalence increases with decreases in predictive accuracy.

Very few models accurately capture the variance and precisely estimate outcomes that are consistent with the actual world. For example, many causal multivariate models have very low r-square which is roughly the percent of the variance explained by the model. Quite often we find r-squares between .10 and .30 which means we are only explaining 10 to 30% of the variance, leaving 70-90% of the variance unexplained. The same is true with a dichotomous model which predicts something happening or not happening. In other words, it can predict false positives and false negatives even if the model overall is statistically significant. For example, our model as a whole is significant but we still have a fair number of false positives and false negatives. Therefore, we should be very cautious on how to use these models. The model, nonetheless, is the best that can be done within the scope of the work that is being funded.

Table 3C.1 displays the crosstabs between the actual and predicted tracts that gentrified or are in the process of gentrifying. Overall, the model is able to predict roughly 93% (867 of the 932) of eligible tracts into their actual category (either did not gentrify or actually gentrified and were predicted as having moderate to high risk). Forty tracts fall into the "false negative" category, that is, these tracts actually gentrified but the model predicts them having a low risk of gentrifying. Fifteen tracts would be considered "false positives," tracts that did not actually gentrify but the model predicts that they did. In terms of predicting tracts that are at risk of gentrifying, the model has about a 50/50 percent chance of doing so.

Table 3C.1: Actual versus Predicted Gentrification in Los Angeles Tracts

	Predicted			
Actual, GG 2000-13	Low (<.33)	Moderate (.33-.66)	High (.66+)	Total
No	825	18	7	850
Yes	40	22	20	82
	865	40	27	932

Organization of Off-Model Module Spreadsheet

The off-model module includes four different spreadsheets where data can be inputted. The purpose of the first ("County Avg") and second ("Gentrification Calcs") spreadsheets is to identify tracts that are susceptible to gentrifying and tracts that actually gentrified between 2000 and 2013. For the first spreadsheet, county-level data are inputted and for the second spreadsheet, individual tract data are inputted. The following definitions from Task 2E are used to define eligible and gentrified/gentrifying tracts:

A tract was eligible if it met all of the following criteria:

1. The tract had a population of at least 500 residents in Year 1
2. Vulnerable (eligible) in year 1 (at least 3 out of 4 of the following indicators):
    - % low-income households (household income below 80% of the county median) is above the county median
    - % college-educated (bachelor's degree or higher) below county median
    - % renters above county median
    - % nonwhite above county median

A tract is said to be gentrified or gentrifying if it meets eligibility and all of the follow criteria:

1. Demographic change between years 1 and 2
    - Change in % college-educated > county (percentage points)
    - Change in % non-Hispanic white > county (percentage points)
    - Change in median household income > county (absolute value)
2. Change in median gross rent > change county median gross rent (absolute value)

The third ("Risk Factors") and fourth ("Predicted Value") spreadsheets are used to predict areas that are at risk of gentrifying. Only tracts that are eligible (determined from the two previous spreadsheets) are included in the calculations. The current spreadsheets use 2000 data as the starting point and the 2009-2013 ACS as the endpoint. Once the necessary data becomes available from SCAG, the values can be replaced with new baseline and projected data. The following variables are to be inputted into the "Risk Factors" spreadsheet:

- ***Median Household Income*** *(2013)*
- ***% non-Hispanic black*** *(2013)*
- ***% Hispanic or Latino*** *(2013)*
- ***% Asian*** *(2013)*
- ***% Renters*** *(2013)*
- ***Employment Density*** *(2013)*
- ***Downtown TOD*** *(Dummy variable)*
- ***Pre-2000 TODs*** *(Dummy Variable)*
- ***Post-2000 TODs Including any Future Transit Stations*** *(Dummy Variable)*

- ***Change in Median Gross Rent*** *(to be projected based on SCAG's predicted changes in land prices)*
- ***Change in Household Density*** *(to be projected based on SCAG's allocation of new housing units and households)*

Projected data are needed to calculate the change in gross rent and household density. Once all data are inputted, the last spreadsheet, "predicted value," calculates and categorizes eligible tracts into one of the three categories: (1) high predicted odds [predicted>.666]; (2) moderate predicted odds; and low predicted odds [predicted<.333].

Concluding Remarks

Given the current state of SCAG's regional models (still in development), future work will be needed to develop, test, and refine an off-model predictive module that identifies neighborhoods at risk of gentrification and displacement in the near future. It is important to incorporate insights and understandings based on empirical evidence. This includes explicitly modeling the dynamics as they relate to economic class, tenure status, and race and ethnicity, both for recent developments and future projections. SCAG can benefit by seeking outside advice from those with expertise on these topics.

Specifications of the Off-Model Tool for the Bay Area

The Bay Area Off-Model tool uses the variables that we found to be significant in predicting gentrification and displacement in the Bay Area. Instead of using the coefficients from the regressions of Section 2E, however, we construct risk indices similar to the gentrification index used in that section. Again, we focus on variables that the regional model (UrbanSim) can predict, and give an example of calculating risk for present-day (2013) data, although we believe such data can easily be replaced with future projections from the models. We develop two different models, one to assess gentrification and the second to assess displacement, specifically, the loss of low-income households. We separate the two, as our ongoing research has shown that low-income households can be displaced from many different types of neighborhoods, not just poor, gentrifying ones.

Gentrification and Displacement Risk

Recall from Section 2E, the gentrification index was assessed using the following index, which was used in models to determine what kinds of neighborhood characteristics predicted gentrification.

1. Tracts with at least 500 people in year 1 and less than 25% of their population in college (college towns)
2. Vulnerable in year 1 (at least 3 out of 4 of the following indicators):
    - % low-income households > regional median
    - % college-educated < regional median
    - % renters > regional median
    - % nonwhite > regional median
3. Demographic change between years 1 and 2:
    - Growth in % college-educated > region
    - Growth in median household income > region
4. Investment between years 1 and 2:
    - % market-rate units built between year 1 and 2 > regional median

- Growth in either:
  - Single-family sales price per square foot> regional median
  - Multi-family sales price per square foot > regional median
  - Home value > regional median (where sales data is unavailable)

Using the results from the logit models in Section 2, we then assessed future risk of gentrification by first determining if a tract was eligible (criteria 1 and 2 above), and then assess risk based on the presence of the following risk factors:

1. Within a half-mile of a rail transit station
2. % of units in buildings built pre-1950 > regional median
3. Employment density (# jobs/square mile) > regional median

Eligible tracts that had only 1 out of the 3 risk factors above were given a risk level of low. Tracts with a composite score of 2 were assigned a risk level of moderate, and tracts with all 4 risk factors were assigned a high level of risk.

We then applied the same method to data from 2000 and the previous decade to compare predicted risk values to the actual gentrification index for the period of 2000-2013. These are summarized in Table 3C.2.

Table 3C.2: Actual versus Predicted Gentrification in Bay Area Tracts

	Predicted			
Actual, 2000-13	Low	Moderate	High	Total
No	109	353	50	512
Yes	12	57	16	85
	121	419	66	597

Thus, for the gentrification model, the Bay Area tool predicts moderate or high risk of gentrification for 73 of the 85 tracts that actually gentrified (86%). However, it also predicts a moderate or high risk for 383 of 512 tracts (75%) that did not actually gentrify.

A similar procedure was used to assess displacement risk, except most tracts were deemed eligible to experience displacement if they were home to more than 100 low-income households, had over 500 people living in them and less than 25% of the population in college. Based on the results from section 2E, we added prewar neighborhoods, TODs outside of the three largest cities and percentage of low-income households living in naturally occurring affordable units as risk factors for displacement. Tracts with a composite score of 2 or 3, were assigned a risk level of high, and tracts with a score of 1 were considered moderate.

As shown in Table 3C.3, the displacement prediction tool predicts moderate or high risk of displacement for 470 of the 537 tracts that experienced a loss of low-income households (88%).

Table 3C.3: Actual versus Predicted Loss of Low-income Households in Bay Area Tracts

	Predicted			
Actual, 2000-13	Low	Moderate	High	Total
No	240	472	297	1009
Yes	67	259	211	537
	307	731	508	1546

Chapter 3 Conclusions

In this chapter, we explain our findings that the integrated transportation land use and transportation models used by the state's MPOs have varying ability to address displacement. Researchers successfully adapted UrbanSim to address how race, income, household size, rent, and rent burden shape household location decisions and thus displacement. These modifications will ultimately be integrated into MTC's Sustainable Communities Strategy. However, PECAS, the model used by SCAG, could not be adapted to analyze displacement.

We also present several different approaches to an off-model displacement assessment methodology, designed for use by practitioners. All of the models are able to predict gentrification with results ranging from 50% to 86% accuracy.

Chapter 4: The Effects on Auto Use of Household Displacement from Rail Station Areas

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Acronyms Used in This Chapter

- ACE (Altamont Corridor Express)
- ACS (American Community Survey)
- BART (Bay Area Rapid Transit)
- CHTS (California Household Travel Survey)
- CNT (Center for Neighborhood Technology)
- GHG (Greenhouse Gases)
- GPS (Geographic Positioning System)
- NHTS (National Household Travel Survey (NHTS)
- OLS (Ordinary Least Square)
- ORNL (Oak Ridge National Laboratory)
- TOD (Transit-Oriented Development)
- TSDC (Transportation Security Data Center)
- VMT (Vehicle-Miles Traveled)
- VTA (Santa Clara Valley Regional Transportation Authority)

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This chapter addresses the question of whether gentrification and displacement affect regional auto use, and greenhouse gas emissions. We use travel survey data for metropolitan areas within California, focusing on the 9-county Bay Area region[1] and the 5-county Los Angeles region[2], to analyze whether low-income households reduce their auto use more than high-income households when locating near transit, as measured by their vehicle miles traveled (VMT). We find that low-income households both near and farther away from rail stations have lower VMT than high-income households, but that higher income households either reduce their driving more in response to being near rail, or that there is no difference in VMT impacts across income categories. When gentrification is accompanied by densification, these results imply it will reduce regional VMT on net. However, when displacement is significant enough and population density declines, regional VMT is expected to increase.

Chapter 4 Introduction

Transit-oriented development (TOD) policies are intended to reduce auto use by increasing dense, mixed-use development near high-frequency transit stations. But there is a growing concern that TOD policies or new transit investments may cause gentrification and displacement. In addition to disrupting the lives of displaced households, gentrification and displacement might also increase driving and associated problems such as greenhouse gas (GHG) emissions.

Depending on the neighborhood context and the details of implementation, TOD policies could certainly result in rent hikes and increases in home sales prices. This could cause poorer, transit-using households to seek lower-cost housing elsewhere while being replaced by wealthier households more likely to own cars and to drive. Under these circumstances, auto use in the rail station area would surely go up. But if such a displacement scenario were to occur, would regional auto use increase? And do actual patterns of population change in gentrifying neighborhoods near rail stations suggest that gentrification contributes to regional increases in auto use?

Previous research on this topic has neglected to explicitly take a regional perspective. It has focused instead on the fact that household VMT is likely to increase in station areas when gentrification occurs, without attempting to estimate travel patterns of displaced households, or what travel patterns would have been if planners and policy makers succeeded in forestalling gentrification.
In this study we analyzed how household auto use, as measured by VMT, is correlated with access to rail stations, household income, and the interaction of income and rail access, and we explicitly accounted for spatial population shifts using a simple method described below. We used multiple data sources and carried out a variety of regression models. We used data from the California subsample of the confidential version of the National Household Travel Survey of 2009, and from the California Household Travel Survey of 2010-12, merging these household-level travel data with spatial information on the location of rail stations across the state. We then used regression analysis to estimate how rail access reduces VMT differentially according to different levels of income when controlling for variations in household size and other factors. Finally, we used these estimates to simulate hypothetical displacement of poorer by richer households, as well as to model the VMT impacts of observed population changes in a set of four census tracts located near rail stations in

[1] We define the 9-county Bay Area region as Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties

[2] We define the 5-county Los Angeles region as Los Angeles, Orange, Riverside, San Bernadino, and Ventura counties.

California that experienced gentrification between 1990 and 2013, as defined elsewhere in this report.

Our estimates are based on calculating differences in VMT between households of different income levels located near and far from rail. Similar to all previous analysis on this topic, we relied on cross-sectional data. Longitudinal surveys, following the same households over time and repeatedly collecting data on VMT and spatial characteristics, as respondents move into or out of rail station areas, are unavailable and would require significant new resources for survey data collection. Without longitudinal data we must make reasonable assumptions in our scenarios, such as assuming that the average displaced low-income household moves to an average location in the region outside a rail station area.

We found little evidence that gentrification and displacement in rail station areas would cause auto use to increase, across multiple data sources and model specifications. This is for two reasons. First, rail access is associated with either a greater VMT difference for high-income than for low-income households, or no difference in VMT comparing high- and low-income households, in uncontrolled and controlled results. An average high-income household living within a rail station area has much lower VMT than an average high-income household living outside a rail station area. The difference in VMT for low-income households is substantially smaller when comparing those living within and outside rail station areas. This fact is largely robust to controlling for other factors including household size. However, we also find that in some controlled models, moderate-income households have a smaller VMT reduction associated with rail than do either low-income or high-income households. This latter finding, though not consistent across data sources, does complicate matters because it implies that the specific pattern of household turnover could influence whether gentrification increases auto use regionally, decreases it, or has no effect.

Second, in most census tracts located near rail stations that experienced gentrification (as defined elsewhere in this report), there was either no loss of low-income households or there was an increase in higher-income households exceeding that loss, so that the total number of households in most gentrifying station-area census tracts has increased. In fact, in many gentrifying tracts over the study period there was a quite significant increase in population density. Under our assumptions, this feature of gentrification means that more households were able to live near rail rather than far away, with concomitant VMT reduction benefits. Based on our analysis, the most plausible scenario in which gentrification and displacement in any particular neighborhood would cause VMT increases regionally would be one in which displaced low-income households were replaced by a smaller number of moderate- or higher-income households. A relatively small number of census tracts appears to fit this criterion. For example, based on our analysis of the census tract data described elsewhere in this report, between the years 2000 and 2013 there were 87 newly gentrifying tracts in the Bay Area. Of the 87, just two tracts had both a reduction in the number of low-income households and a net decline in the number of households as a whole.

Thus, in our simulated gentrification scenarios (described below), regional VMT declines or is not statistically significantly affected, except in a stylized scenario in which 1,000 low-income households are replaced by 500 high-income households; in this case, one estimate method suggests an increase in regional VMT. One can easily imagine additional but less common scenarios for which our analysis implies increases in regional VMT – mainly neighborhoods where gentrification is accompanied by significant displacement of poor households without a simultaneous increase in local population density.

Our results vary depending on the region and the data used, but they generally imply the following:

- If higher-income households (making more than $100,000 per year) displace moderate-income households (with income in the range of $25,000 to $75,000) on a one-to-one basis, regional VMT will decrease.

- Regional VMT will likely increase if gentrification results in a reduction of the population living near rail and if those rail station areas have good transit service, high density, and other well-known features of supportive TOD.

- Regional VMT may increase (the results are not consistent) if lower-income households are displaced by households of moderate income, and if population density remains the same or falls.

Study Motivation

How would regional auto use and GHG emissions be affected if transit investments or TOD programs displaced core transit users with higher-income, car-owning residents? Regional reductions in auto use that are assumed to be achieved through the pursuit of smart growth, transit-focused development, and similar urban planning strategies are called into question if such displacement occurs. Urban planners would benefit from a better understanding of how transit investments, and policies to intensify development near rail, may affect the net auto use of households in a region if they also induce spatial population shifts.

Gentrification can cause substantial disruption and harm to lower-income households. It also has the potential to provide benefits to low-income households who are able to remain in gentrifying areas. This study does not address those issues. Rather, we explore whether, if gentrification or displacement does occur, this would result in a global (regional) increase in auto use, as measured by VMT.

If a TOD strategy leads to the displacement of lower-income households near transit stops, replacing those households with those of higher income, the effects on VMT are theoretically uncertain. They partly depend on the nature of residential choice by different household types, which in turn is likely to be influenced heavily by the particular policies adopted to encourage TOD, and they partly depend on whether and how housing supply is constrained, including by policies influencing housing production or renovation elsewhere in the region, as well as physical and environmental conditions affecting the cost of housing production (Chatman 2014, Cao and Chatman 2016). Households seeking new housing are strongly influenced by its spatial distribution and price.

On the one hand, there is reason to believe that displacement caused by TOD would increase auto use. Lower-income households are more likely than higher-income households to take advantage of transit services, and using transit services may decrease auto use. Under such assumptions, regional travel modeling for the San Francisco Bay Area resulted in projections of more net auto use when income increased near transit stops (Kanner and Niemeyer 2012). But the opposite is also possible: the auto use of lower-income households may not be highly dependent on proximity to rail or bus service. Public transit is by no means the only alternative to driving alone. There are alternative modes like walking and bicycling. Since more than three-quarters of auto mileage in U.S. urban areas is for non-work purposes, much daily travel can be thought of as discretionary. Lower-income

households are more likely than those of higher income to travel less, to rely on alternative modes more, and to own and use autos less, regardless of where they live (Chatman 2009). But whether people of different income groups respond differently to transit accessibility and the built environment is a question that has rarely been studied in the literature.

Literature Review

If TOD leads to the displacement of low-income households, we may expect a change in travel behavior of households living near rail stations. The mobility of richer households is far more likely to depend on automobiles than that of poorer households. Minorities and low-income households also account for a large share of the nation's transit riders (Pucher and Renee 2003). Therefore, if TOD programs caused gentrification, transit ridership might be expected to fall due to the displacement of low-income households, and in turn, auto use might be expected to increase.

Previous research has argued that the travel patterns of households living in TODs are primarily affected by two factors: accessibility and income (Danyluk and Ley 2007, Lund et al. 2004). It has also been argued that increased transit accessibility (such as a new rail line) might not increase transit ridership very much if it is associated with an influx of high-income households into the newly transit-served area accompanied by a loss of lower-income households who were frequent transit users (Lund et al. 2004, Dominic 2012, Pollack et al. 2010). One Canadian study showed that although households living in gentrified districts often cycled to work, they used public transportation less and automobile commuting more than those in non-gentrified districts (Danyluk and Ley 2007). A study of 42 neighborhoods and 12 metropolitan areas in the U.S. in which one or more transit lines were developed between 1990 and 2000 showed that transit development was associated with increased rent burden and an influx of automobile-owning households (Pollack et al. 2010).

However, such studies have failed to consider regional VMT. Almost by definition, gentrifying rail station areas experience an increase of high-income households who are more likely to drive cars and use transit less. From a regional perspective, the outcome of such an influx, whether accompanied by displacement or not, is unclear. Understanding the regional VMT impact of gentrification and displacement requires explicitly accounting for any change in auto use by higher-income households moving into the station area, along with any change in auto use by displaced, lower-income households.

Understanding the regional VMT impact of displacement ideally also relies on a better understanding of travel behavior before and after a move for households of these types. Previous evidence on this question has not shown that transit mode choice increased significantly among TOD residents compared to their travel patterns in their previous neighborhoods. Respondents to one California survey reported small increases in transit trips that were not large enough to be statistically significant (Lund et al. 2004. Those who had changed both work location and residential location indicated a variety of mode changes; 11.5% switched from automobile to rail transit, but an almost equal number switched from transit to automobile. The researchers concluded that the pattern of mode change that occurs when a resident move to a TOD is complex, because TODs provide good accessibility of all kinds, not just rail transit. Another study found that the VMT produced by more affluent, newly moved-in households (defined as income 25% above regional median, and living in their current home for less than 10 years) decreased over time, and residents who had been in their current location for less than a year had the highest auto VMT

(Kushto and Shofer). This suggests that recent movers may be less indicative of equilibrium VMT patterns.

One fundamental question, implicit in understanding the net VMT and GHG effects of any displacement coincident with transit investments or development near transit, is how households of different income levels respond to transit availability or the built environment. The combined effect of built environment and income has rarely been studied. One study of residential location choice and activities found no significant difference in the effect of transit access on activity participation among those of differing income (Pinjari et al. 2009). A recent report by the Center for Neighborhood Technology (CNT) investigated whether transit and employment density had different effects on households of different income levels, using different methods and measures than those used here, and similarly found no statistically significant differences in transit responsiveness among low- and high-income households (Newmark and Haas 2015)[3]. The same report argued that large GHG reductions can be achieved by preserving low-income housing in TOD areas because low-income households emit less VMT when living in TOD areas than high-income households do. But by focusing only on households living in TODs, this conclusion neglects to consider the impacts of TOD on auto use regionally.

Data and Methodology

We focused on household travel in the major California metropolitan areas—the San Francisco Bay Area, the Los Angeles region, Sacramento, and San Diego—and also estimated separate models for the Bay Area and the Los Angeles region. We relied on two sources of confidential, spatially precise microdata. The first was the National Household Travel Survey (NHTS) of 2009, with 16,575 households residing in California metropolitan areas. The second was the California Household Travel Survey (CHTS) of 2010-2012, with 25,246 metro area households.[4] The NHTS 2009 confidential data were obtained with approvals from the NHTS committee of the U.S. Federal Highway Administration. We accessed the CHTS data through a remote system maintained by the Transportation Secure Data Center (TSDC), with approval from the National Renewable Energy Laboratory.[5]

Our dependent variable in the analysis was average daily VMT. Due to differences in surveying methods between the two datasets, we used a different calculation to arrive at this figure for the CHTS and the NHTS. The CHTS dataset contains detailed travel behavior information using two data collection methods: self-reported trips and GPS tracking. For trip reports, respondents reported the locations they visited over a 24-hour period using an online travel diary, and the travel distance for

[3] The CNT report used data from the California Household Travel Survey and calculated average VMT estimates for five different income groups of households throughout California living within a quarter-mile of TOD areas (including rail, ferry and high-frequency buses), within a half-mile of these areas, and households beyond these thresholds (non-TOD households). The built environment factors used were whether the household was in a major metropolitan region, small city, or rural setting; residential and job density; and commute distance. Demographic control variables included the number of adult students, workers, preschoolers, school children, adults, and seniors, as well as whether any member of the household had a disability, and whether the travel diary day was a Saturday, Sunday, or holiday.

[4] We used NHTS 2001 as well but do not share the results in this paper since the sample size was too small.

[5] The application and approval process for access to confidential CHTS data took several weeks. Additionally, since confidential data cannot be moved or copied from TSDC's servers, we connected remotely in order to access and work with the data on their servers. In doing so we were limited to the software programs available to TSDC, which were QGIS and R statistical package.

each trip was calculated by the system as the shortest network distance between origin and destination for each trip. Since trips are represented at the person-level in the CHTS, we calculated a corrected estimate of VMT for each trip taken by the household by dividing the trip distance in miles by the number of occupants in the vehicle (including both household and non-household members). We then summed the VMT per trip over all trips taken on the travel day for each unique household.

The NHTS dataset includes an odometer reading for each household vehicle, as reported by survey respondents. For the 2009 version of the NHTS, only one odometer reading was collected. Annual mileage per household vehicle was estimated from the total odometer reading, as follows. Using the NHTS 2001 data, which showed a negative correlation between vehicle age and the annual odometer VMT calculation, the Oak Ridge National Laboratory (ORNL) developed regression models for three vehicle types (new vehicles, used vehicles, and used/new status unknown) to estimate the most recent year's VMT based on total VMT and vehicle age (ORNL 2001). We summed this estimate for all household vehicles, and then divided by 365 to get the average daily VMT per household.

The VMT calculation for each dataset has its advantages and drawbacks. Odometer estimates represent aggregated VMT for an entire year, which is less sensitive to noise from atypical travel behavior on the survey day. But odometer estimates neglect any auto trips taken without using household vehicles, such as borrowed vehicles or rental cars. The relatively accurate trip distance calculations in the CHTS dataset include all trips, such as auto trips taken without a household-owned vehicle. But for most respondents these distances are calculated under assumptions about least-path, rather than being directly measured. And the fact that they are measured only for a survey day means there will be much more statistical noise in the CHTS estimate.

The spatial specificity of the two datasets also varied somewhat. The confidential version of the NHTS provides the location of the census block group, allowing us to join the household spatial data, represented here at the block group centroid, to accurate spatial data on rail station locations that we created from a variety of sources (mainly from previous research projects of the first author). The confidential CHTS data included the latitude and longitude of each household, allowing us to calculate a more precise rail proximity measure than for the NHTS data. The CHTS dataset also provides information on each household's most recent move, and the zip code and city of the previous address, if the move was within five years of the survey date. As described below, we investigated these data but did not find statistically significant results due to small sample sizes of households living near rail.

Transit accessibility is represented in this study as being located within a half-mile of a rail station, which is highly predictive of rail ridership (Guerra et al. 2012). Transit access of all kinds, including bus service, tends to be highest near rail stations. Rail-station areas are also where most TOD programs are focused. In California, TOD is defined as being within a half-mile of transit stations with transit services having a headway of not more than 15 minutes (SB 375 2008). The rail stations included are those from the San Diego Trolley, North County Transit District, Metrolink (Orange County), LA Metro, Caltrain, Santa Clara Valley Transportation Authority (VTA), Altamont Corridor Express (ACE) Train, Bay Area Rapid Transit (BART), San Francisco Muni, and Sacramento light rail. This yields a total of 765 rail stations. Of the 16,575 households in the metropolitan areas in the California NHTS 2009 data, 847 are within a half-mile of a rail station. Of the 25,246 metropolitan households in the CHTS data, 2,263 households are within a half-mile of a rail station.
For each dataset, we estimated a Tobit model of average daily household VMT as a function of rail station access, income, the interaction between rail proximity and income, and control variables.

The Tobit model is a more appropriate model than ordinary least squares (OLS) because it accounts for the fact that, in the case of the CHTS, a substantial fraction of respondent households did not drive on the survey day (either because they did not have access to a vehicle, or for some other reason), or, in the case of the NHTS, did not own household vehicles and therefore did not report a yearly odometer reading. The Tobit model allows for the auto ownership effect of transit access to be incorporated into the model, providing an appropriate functional form for the left-truncated distribution of the dependent variable. (We also estimated OLS models and did not find large differences such as changes in sign.) We considered other functional forms including count models (Poisson, negative binomial) and zero-inflated count models, but the Tobit is more appropriate for a continuously distributed variable like VMT. The use of sample selection models is another option that we did not test, and in future research plan to do so. However, we strongly suspect that the results will be consistent with the Tobit model results.

Results

Descriptive analysis

Table 4.1 shows summaries of average daily household VMT by income categories and rail access using the NHTS and CHTS data. Figures 4.1 and 4.2 show a graphical representation of the data. In order to ensure comparability between the two datasets, which have somewhat different income category reporting, we used four categories of income for the descriptive analysis: less than $50,000 per year, between $50,000 and $75,000, between $75,000 and $100,000, and over $100,000 per year per household. Household income of $100,000 is not considered particularly high-income in most parts of metropolitan areas in California, but this is the highest income category in the NHTS data.

In both datasets, households of different income categories living near a rail station have lower VMT than those living farther away (although in the NHTS dataset, there is no statistically significant difference for the $50,000 to $75,000 range of household income). In the NHTS data, the percent and absolute VMT difference is higher for the $75,000-$100,000 and $100,000+ income groups than the less-than-$50,000 group. In the CHTS data, although the VMT difference is higher in percentage for the lowest-income group, the absolute value of the VMT difference is higher for households with income exceeding $75,000, while the middle-income groups have smaller differences in VMT.

We conducted the same descriptive analysis for the entire state of California, for the San Francisco Bay Area only, and for the Los Angeles region only (see appendix S, Tables S.1 to S.3 and Figures S.1 to S.6). The statewide California descriptive statistics are similar to those for metropolitan areas within California. Comparing average VMT by income category within the Bay Area and Los Angeles region reduces the sample size considerably, which in the NHTS data results in low sample sizes (less than 100 respondents) for households in middle-income categories living near station areas, and reduces statistical reliability (see Appendix, upper half of Tables S2 and S3).

Table 4.1: Average Daily Household VMT by Income Category and Rail Access, metropolitan areas only, NHTS 2009, and CHTS 2010-2012

National Household Travel Survey (NHTS) 2009							
	In rail station area		Outside rail station area		VMT difference		t-test
Income categories	VMT	N	VMT	N	Percent difference	Absolute difference	
<$50k	31.08	444	37.84	6,220	17.86%	6.76	2.8
$50k-$75k	49.03	140	55.87	2,571	12.24%	6.84	2.02
$75k - $100k	49.69	104	71.24	2,207	30.25%	21.55	5.44
>$100k	60.86	159	79.86	4,730	23.79%	19	5.79
Total	41.86	847	57.89	15,728	27.69%	16.03	9.71
California Household Travel Survey (CHTS), 2010-2012							
	Near Rail		Away Rail		VMT difference		t-test
Income categories	VMT	N	VMT	N	% of VMT difference	Absolute VMT difference	
<$50k	16.81	846	26.67	6,855	36.97%	9.86	7.55
$50k-$75k	28.09	386	39.02	3,923	28.01%	10.93	3.48
$75k - $100k	29.77	323	45.93	3,661	35.18%	16.16	5.53
>$100k	35.17	708	55.64	8,544	36.79%	20.47	11.34
Total	25.61	2,263	43.65	22,983	41.33%	18.04	15.85

[1] *This difference is not statistically significant*

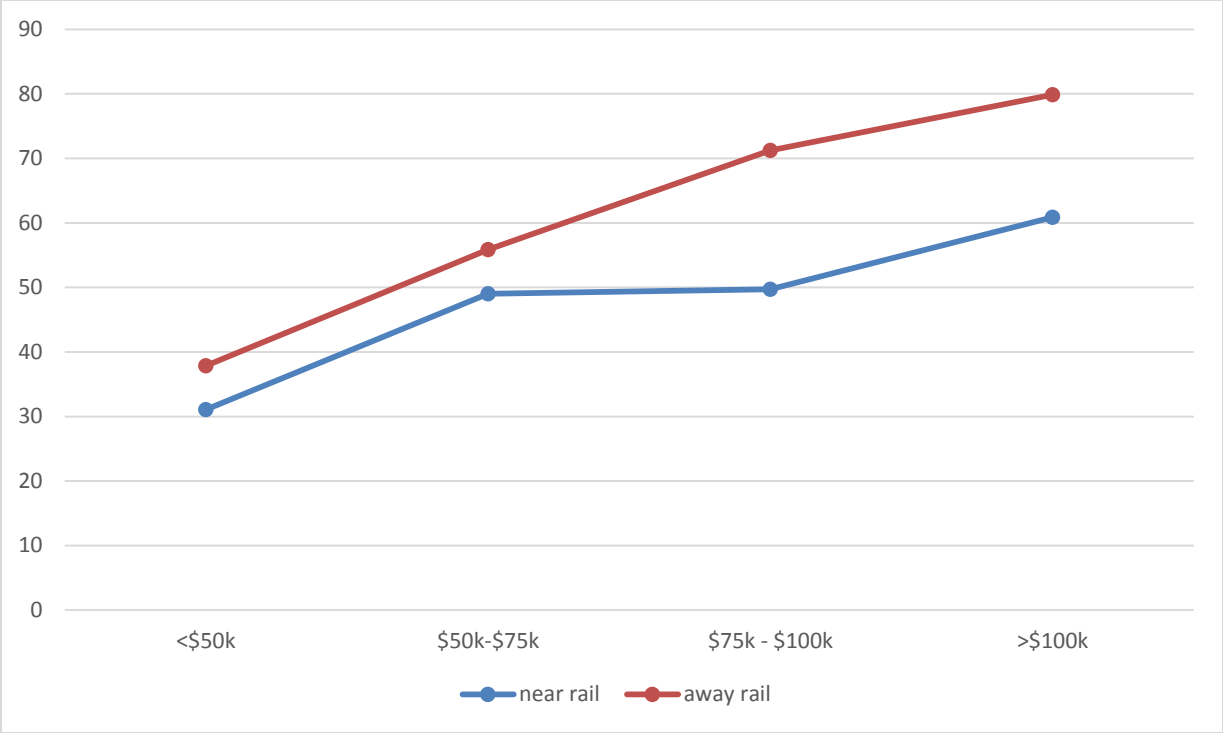

Figure 4.1: Average daily household VMT by income category and rail access, NHTS data, all California metro areas

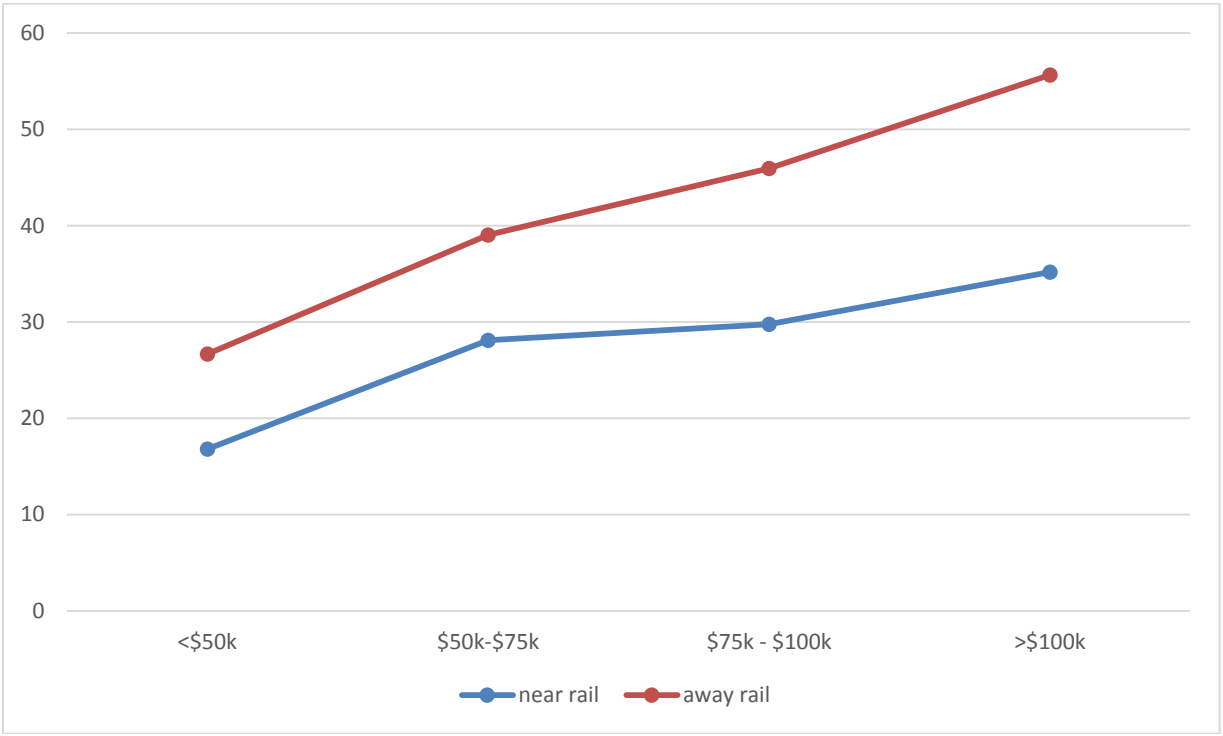

Figure 4.2: Average daily household VMT by income and rail access, CHTS data, all California metro areas

In the NHTS data for the San Francisco Bay Area, the decrease in VMT is larger for each successively higher income category, while in the CHTS data the VMT difference is smallest for the $50,000 to $75,000 income range (and not highly statistically significant), somewhat larger for households with less than $50,000 in income, and largest for the $75,000 to $100,000 and "$100,000 or more" income ranges. In NHTS data for the Los Angeles region, partly due to small sample sizes of households living near rail stations in the Los Angeles region sample, we found no statistically significant differences in VMT by rail access (see Appendix S; Table S.3). In the CHTS data for Los Angeles, we found that only among the lowest-income households was there a VMT difference associated with rail access. Differences in the other income categories were large but not statistically significant due to the small number of households in the sample who live near rail stations.

Thus in both the CHTS and the NHTS data, uncontrolled descriptive differences tend to suggest that displacement might not increase auto use, but might instead have no effect on regional VMT, or even decrease it. The statistically significant evidence suggests the absolute difference in VMT associated with rail access is either larger for higher-income households or there is no difference by income.
We also looked at data about recent movers in the CHTS, although unfortunately the number of respondents is small. Data about households moving near to and away from TOD areas would be a better way than cross-sectional data to determine how rail access influences VMT in a gentrification and displacement scenario, because moving households are likely different from those that stay in place, particularly if travel habits from the previous location influence their travel in their subsequent neighborhood. In the CHTS dataset, the respondent's previous zip code or city is provided when the respondent moved within five years of the survey date. We used data for the entire state of California (not just metro areas), which has 8,426 households that moved recently. Then we excluded households that only reported a city and no zip code, leaving 6,922 households. Of these, 5,878 households had moved within California and were retained for this analysis. We determined the transit accessibility of the respondent's previous address by checking whether the respondent's previous zip code had at least one rail station. We subdivided the movers into three income categories: $0 to $49,999, $50,000 to $99,999, and $100,000 or more, and then we categorized these recent movers into one of four mover profiles, based on whether the household moved as follows:

- From a zip code with no rail access to an address within a half-mile of a rail station ("away to near");
- From a zip code with no rail access to an address farther than a half-mile from a rail station ("away to away"),
- From a zip code with a rail station to an address within a half-mile of a rail station ("near to near"); or
- From a zip code with a rail station to an address farther than a half-mile from a rail station ("near to away").

Within each mover profile, higher-income respondents had higher VMT, as expected. Unlike the cross-sectional descriptive analysis just described, the difference in VMT associated with rail access was smaller for high-income than for low-income respondents among those who had moved into or out of zip codes with rail stations. But most differences were not statistically significant, since as few as 18 respondents are found in the subgroups (see Appendix, Table S.4). Thus while the mover data might appear to suggest that low-income households increase their VMT when moving out of a station area to a degree exceeding the reduction in VMT by high-income households moving into a station area, this pattern is not statistically reliable. Without a larger set of longitudinal data, we can only work in controlled analysis with the relatively robust set of cross-sectional data available to us,

which is the analysis we turn to next.

Controlled analysis

While the cross-sectional data show that VMT differences associated with rail access in the major metropolitan areas in California tend to be larger for higher-income households, factors other than rail access may play a role. Household size, age, sex, race/ethnicity, and other observed factors also influence auto use, and those factors may be correlated with both rail access and income. For example, higher-income households who live near rail may also have smaller household sizes and may be less likely to have children in the household than lower-income households living near rail. Larger households with children tend to travel more.

Regression analysis that includes control variables is therefore helpful in establishing whether the differences we observe in VMT levels near and far from rail access are actually attributable to rail access. We conducted regression analyses controlling for household size, whether the household has one adult, whether the household has children, and if the home is rented. We also controlled for census tract population density and employment density. These variables have been found to be highly significant determinants for VMT in previous studies (e.g., Chatman 2003). We also carried out models with additional control variables (including the number of drivers, as well as an endogenous variable, the number of household vehicles); results were consistent with the more parsimonious models presented here, which are also more statistically reliable given small sample sizes in certain income categories near rail. We were not able to include additional variables such as parking availability or workplace characteristics in this analysis. Parking availability is likely quite important but not available in the NHTS or CHTS data. Workplace characteristics were not available in the data that we had confidential access to even though they exist in the confidential data held by data steward agencies that may be made available under confidentiality agreements to us or other researchers in the future.

A relatively large percentage of respondents did not report household income (7.1% in the NHTS and 8.6% in the CHTS). We tested three different approaches to address this problem: we excluded households that did not report their income; we included them in the analysis by adding a dummy missing income variable; and we estimated their income using an imputation technique applied with non-missing data on demographics, using the multiple imputation routine in R. The estimation results for the three different outputs were very similar, so we only present models using imputed income.

Table 4.2 shows a first set of estimation results for all California metropolitan areas, as well as the San Francisco Bay Area only, and the Los Angeles region only, using both NHTS and CHTS data. This set of models uses household income represented with two variables: as a continuous (numeric) variable, and as the square of that variable. Representing income as a continuous variable using NHTS or CHTS data requires re-coding categories of income as the midpoint value for the category (e.g., the "$0 to $10,000" income category is recoded as "5" to represent $5,000). For the top-coded income category we arbitrarily assigned a value of $110,000 for the NHTS "$100,000 or more" category, and a value of $250,000 for the CHTS "$200,000 or more" category, consistent with other studies. As noted previously, the other independent variables include rail proximity (a dummy variable representing whether there is a rail station within a half-mile of the residence), and the interactions between rail proximity and income. These interactions between rail proximity and income are of most interest because they help answer whether households in different income categories are more or less likely to reduce their driving in response to living near a rail station.

Significant coefficients on these variables imply that people of different income levels are more or less responsive to rail access in terms of their auto use, and therefore, that displacement would influence regional VMT in some way.

Table 4.2: Household daily VMT regressed on rail proximity, numeric income, income squared, interaction of income and rail proximity, and demographic controls

	Metropolitan areas		SF Bay Area		LA Region	
Household VMT per day	NHTS (1)	CHTS (2)	NHTS (3)	CHTS (4)	NHTS (5)	CHTS (6)
(Constant)	-2.16	-7.90**	-5.36	-3.03	-4.11	-12.55**
Near rail	-11.89**	-7.91**	-5.14	-15.43**	-25.28**	-4.66
Income (1000s)	0.69**	0.47**	0.66**	0.38**	0.76**	0.53**
Income (1000s) + near rail	0.38*	0.03	-0.03	0.09	0.86*	0.08
Income^2 (100 millions)	-0.23**	-0.12**	-0.26**	-0.10**	-0.25**	-0.15**
Income^2 (100 millions) + near rail	-0.34**	-0.03	-0.02	-0.05	-0.70*	-0.03
Census tract housing. density (1000 /sq mi)	-1.00**	-0.35	-1.20**	-0.43	-0.97**	0.51
Census tract pop. density (1000 /sq mi)	-0.22**	-0.68**	-0.04	-0.72**	-0.27*	-0.93**
Household size	12.62**	9.23**	13.39**	9.91**	12.49**	9.79**
One-adult household	-10.63**	-9.03**	-9.25**	-10.01**	-9.93**	-6.89**
Household with children	4.13**	-1.76	7.62**	-1.69	4.11**	-3.20*
Rental house	-9.13**	-5.48**	-9.37**	-6.06**	-9.14**	-5.05**
N	16,575	25,246	3,986	9,251	6,616	12,869
Log (scale)	3.8	4.16	3.76	4.12	3.86	4.18
Log-likelihood	-8,835	-11800	-19,670	-39160	-32,940	-55120

*Note: ***: 99% significant; **: 95% significant; *:90% significant*

The first relevant finding from the models shown in Table 4.2 is that rail proximity is not always associated with a reduction in daily VMT controlling for other factors. In the metropolitan area models (columns 1-2), the rail proximity indicators are statistically significant; being near a rail station is associated with 11.89 fewer VMT per day in the model using NHTS data, and 7.91 fewer VMT in the model using CHTS data. But there is inconsistency in the models restricted to respondent households living in the San Francisco Bay Area and Los Angeles region (Table 4.2, columns 3 to 6). Rail proximity is not significantly associated with VMT in the Bay Area-specific model when using NHTS data, but it is significant and large when using CHTS data, implying a reduction of 15.43 miles per day (Table 4.2, columns 3-4). Apparently this is not merely a function of the different dataset characteristics, because the finding reverses between data sources for household respondents in the Los Angeles region. Rail proximity is significant and large when using NHTS data (rail access is associated with a reduction of 25 VMT per day), but the relationship is statistically insignificant with CHTS data (Table 4.2, columns 5-6). Note that we control for both population and housing density in these models, and our other published research has argued that rail access by itself may be less important than such factors as those, which may be correlated with rail access (Chatman 2013). Thus this finding is not new or particularly surprising, but its inconsistency is somewhat remarkable.

Both numeric income and income squared are statistically significant in the expected direction in all models. That is, across income categories, while there is increasing VMT with income, the effect decreases at higher levels of income. But the focus of this analysis is on the interaction of rail access and income, which provides evidence to help answer the question of whether higher-income households are different from lower-income households in how they reduce their vehicle use when near a rail station. The models show significant relationships only with the NHTS data, and when looking at all metropolitan areas and at Los Angeles (Table 4.2, columns 1 and 5), but not in the San Francisco Bay Area. In other words, four of the six models (Table 4.2, columns 2-4 and 6) imply that rail access has the same effect on VMT regardless of income level, and therefore that a one-to-one displacement of poorer by richer households has no effect on regional VMT.

In the other two models (Table 4.2, columns 1 and 5), the results imply that higher-income households and lower-income households decrease their VMT in response to rail access more than middle-income households do. For all metropolitan areas, there is a positive statistically significant coefficient on the interaction of rail access and income of 0.38, and a negative coefficient on the interaction of rail access and income squared of -0.34. For Los Angeles, the coefficients are 0.86 and -0.7. These coefficients are somewhat difficult to interpret in numerical form so we have graphed them (Figure 4.3, below). Within rail proximity areas in both regions, higher income is associated with higher VMT, but the incremental effect of income decreases when income is higher. Controlling for other factors, in Los Angeles specifically and in the major metro areas in the state, the VMT reduction associated with rail access in the NHTS data declines steadily in the income range from $0 to $60,000 and increases again at higher levels of income until becoming largest at levels of household income exceeding $100,000 per year (Figure 4.3, below). In other words, in the models using NHTS data, the highest-income households have the largest VMT reduction associated with rail access; households with incomes less than $25,000 are not far behind; and households in the $50,000 to $75,000 range have the smallest VMT reduction (in fact, the NHTS model for Los Angeles implies that rail access leads to a small VMT increase for the middle range of income; however, as noted previously, the number of middle-income households living near rail in the Los Angeles subsample of the NHTS data is quite small so the results are somewhat suspect). It is important to reiterate here that the preponderance of evidence, from the larger and more recent CHTS dataset, implies there is no difference by household income in how much VMT declines in response to rail access. In fact, in two of the models, there is no evidence that rail is associated with VMT levels at all.

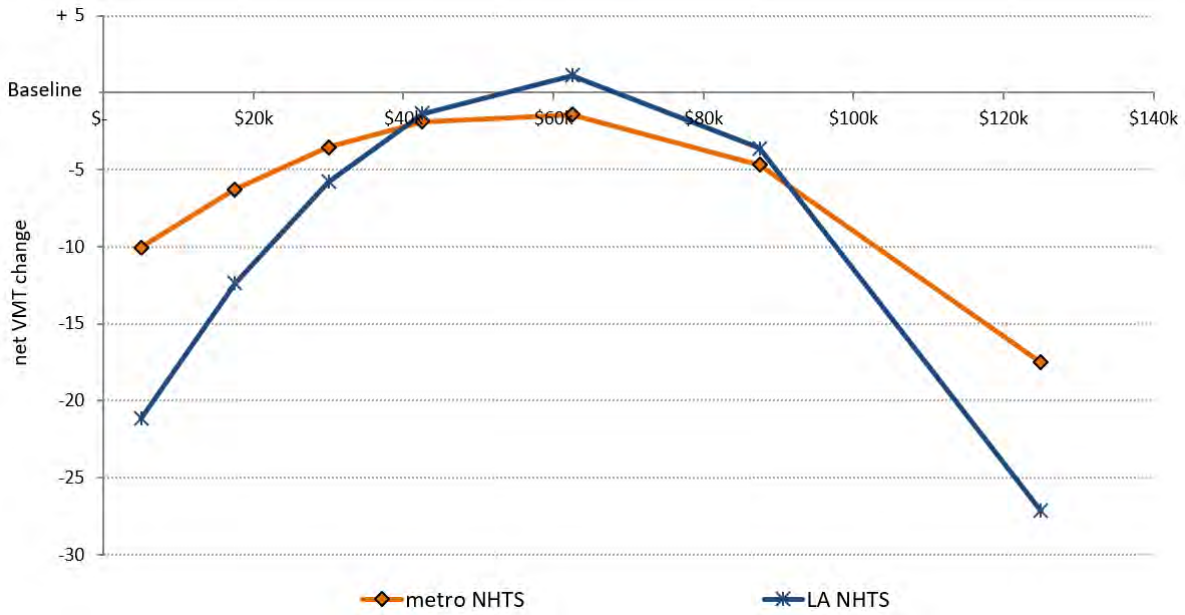

Figure 4.3: Net Effect of Household Income on Household Daily VMT (NHTS, Based on Models in Table 4.2)

A more flexible and potentially more accurate way to represent how VMT is affected by household income and rail access is to specify the income variables and their interactions with rail access as threshold variables for successively higher levels of income (Table 4.3, below), along with a linear coefficient for the effect of income represented numerically (with category midpoints). Using income thresholds is complicated by the relatively small sample sizes for income categories, particularly in the NHTS data as we elaborate upon below, but it is nevertheless instructive to compare this way of representing income effects, and we therefore do so.

In these models, each income threshold is represented by a dummy variable. For instance, the variable "Income > $10,000" equals 1 if household income is above $10,000, and zero otherwise. The remaining variables are specified the same way, so that the coefficient on each threshold variable measures the marginal difference in VMT associated with that additional household income increment. We removed those variables representing the interaction of rail proximity and income categories when they were not statistically significant, which accounts for the blanks in Table 4.3. Calculating the net effects for each income category requires summing the coefficient for "near rail," the product of the midpoint of the income category and the coefficient for "Income (1000s) + near rail," and, where present, the coefficient for the "Income > + [income threshold] + rail" variable. Since interpretation of Table 3 results is therefore complex, we also represent the results graphically (Figure 4, below). The figure uses dashed lines to represent NHTS model results (reflecting their lower sample size and therefore lower reliability), and uses solid lines to represent CHTS model results.

These models again find some evidence that rail proximity has different effects for households with different income levels, but again, not in the San Francisco Bay Area. In NHTS data for the major metros, the regression model finds a monotonic increase in VMT associated with rail access as household income increases (a reduction of 0.38 VMT per $1,000 in income), but with positive VMT increments associated with exceeding $10,000 in income and exceeding $35,000 in income (Table 3, column 1; Figure 4.4, dashed orange line). In this model, households with income between $35,000 and $50,000 increase their VMT when near a rail station. But with the CHTS data, though the shape

of the function is similar, there are no positive VMT effects of rail access. The CHTS model results imply that the reduction of rail access on VMT increases modestly with household income though there is a narrowing of the VMT reduction when income exceeds $25,000 (Table 3, column 2; Figure 4, solid orange line).

The San Francisco models with NHTS and CHTS data are completely consistent with the models shown in Table 4.2 in that there is no statistical significance of income interactions with rail (Table 4.3, columns 3 and 4; not represented in Figure 4.4). Thus we find no evidence in controlled models that the VMT impacts of TOD have different effects depending on household income in the San Francisco Bay Area.

Finally, we turn to the models for Los Angeles, where results vary based on the data being used. We begin with the model that uses NHTS data (Table 4.3, column 5; Figure 4.4, dashed blue line). At the lowest level of income, rail access is associated with a reduction of 19.77 VMT (see coefficient on "near rail"), but each additional $1,000 in income beyond that increases VMT by 0.42 miles (see coefficient on "Income (1000s) + near rail") until, when income exceeds $75,000, there is a reduction of an additional 19.67 VMT associated with rail access (see coefficient on "Income>$75,000 + near rail"). The additive effects of these coefficients means that between about $45,000 and about $70,000 in income, this model predicts an increase in VMT associated with rail access, and that the income category having with the biggest VMT reduction due to rail access is households earning between about $70,000 and $80,000. However, as noted previously, we view the NHTS results with some skepticism due to the very small number of households living near rail in each of the income categories, particularly since above $50,000 in income there are a total of only 51 such households.

The model using CHTS data for the Los Angeles region had reasonable numbers of households in the different income categories, with 276 households living near rail with household income exceeding $50,000 per year. This model shows no independent significance of rail access on VMT (the "Near rail" coefficient is small and statistically insignificant) and no significant continuous relationship between income and rail access (the coefficient on "Income (1000s) + near rail" is also small and statistically insignificant). But one variable, the interaction between having income exceeding $75,000 and living near rail, is large and statistically significant, implying that, controlling for other factors, households earning more than $75,000 per year, and living near rail, have fewer VMT per day than households in the same income category who live far from rail (Table 4.3, column 6; Figure 4.4, solid blue line).

Across the metro California and Los Angeles region models, the VMT reduction associated with rail access is greater for high-income households than for moderate-income households; moderate-income households have a smaller VMT reduction than the lowest-income households; and high-income households tend to have the same VMT reduction associated with rail access as the lowest income category for the CHTS data, while for the NHTS, which has lower reliability due to sample size issues, high-income households have a smaller VMT reduction associated with rail than lower-income households.

Table 4.3: Household daily VMT regressed on rail proximity, numeric income, income thresholds, interaction of numeric income and income thresholds with rail proximity; and demographic controls (NHTS and CHTS data)

	Metropolitan areas		SF Bay Area		LA Region	
	NHTS	**CHTS**	**NHTS**	**CHTS**	**NHTS**	**CHTS**
(Constant)	-1.62	-14.61**	-5.63	-7.45	-1.12	-19.33**
Near Rail	-13.54**	-9.40**	-4.67	-9.79**	-19.77**	-4.47
Income (1000s)	0.41**	0.07**	0.25	0.05**	0.55**	0.04*
Income (1000s) + near rail	-0.38**	-0.07**	-0.06	-0.03	0.42**	0.14
Income > $10,000	2.95	9.41**	7.64	0.58	-0.86	13.15**
Income > $25,000	7.04**	7.75**	4.51	11.79**	4.79	7.17**
Income > $35,000	-3.11*	7.65**	-0.41	10.25**	-4.34	7.12**
Income > $50,000	-0.29	5.33**	1.17	0.88	-0.08	7.52**
Income > $75,000	0.99	2.38	6.35	2.94	-2.12	2.69
Income > $100,000	-4.43**	3.08*	-5.98	2.91	-7.64**	5.62**
income>10,000 + near rail	16.71**					
income>25,000 + near rail		8.22*				
income>35,000 + near rail	16.65**					
income>50,000 + near rail						
income>75,000 + near rail					-36.10**	-19.67**
income>100,000 + near rail	13.75*					
Census tract housing. density (1000 /sq mi)	-1.00**	9.20**	-1.18**	-0.45	-0.99**	0.35
Census tract pop. density (1000 /sq mi)	-0.22**	-9.16**	-0.05	-0.70**	-0.26**	-0.88**
Household size	12.59**	-1.44	13.44**	9.93**	12.45**	9.76**
One-adult household	-10.81**	-4.78**	-9.38**	-9.95**	-9.97**	-7.09**
Household with children	4.20**	-0.45	7.95**	-1.42	4.11**	-2.82
Rental house	-9.14**	-0.63**	-9.53**	-5.58**	-9.19**	-4.56**
N	16,575	25,246	3,986	9,251	6,616	12,869
Log(scale)	3.8	4.16	3.76	4.12	3.86	4.18
Loglikelihood	-88350	-118600	-19640	-43330	-32920	-60540

*Note: ***: 99% significant; **: 95% significant; *:90% significant*

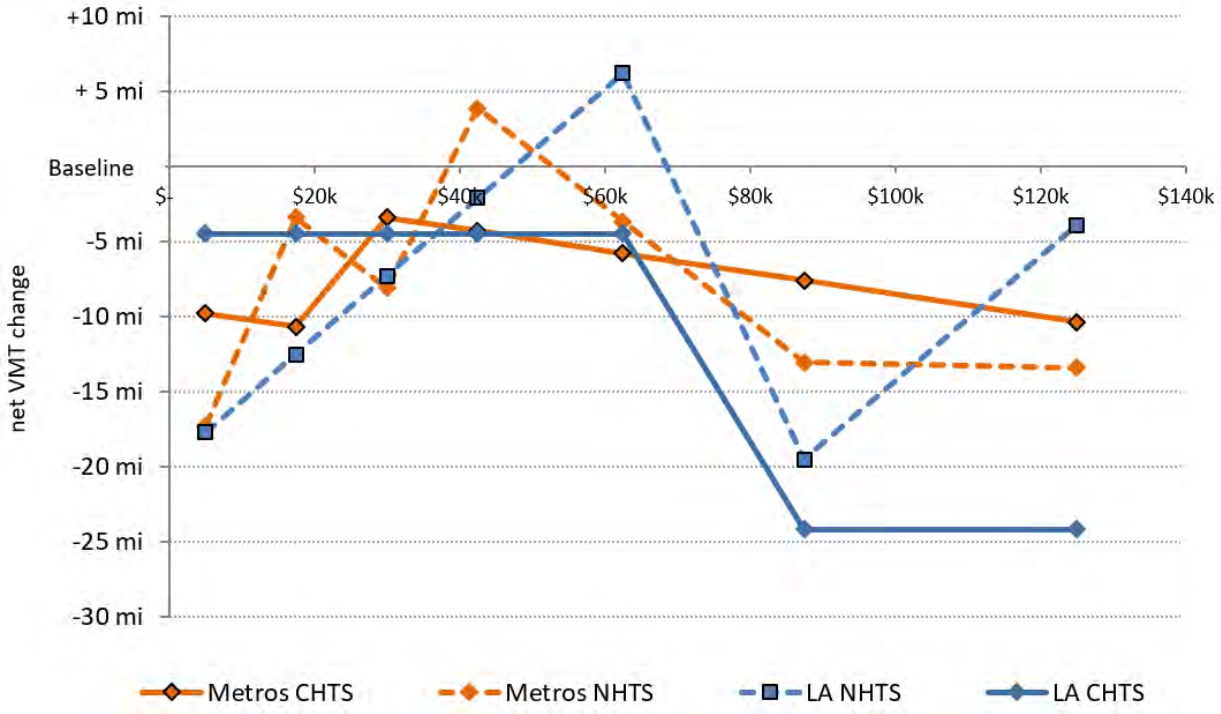

Figure 4.4. Net effect of rail proximity on household daily VMT, by income category – threshold models

Hypothetical gentrification and displacement illustrations

What seems likely to happen to regional VMT when a neighborhood gentrifies, given these findings? We begin our discussion of hypothetical gentrification and displacement scenarios with two simple illustrations and end with data on population change by income for four actual census tracts near rail stations in California that experienced an increase in the share of higher-income households.

For the sake of our first simple illustration, let us assume that there is an influx of 1,000 high-income households with an income level exceeding $100,000, who previously lived away from rail. Let us assume that they displace the same number of low-income households, with an income level below $50,000, from TODs to somewhere away from rail. What is the net impact on VMT of the richer households moving near rail, and the poorer households moving farther away? We used two different methods for the two data sets, thus calculating four results:

1. **Compare the near-station and outside-station average VMT figures from Table 4.1 for the lowest- and highest-income household categories.** This method does not control for other features of households that vary between households living inside and outside station areas. This uncontrolled method is arguably appropriate if self-selection is at work and if households require both motive and opportunity to reduce VMT, so that their self-selection, including their different demographic characteristics, is part of what enables a reduction in auto use (Chatman 2014).

2. **Use the Tobit estimation results shown in Table 4.2 (using the model for metropolitan areas) to predict net VMT change controlling for other factors.** We set the average income for low-income households at $25,000 (the midpoint of the lowest income group), and for high-

income households at $125,000. Note that the control variables do not need to be fixed at any particular value because the Tobit model is linear in parameters. In other words, there is no need to assume anything about household size or other characteristics of movers, given the model form.

With these assumptions and methods, we estimate the impact of displacement on regional VMT to range between zero effect (using a Tobit model on the CHTS data) and a reduction of 22% (using a Tobit model on the NHTS data) (see Appendix S, Table S.5). These results illustrate that a displacement of this type (of an equal number of higher income households moving in, and poorer households moving out) would not result in an increase in VMT regionally if the model results are generalizable.

However, note that a different kind of displacement in which a smaller number of high-income households displaced a larger number of low-income households, could in fact increase VMT on net simply by decreasing the total number of households with access to rail. This could happen if higher-income households took more space in new developments that consolidated or replaced denser housing near a rail station. Thus in a second stylized scenario, we assume that 1,000 low-income households are displaced by 500 high-income households (Appendix S, Table S.6). In this case the net regional VMT impact estimate ranges from a reduction of 7% to an increase of 23%. Clearly, the actual pattern of displacement will play a potentially large role in whether gentrification leads to a decrease or increase in regional VMT. In the next section we consider four additional scenarios of neighborhood change using census data to illustrate this point more explicitly.

Gentrification/displacement scenarios based on census data

We applied the same method to four census tracts near rail stations, three in the Bay Area and one in Los Angeles. Instead of using the continuous income models shown in Table 4.2, we used the threshold income models shown in Table 4.3, because these models had greater statistical significance for Los Angeles and because we wanted to apply region-specific estimates to carry out the scenarios. We identified the four census tracts using an online tool created as part of this research project (and described elsewhere in this report) which enabled us to find examples of census tracts with rail stations that experienced increases in the share of higher-income households between 1990 and 2013.

For the purpose of this next set of estimates we used numeric income midpoint values to generate average VMT. “Low-income households” are defined as those earning below 80% of the county median household income, according to 1990 Decennial census data and the 2009-2013 American Community Survey (ACS) (see Appendix S, Table S.7). We defined the income of this group of people as the midpoint between $0 and the dollar amount representing 80% of median household income (this midpoint was about $20,000 in both metro areas). We defined higher-income (or “non-low-income”) households as having income equal to 50% above the 2013 county median adjusted to 2010 dollars (which was about $80,000 in both metro areas). For the San Francisco Bay Area estimates, however, the household income assumption is irrelevant because in the Bay Area models we did not find any evidence of any difference in the VMT impact of rail access according to household income. But for Los Angeles the assumptions matter, since as we showed above, the VMT impacts of changes in population in the Los Angeles model results are partly dependent on the particular income levels of the population shifted in and out of rail station areas.

For our scenario analysis, we made the simplifying assumption that the added households in a tract moved from a location far from rail to a location close to rail, and that any reduction in the number

of households in the tract moved to a location far from rail. In other words, changes in the number of households by income category are considered moves into or out of a rail-proximate area, rather than as changes in income among resident households. We estimated regional changes in VMT between 1990 and 2013 assuming that 1990 travel patterns are consistent with findings from the contemporary CHTS and NHTS data. Because in actual fact vehicle use was substantially lower in 1990, our estimates could arguably be better understood as likely region-wide VMT impacts that would be caused by rapid gentrification in such a census tract in the region between, for example, 2008 and 2013.

Our first example is the census tract adjacent to the Hollywood/Western metro station, census tract 1905.10, in Los Angeles County (Table 4.4, part 1). The share of low-income households in the tract decreased between 1990 and 2013, from 78% to 69%, with an absolute reduction of 48 low-income households and an increase of 172 higher-income households. This neighborhood is a mixed-use area and had median household income below the county average in 2013, but a greater share of non-Hispanic whites and fewer households with children compared to county-wide shares. Table 5 shows the rough estimated change in aggregate VMT between 1990 and 2013 using the assumptions described above, and this change ranges from a VMT decrease of between 16% and 33%.

Our second example is census tract 5019 in San Jose, which has experienced increased densification around a transit station, for both low-income and higher-income households. San Jose has experienced an all-time high for housing costs while wages for low-income workers remain stagnant. New residents are more likely to be single or not have children, be highly educated, and earn higher salaries, but the tract has not experienced displacement, which is sometimes attributed to San Jose's anti-displacement policies and rent-stabilized units. From 1990 to 2013, this gentrifying tract gained 411 low-income households and 931 higher-income households. The VMT scenario estimates range from a reduction of 30%to a reduction of 36%, with one estimated reduction of 16.3% being statistically insignificant.

Our third example is a census tract (5003), also located in San Jose, which lost 190 low-income households and gained 447 higher-income households. Table 4.4 suggests that regional VMT would decrease about 19% to 25% overall after such displacement (with one estimated decrease of 10.32% being statistically insignificant). An increase in VMT due to lower-income households moving away from the rail station is more than made up for the decreases in VMT by higher-income households moving near rail. Note that in the case of San Jose specifically, given the low level of rail service available here, it is possible that VMT may not be much affected by rail access. But our sample sizes with these data do not allow us to estimate VMT impacts below the metropolitan area level.

Our final example is census tract 20,1 located in San Francisco's Mission District, a neighborhood that is often used as the face of gentrification. Despite the decreasing share of low-income groups between 1990 and 2013, over that period of time the tract gained low-income households, as well as higher-income households. Like the densification story of our second example (tract 5019), this example results in an estimated decrease in regional VMT ranging from 31% to 41% , with one reduction of 15.4% being statistically insignificant.

Table 4.4: Example scenarios showing estimated change in VMT in selected gentrifying census tracts

Census Tract 1905.10, Los Angeles County, California				
Change in Low-Income Households Near Transit (1990-2013)			-48	
Change in Non-Low-Income Households Near Transit (1990-2013)			172	
	Uncontrolled Analysis		Tobit Models[1]	
Aggregate VMT	NHTS	CHTS	NHTS	CHTS
1990	14,136.80	8,824.36	12,097.56	6,454.07
2013	10,470.08	7,366.20	8,652.68	4,262.90
% VMT changes	-25.94%	-16.52%	-28.48%	-33.95%
Census Tract 5019, Santa Clara County, California				
Change in Low-Income Households Near Transit (1990-2013)			411	
Change in Non-Low-Income Households Near Transit (1990-2013)			931	
	Uncontrolled Analysis		Tobit Models	
Aggregate VMT	NHTS	CHTS	NHTS	CHTS
1990	81,712.99	62,762.21	82,369.33	47,167.75
2013	56,446.20	39,652.18	68,927.32	29,958.65
% VMT changes	-30.92%	-36.82%	-16.32%	-36.48%
Census Tract 5003, Santa Clara County, California				
Change in Low-Income Households Near Transit (1990-2013)			-190	
Change in Non-Low-Income Households Near Transit (1990-2013)			447	
	Uncontrolled Analysis		Tobit Models	
Aggregate VMT	NHTS	CHTS	NHTS	CHTS
1990	36,816.18	28,064.98	37,974.69	20,438.55
2013	29,088.84	20,788.29	34,054.04	16,378.64
% VMT changes	-20.99%	-25.93%	-10.32%	-19.86%
Census Tract 201, San Francisco County, California				
Change in Low-Income Households Near Transit (1990-2013)			600	
Change in Non-Low-Income Households Near Transit (1990-2013)			440	
	Uncontrolled Analysis		Tobit Models	
Aggregate VMT	NHTS	CHTS	NHTS	CHTS
1990	52,799.60	40,483.60	54,341.95	29,769.24
2013	36,244.80	25,560.80	45,980.12	17,599.44
% VMT changes	-31.35%	-36.86%	-15.39%	-40.88%

[1] VMT estimates come from income category regression coefficients by the household income values and rail proximity, holding other independent variables at mean values (see article text). Note that the difference in values drives the net effect of each scenario. Since the regression models are linear in parameters, this difference does not depend on values of the other independent variables in the model.

These stylized displacement scenarios certainly fail to account for more complex real-world phenomena. For example, perhaps displaced households drive more after they move, at least for a while, in order to maintain social ties and participate in activities in their previous neighborhoods. And the dynamics of displacement go beyond income and include other factors that we cannot easily control for here. But we know of no strong reason to know whether such phenomena lead to either underestimation or overestimation of likely VMT impacts of gentrification and displacement. The direction of error is uncertain.

Chapter 4 Discussion and Conclusions

The central question of this chapter was to determine whether the presence of rail reduced VMT more or less for lower-income households than for higher-income households, and to provide an informed discussion of how neighborhood gentrification and displacement might therefore influence regional VMT. The limited amount of previous research on this question had not found much evidence that households of different income levels were more or less responsive to transit access. Such evidence would provide a new reason to fear gentrification and displacement, because it would imply that the intended environmental benefits of TOD programs are precarious. But our results suggest this fear is largely unwarranted, though further research would be helpful.

We used two different data sources and looked at pooled data for the major metropolitan areas in California as well as looking at the 9-county San Francisco Bay Area and the 5-county Los Angeles metropolitan area separately. Almost all results suggest that rail access affects VMT about the same regardless of income, if it affects VMT at all. In about half of the models, using mainly the less-reliable of the two datasets, we find a differential effect of rail access by income. Regardless of dataset or region, the results suggest that one-to-one displacement of middle-income households (between $25,000 and $75,000 in income) by high-income households (those earning more than $100,000) will either reduce VMT or have no significant effect on VMT. We also found some evidence that very-low-income households (below $25,000 in income) reduce their VMT in response to rail access more than middle-income households do, but this evidence is from the NHTS dataset which has small numbers of middle-income households living near rail. Finally, it is important to note that some of our model results implied that rail access has no independent impact on VMT, and therefore that gentrification and displacement near rail stations will have no impact on GHG reduction.

We note that concerns about TOD-caused gentrification may be over a much more spatially-specific and policy-specific phenomenon than simply rail proximity, our focus here. But the policy landscape in California and elsewhere does privilege proximity to rail or other high-quality transit, making these results clearly policy-relevant. Any more-narrowly tailored research question is also of smaller potential magnitude and importance than the question we have focused on here, and more difficult to empirically investigate because of sample size problems with existing data.

The second focus of the paper was to construct plausible scenarios of VMT changes associated with neighborhood change and displacement in specific rail-proximate census tracts between 1990 and 2013. In all of these scenarios, we found reductions in regional VMT, for two reasons. First, as already noted, most of the data analysis suggests that higher-income households reduce their VMT more in response to rail proximity than do lower-income households. Second, census tracts near rail stations that underwent gentrification in California between 1990 and 2013 also typically increased in population. Any increase in the number of households having proximity to rail will tend to reduce regional VMT, in cases where rail access is substantial enough to reduce household reliance on auto use, or in TOD areas that have low parking levels, high density, and other characteristics that support good transit access. Thus, we do not find evidence that most kinds of gentrification and displacement around rail stations would increase VMT regionally, even if it does increase local VMT generation within rail station areas.

As noted, the analysis also provides some evidence that some kinds of neighborhood change could cause regional VMT to increase. For example, in Los Angeles, a pattern of one-to-one displacement of low-income households (those making less than $25,000 per year) by moderate-income

households (those making between $25,000 and $75,000 per year) could increase VMT. These statistical results, found in NHTS data only, are our most questionable due to a small sample size for moderate-income households living near rail stations. But the result is intuitively reasonable due to the built form and land use policies in the Los Angeles region. In particular, there has until recently been very little relaxation of parking standards in Los Angeles for either new development or redevelopment near rail stations, suggesting that proximity to rail may have little effect on auto use among households who can afford to own autos.

In some cases, anti-displacement policies may have helped rail station areas (particularly, areas with high transit accessibility and high driving costs) to retain lower-income households, or to densify rather than displacing households, without dampening housing production there. Our analysis suggests that such policies would have clear regional VMT benefits. However, given the likely household income profile in California urban areas, our analysis also suggests that a policy that reduced market-rate housing development in locations that encourage lower auto use, even if the policy reduced displacement and preserved affordable housing, would likely result in a net regional increase in VMT compared to a policy that increased the production of (dense) housing near transit.

Finally, the regional VMT impacts of population changes near rail stations critically depend on whether rail-proximate neighborhoods have low parking, high density, and other built environment factors that we were not able to control for in these data (Chatman 2013). Regardless of household income level, rail access is likely not the most critical factor in determining how much households reduce their auto use when they move into and out of rail station areas.

Future refinements to this analysis, which were not possible for us to complete given the scope and timeline of the larger research project for the California Air Resources Board, could include several tasks. First, it would be helpful to investigate a larger number of neighborhood-change scenarios to give a more context-specific sense of the conditions under which gentrification is likely to lead to regional increases in VMT, and even to estimate in what share of tracts statewide these results would predict VMT increases to occur. Second, our models allowed for an interaction of income and rail proximity but did not similarly investigate other interactions. Specifically, we did not investigate whether the effect of rail access varies according to household size, whether rail access effects are influenced by neighborhood population and employment density levels, or whether effects vary by rail service type. (We expect that some of these analyses would yield statistically insignificant results due to small subsample size.) Third, the use of “sample selection” models in addition to the Tobit and OLS estimates we carried out would provide an additional technical robustness check on the validity of these results. However, we expect such models to yield very similar results.

Chapter 5: Anti-Displacement Policy Analysis

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Acronyms Used in This Chapter

- ABAG (Association of Bay Area Governments)
- ACE (Altamont Commuter Express)
- ACS (American Community Survey, U.S. Census)
- ACTC (Alameda County Transportation Commission)
- AMI (Area Median Income)
- CASP (Cornfield Arroyo Seco Specific Plan)
- CBA (Community Benefit Agreement)
- CBO (Community-Based Organization)
- CCDC (Chinatown Community Development Corporation)
- CHPC (California Housing Partnership Corporation)
- CMA (Community Management Association)
- CPIO (Community Plan Implementation Overlay)
- EIR (Environmental Impact Review)
- HCD (California Department of Housing and Community Development)
- HUD (U.S. Department of Housing and Urban Development)
- LAANE (Los Angeles Alliance for a New Economy)
- MTC (Metropolitan Transportation Commission)
- OBAG (One Bay Area Grant)
- PDA (Priority Development Area)
- RHNA (Regional Housing Needs Assessment)
- SCS (Sustainable Communities Strategies)
- SDC (System Development Charges)
- SEACA (Southeast Asian Community Association)
- SNAP (Station Neighborhood Area Plan)
- SRO (Single-Room Occupancy)
- Thai CDC (Thai Community Development Corporation)
- TIF (Tax Increment Financing)
- TLC (Transit for Livable Cities)
- UNIDAD (United Neighbors in Defense Against Displacement)

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Many different anti-displacement and affordable housing policies exist at the city, regional, and state level. This chapter first summarizes the policies and programs available to combat displacement and then assesses which Bay Area and Los Angeles cities offer them. It then examines the potential of regional planning, specifically, station area planning and incentive programs related to the Sustainable Communities Strategies, to mitigate displacement. The chapter concludes that although some mechanisms exist to mitigate displacement, little is known about their effectiveness and in any case, implementation is weak.

Chapter 5 Introduction and Methodology

Many different policies and programs can mitigate the displacement impacts of transit investment-induced gentrification. The following presents a discussion of different housing affordability and anti-displacement policies, as well as an inventory of the policies that exist in the 89 jurisdictions of Los Angeles County and the 109 jurisdictions of the 9 county Bay Area. The purpose of the inventory is to highlight and better understand the policies that can promote affordability or mitigate displacement of vulnerable populations in gentrifying neighborhoods. Where possible, we highlight policies that have been effective specifically in transit neighborhoods. We describe the most common housing affordability and anti-displacement policies and analyze, as well as compare, the policies of both regions.

In what follows, we first offer an overview of the multitude of anti-displacement policies encountered in cities across the country and a review of the literature on anti-displacement policies, as a way of introducing the policies and discussing how other scholars and practitioners write about them. Next, we provide an overview of anti-displacement policies in two metropolitan regions: the San Francisco Bay Area and Los Angeles. Given the potential for displacement around fixed-rail transit stations, we next include a section on anti-displacement policies specific to transit-oriented development (TOD), before turning our attention to specific policies that, while benefitting transit regions, are not explicitly targeted towards them.

We discuss four specific policies: inclusionary zoning and condominium conversion ordinances, because of their prevalence in Los Angeles and the Bay Area; rent control, because of its importance in the anti-displacement discourse, effectiveness, but lack of prevalence and state-imposed limitations; and mobile-home rent control ordinances, because of their prevalence in the Los Angeles region.

To understand how such strategies work at a finer grain, we provide six case studies of specific neighborhoods that, in most cases, have experienced gentrification pressures but less gentrification than expected (as determined by our analysis in Chapter 2)—three in each region. In the Bay Area, we discuss neighborhoods in Chinatown in San Francisco, East Palo Alto, and San Jose. In Los Angeles, we discuss Chinatown, Hollywood/Western, and 103rd St./Watts Towers. Our conclusions appear in the last section.

In terms of methods, this report relied on literature review and secondary data analysis, as well as primary data from surveys and stakeholder interviews. We reviewed both academic and practitioner literature on anti-displacement strategies. For secondary data, we used Decennial Census and American Community Survey (ACS) data from the U.S. Census as well as various other datasets. A survey on the effectiveness of anti-displacement strategies was sent to staff at all of the planning departments in the Bay Area as well as housing-related community-based organizations

(CBOs); we refer to responses from this survey as "stakeholder" comments. Finally, we conducted interviews with many stakeholders, including community advocates, staff of community organizations, and individuals involved with local, regional, and state policy.

Anti-Displacement and Housing Affordability Policies: Literature Review

The emphasis of this literature review is on residential anti-displacement and housing affordability policies.[1] While the existing literature does not provide a systematic assessment of the effectiveness of anti-displacement policies, the metrics, conditions needed for success, and methods of evaluation used in the various studies are useful to our analysis.

Research Methodologies

In general, the literature on anti-displacement policies can be classified into three categories of research methodologies: 1) policy toolkits; 2) case studies; and 3) analysis and evaluation of a specific policy.

The policy toolkit is a particularly popular format among practitioners, in which authors outline an array of policies that cities could implement, describing how they work and giving brief examples of their implementation in various neighborhoods or cities. (Allbee et al. with ChangeLabSolutions 2015; Great Communities Collaborative 2007; Policy Link 2008a). These inventories group certain policies together, often distinguishing between policies that preserve existing affordable housing (subsidized or market-rate affordable) and those that produce new affordable housing. Discussion around the different strategies considers how they are financed, what challenges they face, and where they are most appropriately applied.

A second category of research presents detailed case studies of cities or geographic contexts from which lessons can be drawn. Some focus on just one study area, providing a comprehensive list of anti-displacement policies that have been implemented there or highlighting one of its programs that was particularly successful. Another variation of the case study compares and contrasts policies in two or more places. Comparative studies may assess the performance of similar policies in two cities and pinpoint unique factors that affected their respective success rates. Other studies consider multiple neighborhoods experiencing gentrification pressures and draw conclusions about policy implementation more generally.

Finally, a third category of studies focuses on a specific policy. These studies tend to focus on places where the policy was implemented, and seek to provide a critical analysis of the effectiveness of the policy. This category is most useful in outlining the strengths and weaknesses of policies or sets of policies used in tandem.

[1] This literature review is focused on residential displacement; a separate suite of policies is available to address commercial displacement. While a wealth of studies have focused on residential gentrification and displacement, very few scholars have examined commercial gentrification. As a result, the literature on policies addressing commercial gentrification and displacement is largely nonexistent.

Gaps in the Literature

Gaps in the literature include the relative absence of discussion of unsuccessful policies (negative case studies) or examples of policy limitations or misapplications. This is probably due to the fact that most of the anti-displacement literature is action-oriented, and often written by policy centers to help policy makers with future implementation. Therefore, studies are often written prospectively—they diagnose an ongoing problem and propose solutions moving forward (for example, Pollack et al. 2010), as opposed to retrospectively, giving a critical analysis of a problem, the solutions put forward, and their effectiveness at addressing the problem.

Approaches to Evaluation

A number of quantitative metrics, or indicators, emerge from the literature that can be used to evaluate the effectiveness of certain policies. We discuss three here.

A common measure is the number of housing units preserved or developed, and is most useful for evaluating preservation and production strategies. Studies that present the numbers of units preserved or created as a proportion of the larger housing stock show the relative contribution of a specific policy given the scope of the problem. However, authors frequently present such data.

A second metric is the level of affordability of housing units. Different anti-displacement policies are targeted toward or end up benefitting households at different income levels; therefore, this metric estimates the number proportions or residents of different income levels benefitting from a specific policy. This is most useful for evaluating production strategies.

Other studies focus on qualitative approaches. Authors use qualitative sources, such as government records, focus groups, and interviews, to identify contributors and barriers to success and to detail recommendations for a particular study area. This is a good approach for improving a policy that has already been implemented, or has widespread support.

Lastly, several studies take a historical approach, tracing the impact of a certain set of policies, usually in a specific place (Calavita et al. 1997; Furman Center for Real Estate and Urban Policy 2006).These studies provide greater insight into the potential trajectory of certain policies over an extended period of time, distinguishing between short-term and long-term solutions.

Discussion of Policies in the Literature

Anti-displacement policies found in the literature can be grouped roughly into four categories: those that produce new affordable housing, those that preserve existing affordable housing, those that protect tenants, and those that build the assets of low-income residents (Table 5.1).

Table 5.1: Affordable Housing and Anti-Displacement Strategies

Affordable Housing Production Strategies
Fiscal Strategies
Affordable housing impact fees
Jobs-housing balance or commercial impact fees
Community benefits agreements
Housing production trust funds
Taxing Powers
Tax exemptions for non-profit affordable housing
Levying parcel taxes, tax-increment financing districts
Bonds
Land Use Controls
Expedited permitting processes for affordable housing
Reduced parking requirements for affordable housing
Inclusionary housing/zoning
Density bonus in exchange for building affordable units
Accessory dwelling units
Assets and Investments
Public land dedicated to affordable housing
Land banking
Preservation Strategies
Rent stabilization/control
Condominium conversion ordinances
No-net-loss, one-for-one replacement strategies
Single-room occupancy hotels rent and conversion controls
Mobile home rent controls
Tenant protections and support
Rental assistance
Tenant counseling
Proactive code enforcement
Just-Cause eviction policy
Tenant right to purchase laws
Asset Building and Local Economic Development
Minimum wage
Wage theft protections
Local or first source hiring ordinances
Individual development accounts
Homeowner assistance programs
Housing rehabilitation funds

Affordable Housing Production Strategies

Restricting the production of affordable housing are several factors. High land costs, exacerbated by competition among developers (market-rate and affordable), further drive up production costs. Infill development, while incentivized through state programs, is more expensive, and can be difficult in terms of navigating regulations. Further, according to a non-profit developer, staffing is "inelastic:" it's hard to compete with market-rate developers with more money.

Cities have a number of tools at their disposal to influence the quantity of affordable housing in their neighborhoods, including fiscal strategies to generate resources for development, land use

policies to incentivize or prioritize certain types of developments, and public investments that can be tied to affordability requirements.

Fiscal Strategies

Numerous jurisdictions have used development fees and transaction fees to generate funds from the private housing market as a means to creating affordable housing. Examples of these include affordable housing impact fees, jobs-housing balance or commercial impact fees, community benefits agreements, and housing trust funds.

One Oakland expert sees impact fees as a policy that is "starting to catch on" given legal limitations on inclusionary zoning; impact fees provide an alternative way to generate affordable housing at a cost to market-rate developers. While less common, commercial impact fees are also emerging. One development fee program that has enjoyed notable success is Boston's commercial linkage fee program (Kim 2011). This program raises about $5-$7 million a year for housing, funding the creation or preservation of more than 8,500 units of affordable housing in projects throughout Boston from 1983 to 2011 (Kim 2011). The strength of the program is attributed in part to its "breadth of coverage." Tied to all private commercial development, "everything from university projects to hospital expansions trigger the linkage ordinance," so the City of Boston has a steady revenue stream each year (Kim 2011 p. 42).

When impact fees are in place, jurisdictions can further facilitate production by granting developers an exemption from affordable housing projects. For example, the City of Portland requires that developers pay system development charges (SDCs) to help offset a project's impact on the city's parks and recreation facilities, storm water and sanitary sewer systems, water systems, and street infrastructure (Kim 2011). They offer exemptions to SDCs for affordable housing projects, and the cost savings can add up to hundreds of thousands of dollars. As of 2011, the exemption had "reduced development costs for more than 2,225 units of affordable housing" (Kim 2011 p.27).

Another key tool for affordable housing production are housing trust funds. These funds are created by local or state governments as a pool of fees and taxes derived from real estate development (or other sources) that can be drawn upon to provide gap financing for the preservation or new construction of affordable housing (Calavita and Grimes 1992). One of their useful features is that, once established with their criteria for distributing monies, new sources of revenue into the fund can be approved—and the resulting funds distributed—without a whole new advocacy push around what to spend the funds on.

The importance of a housing trust fund was underscored by an expert interviewed, who believes that, in terms of revenue-generating policies (like commercial impact fees), "it's very rare that any of those fees or policies by themselves can really stimulate production. What you need is a trust fund that has multiple sources that feed into it."

Taxing Powers

A city's taxing powers can also be used to create an affordable housing fund or incentivize development, such as providing property tax exemptions for non-profit owners of affordable housing, levying a parcel tax or floating bonds to generate funding for affordable housing, or

creating tax increment financing (TIF) districts[2] to generate revitalization funds by borrowing against future improvements in land value.

One study looks at New York City's "Ten Year Plan" launched in 1985, which called for the building and rehabilitation of 100,000 units of affordable housing by non-profit and private developers, funded through bonds, the city's capital budget, and other state and federal sources (Furman Center for Real Estate and Urban Policy 2006). It was largely successful: by 2003, the city "had created over 34,000 affordable units through new construction, had restored nearly 49,000 affordable units through the gut rehabilitation of formerly vacant buildings, and had provided renovation subsidies to another 125,000 units of distressed and occupied buildings" (Furman Center for Real Estate and Urban Policy 2006 p.6). The authors find several factors to have enabled the plan's success: "the income mix of households; the focus on preservation and neighborhood revitalization; the cooperation with local institutions; and the overall level of public commitment" (Furman Center for Real Estate and Urban Policy 2006 p.8).

The City of Portland has also made significant gains by implementing TIF districts, which allocate 30% of funds to the city's designated urban renewal areas for the development and rehabilitation of affordable housing (ChangeLabSolutions et al. 2015, Kim 2011). The TIF funds have income guidelines that prioritize the city's most economically vulnerable populations. In the 2012-2013 fiscal year alone, the Portland Housing Bureau was able to use $28 million of TIF funds in order to create or preserve 959 units throughout the city (ChangeLabSolutions et al. 2015).

Land Use Controls

Cities' land use control and zoning powers are often used to incentivize the production of affordable housing by reducing costs through expediting permitting processes, reducing parking ratios, and easing other requirements that increase development costs. Land use controls can also be used to create inclusionary housing requirements on market-rate developers, requiring that a certain fraction of the units they develop be affordable.

Our literature search using the key words "anti-displacement strategies" and other related terms turned up multiple studies on inclusionary housing—far more than for any other policy (Schuetz et al. with Furman Center for Real Estate and Urban Policy 2007; Hickey 2014; Non-Profit Housing Association of Northern California 2007; Hickey et al. 2014).This could indicate the effectiveness or ubiquity of inclusionary housing in light of the lack of other financing mechanisms for the production of affordable housing. However, it more likely indicates how intricately the policy is tied to anti-displacement work; municipalities tend to implement inclusionary housing in a real estate market experiencing significant growth and development, where households are at risk for displacement.

The Furman Center for Real Estate and Urban Policy (2007) has looked at inclusionary zoning policies across the United States and found that specific factors can predict the adoption of inclusionary zoning policies: "larger, more highly educated jurisdictions and those surrounded by neighbors with inclusionary zoning are more likely to adopt such policies." They find that the policies that produce the most units are those that have been in place the longest (Furman Center

[2] While the elimination of redevelopment agencies has made this strategy impossible to utilize in California, a recent law signed by Governor Brown enables localities to establish "community revitalization investment authorities" (Young 2015). These will allow tax increment financing districts, albeit in a more limited capacity than were allowed under the former redevelopment agencies.

for Real Estate and Urban Policy 2007, p.4). In some California cities, state legislation is the primary motivation for the adoption of inclusionary housing policies. For example, a survey by Calavita and Grimes (1998) found that eight jurisdictions in San Diego County implemented inclusionary housing programs to avoid actual or perceived threats of litigation due to noncompliance with the state's Housing Element Law.

Advocates of inclusionary housing often cite California as a success story because so many cities have adopted ordinances, but the data shows that the number of below-market units actually built resulting from the policy is modest in comparison to regional housing needs (Powell and Stringham 2006). For example, Powell and Stringham point out that the Association of Bay Area Governments estimated the need for 133,195 affordable units in the San Francisco Bay Area during the 2001-2006 period, but in the 30-plus years of inclusionary zoning leading up to 2006, the policy had resulted in the production of only 6,836 affordable units. Thus, much of the literature asserts that inclusionary housing should continue to be part of an overall affordable housing strategy but not necessarily the core of it (Calavita et al. 1997, Powell and Stringham 2006).

As opposed to requiring affordable units (either directly or through in-lieu fees), some cities choose to incentivize them through density bonuses. California's Density Bonus Law requires that municipalities allow developers to build at higher density in exchange for affordable units (APA 2006). Density bonuses act as a cost off-set and can increase the number of inclusionary units in new developments, specifically in cities where there is significant market interest in developing taller buildings (ChangeLabSolutions et al. 2015). For example, New York City rezoned a number of locations to allow for higher density and provided a strong density bonus for developers that agreed to meet specified affordability targets. The program generated about 2,700 permanently affordable rental units between 2005 and 2013 (ChangeLabSolutions et al. 2015).

However, without the proper market, incentives alone may not be enough to produce affordable units (Schwartz et al. 2012). For example, the City of Cambridge, Massachusetts, had a voluntary inclusionary zoning program that offered density bonuses, and over the course of a decade, the program failed to produce a single unit. In 1998, the program was made mandatory, and as a result, it produced 385 affordable rental and for-sale homes by 2010 (Schwartz et al. 2012).

For built-out areas that may lack sufficient developable land for new units, jurisdictions may consider allowing homeowners to create accessory dwelling units on their property, as enabled by the state Second Unit Law (AB 1866). Chapple et al. (2012) discuss how the creation of secondary units (known as "in-law" or "granny" units) helps increase the stock of very-low- and low-income housing units without dramatic increases in parking demand and with no government investment required. This in turn, "could help to free up such scarce (and dwindling) monies for the subsidization of the lowest-income affordable developments" (p. 12). Through a qualitative review of planning and zoning restrictions, they found that the regulatory environment, with its onerous parking requirements, is the most significant barrier to secondary unit development.

Assets and Investments

Finally, cities can use their assets and investments to generate new affordable housing. Affordable housing advocates are beginning to push jurisdictions to dedicate land they own for affordable housing (Hickey and Sturtevant 2015a; Lane and Seifel 2015). Cities can also invest in land that they later open up for affordable housing development, a process known as land banking. In addition to owning a lot of land, cities continually invest in infrastructure and operate other programs that can be leveraged to create affordable housing.

For example, Hickey and Sturtevant (2015b) discuss policies to use public lands for the development of affordable housing in the Washington, D.C., region. They find that the "strongest" policies have much community engagement and are conscious of the limits of the policy, namely that other subsidies will be necessary for affordable housing to be built beyond just providing the land. They offer recommendations of how to maximize policies' effectiveness, admonishing policymakers to understand the "relationship between land values and the affordability gap" so that they are aware exactly what kind of difference the land donation would make for developers of affordable housing (Hickey and Sturtevant 2015b, p.1).

In another study prepared for HUD, Sage Computing (2009) discusses the successful use of land banks to simultaneously revitalize abandoned properties and provide affordable housing. The study describes the work of the Fulton County/City of Atlanta Land Banking Authority, which prioritizes the transfer of land for affordable housing development, enabling community development corporations and other affordable housing developers to acquire tax-delinquent properties with insurable title at below-market prices for affordable development. The authority facilitates the transfer of 50-100 properties per year, and as of 2009, affordable housing groups had identified over 140 parcels to bank for future development. The land bank is also part of the Atlanta TOD Collaborative, a 13-member partnership of local non-profits, developers, banks and government agencies aimed at promoting equitable TOD in the Atlanta region ("Atlanta TOD Collaborative," n.d.). The group was established in 2011 to leverage their joint resources to create affordable homes for low-income residents near transit, and it has conducted strategic planning, market, and feasibility studies since then to guide their future development efforts ("Atlanta TOD Collaborative," n.d.).

One expert interviewed saw a connection between community land trusts and the "tiny home" movement: holding land in a community trust and allowing the construction of cottages on that land could provide an "eco village" of affordable homes.

Recognizing that the boom period will likely be followed by a downturn, several stakeholders have said that cities should be ready to strike quickly when that downturn comes, buying up land for later development, or getting anti-displacement policies in place when the political temperature isn't so high.

Preservation Strategies

In many built-out neighborhoods experiencing gentrification pressures, there may be little room for new developments. Therefore, strategies for preserving both deed-restricted affordable units and naturally occurring affordable rental units are needed to counteract displacement forces in these communities. Rent stabilization is perhaps the most well-known strategy used to control the price of non-subsidized rental units, often tying it to inflation rates. Other strategies used in high-demand markets are controls for condominium conversions, adopting no-net-loss or one-for-one replacement policies to ensure that the quantity of affordable units are maintained, and laws that aim to preserve single-room occupancy hotels and mobile homes.

Of the policies discussed in this report, rent control has yielded the most literature with critical analysis. Writing primarily from an economics framework, numerous scholars have undertaken analyses of rent control, generally concluding that it reduces the quality and quantity of rental housing (Keating et al. 1998). They argue that when landlords cannot earn a competitive return on

rents, they under-maintain their units and look for more profitable uses, exacerbating the rental housing shortage (Keating et al. 1998). The less rental housing and the greater the rent gap between regulated and unregulated units, the less mobility renters have (Freeman and Braconi 2004; Munch and Svarer 2002; Keating et al. 1998; Gyourko and Linneman 1989).

However, other scholars point out that the benefits of rent control may outweigh the cost of market distortions in the context of gentrification and displacement. Freeman and Braconi (2004) posit that the limited mobility caused by rent control may be a logical trade-off in gentrifying areas because it allows vulnerable residents to stay in their neighborhoods by moderating their rent burdens. For example, rents for unregulated units in gentrifying neighborhoods of New York between 1996 and 1999 increased by an average of 43.2%, while rents for regulated units increased by only 11.4% (Freeman and Braconi 2004). Ellen and O'Flaherty (2013) also suggest that rent control can contribute to population stability and security of tenure in the face of displacement pressures. For example, 35.2% of renting households in New York stayed in the same unit from 1990 to 2000, while nationally, 13.6% stayed in the same unit (Ellen and O'Flaherty 2013). Minton (1996) prospectively evaluates the potential of targeted rent control to limit displacement in soon-to-gentrify neighborhoods, finding that rent control, in the short run, would have winners and losers: helping low-income renters to afford to stay in their neighborhood while distorting the housing market, which in turn creates an incentive for landlords to use unsavory methods to remove tenants and win a higher return. He also considers the long-term effects, which range from halting gentrification entirely to full gentrification, when the policy fails to preserve a low-income community in a neighborhood.

Barton's (1998) historical account of strong rent control in Berkeley concludes that its undoing was less economic than political. The policy was established at a time of rapid rent increases in the Bay Area, and while Berkeley also suffered a decline in low-rent units, its decline was half the rate of the Bay Area as a whole and half the rate of Alameda County (Barton 1998). The initial strong policy successfully increased community stability and tenure for low-income households. However, Barton also takes note of its limitations: 70% of the lowest-income residents still shouldered rent burdens greater than 30% of their income, insufficient staff hindered efficient implementation, and controls were gradually loosened over time because of strong landlord resistance at the local and state levels.

The effectiveness of rent control laws depends significantly on the specifics of the policy and the market. For example, ordinances that include vacancy decontrol provisions "reduce the number of affordable units over time" because each time a tenant moves out, the rent can increase to the market rate (Levy et al. 2006, p.17).

In California, due to the Costa-Hawkins act, passed in 1995, all rent control ordinances must allow for vacancy decontrol. This gives landlords an "incentive to push out tenants, which can lead to unjust, or no-fault evictions" (Great Communities Collaborative 2007, p.4). The law also makes it impossible for jurisdictions to pass rent controls on any units built after 1995, on single-family homes, and on condominium units (Portman and Brown 2013).

Tenant Protections and Support

Another important tool to stabilize gentrifying communities is sufficient protections for tenants and homeowners to be able to stay in their homes. These can run the gamut from providing rental assistance and tenant counseling to proactive code enforcement and requiring landlords to have a "just cause" when trying to evict tenants.

The Harrison Institute for Public Law (2006) studied Washington, D.C.'s tenant purchase law, coming out generally in support of the policy: it has "been the catalyst for preserving thousands of affordable homes in Washington, D.C., often in neighborhoods that have been undergoing gentrification", "has preserved hundreds of units" of low-rent housing, and has allowed "low-income residents to purchase homes" (p. 2). The authors also offer a detailed critique of the law's shortcomings and a set of recommendations. Through qualitative research, they identify "areas of concern", including poor data management, lack of resident familiarity with the policy, the availability of technical assistance, and availability of funding.

Winstead (2006) discusses barriers to the tenant protection movement in Richmond, CA. He concludes that the lack of hard evidence of a tightening in the rental market and the difficulty of obtaining evidence of unjust evictions pose the greatest obstacles. Because of the evidence gaps, there is no public sense of "crisis" around rental housing in Richmond, which makes it difficult to garner political support for greater tenant protections. Winstead argues that advocates should focus on the implementation of a well-written just-cause ordinance that would include record-keeping provisions to make further action to protect tenants much easier. He also notes that a tenant protection campaign in Richmond centered on just cause would receive less opposition from landlords and property owners than one pushing for rent control (Winstead 2006). In general, experts argue that without a just-cause evictions policy in place, other preservation strategies will not work, because landlords can remove tenants very easily. It is very difficult to win against landlords in places without these policies, because any challenge to the landlord could result in eviction—forced or through raised rent—and it is hard to prove retaliation.

Asset Building and Local Economic Development

In addition to working on maintaining a sufficient affordable housing stock, jurisdictions can also support their residents by increasing their capacity to obtain housing. A diverse array of asset building and local economic and workforce development programs have been implemented around the country. These include the ever-growing movement to increase the minimum wage, implementing strong wage theft protections, and local or first-source hire ordinances that require a certain percentage of workers to be from the local disadvantaged community (PolicyLink 2015). Other asset-building strategies such as individual development accounts, homeowner assistance programs, and housing rehabilitation funds, among many others, are necessary elements to a comprehensive community stabilization strategy.

Minimum wage as an asset-building strategy has many ends: improving personal well-being, enhancing economic security, increasing civic behavior, and more (Page-Adams and Sherraden 1997). As such, the literature on minimum wage and similar strategies is not explicitly focused on addressing displacement, but scholars writing inventories of anti-displacement policies frequently include minimum wage in their lists because it may allow residents to build sufficient assets to be able to stay in an ascending neighborhood. However, minimum-wage policies have also received scrutiny. For example, there are many studies that evaluate the effects of minimum-wage laws on

levels of employment (Doucouliagos and Stanley 2009), and others on the number of hours worked (Couch and Wittenburg 2001).

Lester's (2009) study challenges this criticism, finding that a living-wage law is unlikely to harm a city's economic development prospects and is the only tool that individual jurisdictions can effectively use to address rising income inequality. He finds that living-wage laws not only provide direct wage increases for workers, but they may also help raise wage standards across the sector due to competition among firms for workers. In San Francisco, living-wage advocates explicitly linked wages and with ongoing debates around land use and displacement. Pitching their argument in terms of the high cost of living in the city contributed to their success in passing legislation(Lester 2009).

Whatever the efficacy of income- and wealth-building strategies, stakeholders interviewed emphasized that they must be linked to anti-displacement policies that target housing costs in order to address the affordability crisis effectively.

General Conditions for Implementation and Effectiveness in TOD Neighborhoods

The conditions for policy effectiveness and implementation are an important component of policy analysis that several authors have undertaken. Levy (2006) discussed tactical barriers to policy implementation, such as the requirement that they be enacted by legislation, market considerations, like the importance of a strong housing market for certain policies, and barriers to effectiveness once implemented, like what level of affordability a policy creates. She provides a good precedent for analysis, as she first outlines the policy, describes "anticipated outcomes," "implementation challenges," and also includes "timing considerations" that focus on which policies are best suited to which market conditions and which gentrification phases.

In interviews, stakeholders pointed out that the context of the city matters tremendously in terms of which policies work best. For example, a production strategy in San Francisco with little available land for development will look different from one in San Jose that has more land available for development; renter protection policies are only useful in places with many renters; the effectiveness of a density bonus will depend on the density limits currently in place, as well as market demand in the locality. One stakeholder put it this way:

> I think the more you try to drill down the more context-specific it gets. So in general terms rent control and tenant protection and condo controls, all those things make sense. But, well, what's the right condo policy to have? Or how exactly should you write your rent control ordinance? What Richmond just adopted is very different from what Oakland has, for example.

Most of the literature reviewed does not include a discussion of political barriers or a policy's likelihood of being implemented based on how liberal or conservative a city and its elected officials are. Ellen and O'Flaherty (2013) examined whether New York's progressive housing policies may be due to the city's more liberal electorate, but rejected that hypothesis on the basis that other similarly liberal cities are lacking similar policies. Levy (2006) also considered the political barriers to implementing various strategies, but more generally and less along a "liberal-conservative" spectrum.

Others, like Marcuse (2004), considered political forces broadly, discussing ideological barriers to reforming housing policy, such as a "tendency to focus on the market and ignore non-market participants' concerns" (p. 3). Goetz (1994) finds that non-traditional economic development policies and progressive housing policies (defined as those that are not directly in line with business interests) are more widespread than previously believed, and are in place not only in strong market cities, but often "in an environment of uneven development. Cities that are characterized by the existence of both wealth and poverty are engaging in progressive policy" (Goetz 1994, p. 103). Political culture and community mobilization are also "positively associated with alternative development policy" (Goetz 1994, p. 100). These variables, plus a good bond rating, are correlated with progressive housing policies as well (Goetz 1994).

At the same time, an ideology that favors real estate interests may obstruct anti-displacement policies in many cities: as one stakeholder argued in an interview, "…people think that people should be able to make as much money as they want." Besides this pervasive ideology, stakeholders described the "real money" of developers as an obstacle to winning more anti-displacement protections. Given the often-changing cast of elected officials, politicians are less likely to remember to enforce an old agreement than they are to focus on the next big campaign issue ("political memories are short"); slowing development is viewed unfavorably to say the least; and many of these policies invoke the specter of anti-capitalist intentions, which inflame the opposition.

Incentives (like density bonuses) are easier than requirements (like inclusionary zoning) to get through the political process. While some stakeholders believe that housing preservation policies (like rent control) are easier to pass because they require minimal public outlay of funds, others think it is easier to come out in favor of housing production strategies, since doing so does not challenge property rights and is not seen as anti-development like preservation strategies sometimes are.

Stakeholders agreed that some of the barriers to local anti-displacement policy implementation can only be resolved with a state-level legislative fix. Examples include the Ellis Act, vacancy decontrol, and inclusionary housing, the latter two of which we discuss in more detail later in this chapter.

Behind the policies and strategies listed above often lie an informed and organized resident base and a robust community engaged decision-making process. For example, Howell highlights the importance of a strong, engaged non-governmental sector in a case study of neighborhood change in the Washington, D.C. neighborhood of Columbia Heights (2013). Her results indicate that planners "seemingly nailed the punch list for redevelopment"—including ensuring that new housing included low-income units, helping tenants purchase their homes, preserving existing affordable housing, and more—all of which worked to some extent (Howell 2013, p. 11–12). However, even with the city's many interventions, displacement has still occurred and "low income residents' sense of community, political power, and access to amenities changed significantly" (Howell 2013, p. 11–12). Findings indicated that it was "the work of tenant organizers, affordable housing developers, policy advocates" and the like that have "driven the effort to preserve neighborhoods" (Howell 2013, p. 16). Another case study of Vancouver goes over several neighborhoods that should have experienced gentrification but did not because strong community resistance held off the market and "[denied] the opportunity for gentrification to occur on these development sites" (Ley and Dobson 2008, p.2484).

Anti-displacement efforts in the context of transit neighborhoods have a particular set of challenges. Although some housing production policies target the areas around transit stations, for instance by requiring inclusionary housing or purchasing land, it is rare to find targeted

preservation policies. One challenge specific to TOD is the way in which transit agencies interpret the Federal Transit Administration's requirement that federal fund be used for the "highest and best transit use"(PolicyLink 2008). The common approach is to pursue development that generates the most revenue. However, advocates can make the case that low-income residents use transit more than high-income residents, so location affordable housing near transit can increase ridership, another element of the "highest and best" use (PolicyLink 2008). Also important is community engagement during all phases of the TOD planning process and the introduction of anti-displacement efforts early on before land prices around transit rise (Ibid.). Community development corporations can proactively lead TOD partnerships and develop projects of their own. For example, in Chicago, the community development organization Bethel New Life launched a series of development projects around the Lake Pulaski transit stop in partnership with the Chicago Transit authority, producing 50 homes for low- and moderate-income residents and planning for 66 more in the future (PolicyLink 2008). Community benefit agreements can also be used to achieve anti-displacement and affordable housing protection around TOD projects (Ibid.). For instance, the Ballpark Community Benefits Agreement (CBA) in San Diego includes a provision that requires and funds studies of how the development will impact land prices and low-income residents (Ibid.).

Statewide Affordability and Anti-Displacement Policies

Before discussing local policies, we provide an overview of the relevant statewide affordability and anti-displacement policies. The primary role the state plays in anti-displacement policy is in funding affordable housing and providing the policy backdrop against which local governments are able to act.

State Affordable Housing Funding

On the production side, the significant expense of building or rehabilitating a single unit of affordable housing means that it is very difficult to fund projects solely from local dollars. Instead, developers rely on state and federal low-income housing tax credits, which are both administered by the state. Wegmann estimates that "63% of the average affordable rental housing project" in an array of projects in the Bay Area he analyzed "is financed by state and federal sources, with the remainder coming from local, rent-supported, and philanthropic financing" (see Table 5.2; Wegmann 2012, p.8).

California has a variety of programs that fund affordable housing, including the Multifamily Housing Program (through the state's Housing and Community Development department), the new Affordable Housing and Sustainable Communities funding (through the Strategic Growth Council), the Affordable Housing Program (through the Federal Home Loan Bank) and several other programs. In addition, it administers the federal Low-Income Housing Tax Credit Program—usually the largest source of funds in a project—through the Tax Credit Allocation Committee. Localities administer HUD programs, like Community Development Block Grants and HOME funds. A detailed discussion of these programs is beyond the scope of this chapter.

Table 5.2: Federal and State Funding Available for Affordable Rental Housing Development in the Bay Area

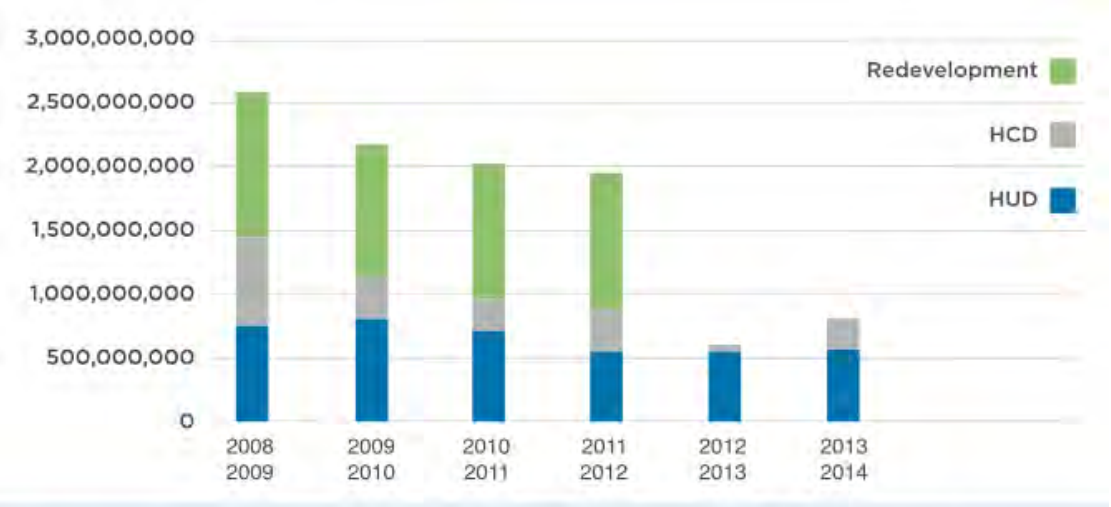
	2010 Estimated 9-county Bay Area share (mm)
Federal - off balance sheet	
4% Low Income Housing Tax Credits (includes CA state tax credits)	$163
9% Low Income Housing Tax Credits (includes CA state tax credits)	$176
Federal Home Loan Bank Affordable Housing Program (AHP)	$14
Federal – appropriations	
Project-based Housing Choice Vouchers (HCV)	$114
HUD Section 202 capital expansion	$19
HUD Section 811 (Capital Advance and PRAC)	$6
CDBG	$37
HOME	$64
State	
Multifamily Housing Program (MHP) from Prop 1C	$15
Infill/Infrastructure program from Prop 1C	$55
MHSA	$9
CALReUSE	$1
Total	**$673**

Source: (Wegmann 2012)

The competitive 9% tax credit program (see Table 5.2 above) receives requests double the amount of funding available (Schwartz 2015). This means that, even if local governments dramatically increased their funding of affordable housing, more projects would not get built, since they rely so much on the tax credit funds.

The state's investment in affordable housing has been decreasing steadily in recent years, even as the state faces a shortage of 1.5 million homes affordable to very- and extremely-low-income households (California Housing Partnership Corporation 2015).

As Figure 5.1 shows, the most dramatic change was the elimination of state funding for redevelopment agencies. These agencies managed redevelopment areas in which they were able to retain new property taxes generated as an area was revitalized, and use these funds to support affordable housing and other investments (Taggart 2012). The agencies were eliminated in 2012 after a legislative act and court decision. Almost every stakeholder we have spoken with has cited the loss of redevelopment as a major barrier to local cities' funding affordable housing: of a sample of 27 projects in the Bay Area, "about 26% of the [non-state and federal] funds contributed...originated from redevelopment" (Wegmann 2012).



FUNDING SOURCE	FY 2008-2009	FY 2013-2014	% CHANGE
Redevelopment	$1,142,555,324	$0	-100%
HCD	$680,429,821	$245,937,092	-64%
HUD	$778,782,375	$561,051,019	-28%
Total	$2,601,767,520	$806,988,111	-69%

Source: CHPC analysis of 2000-2010 annual HCD Redevelopment Housing Activities Reports 2010-2011, 2011-2012 are estimated 2002-2014 annual HCD Financial Assistance Programs Reports; and 2001-2015 annual HUD CPD Appropriations Budget data.

Figure 5.1: State and Federal Investment in Affordable Housing (from the California Housing Partnership Corporation (CHPC))

Source:(CHPC 2015)

One example of the interplay between state and local governments in financing affordable housing is with the way tax credits are allocated. According to a long-time employee of state housing agencies, the City of Los Angeles is considered its own region and receives its own allocation of tax credits (interview with authors). This was motivated by the city's construction of new transit stops, and its interest in targeting its affordable housing dollars towards those areas. The city and state tax credit agency worked together to create the new region (with "Balance of Los Angeles County" a region for the rest of the county besides the city). This arrangement allows the city to effectively control which projects its tax credit funds will flow to (through its control of the flow of predevelopment financing, which is essential for developers to have in order to be able to apply for tax credits). The decision was and is controversial, but could be effective as another tool to address transit-related displacement. Making decisions about the location of such developments and how those projects are integrated within the community is typically considered an appropriate role for localities.

The chief challenge at the state level, according to several experts, is the opposition of the incumbent governor, Jerry Brown, who has taken several steps in recent years to dismantle affordable housing programs, like the redevelopment agencies and an inclusionary zoning "fix" bill.

Ideas for state-level policy changes are numerous and beyond the scope of this project to detail. However, the CHPC suggests the following (2015, p.8):

- Create an "ongoing, predictable revenue source for the state housing trust fund with a $75 document recording fee on real-estate transactions (excluding commercial and residential home sales)."
- Expand the state's Low Income Housing Tax Credit by $300 million per year and make it easier to use.
- Invest in the existing Multifamily Housing Program from the general fund.

These policies would not specifically target transit-oriented development areas, but they would help affordable housing developers who are attempting to develop affordable housing near transit; development in these areas is encouraged by other state affordable housing programs, like tax credits and the new Affordable Housing and Sustainable Communities program. Therefore, expanding these complementary programs indirectly helps produce affordable housing near transit.

State Laws That Enable or Limit Localities' Anti-Displacement Policies

In terms of encouraging anti-displacement planning, the state requires that all local governments compose Housing Elements that include plans to address affordable housing needs. They must also report on prior progress towards reaching goals.

One aspect of these plans must be how the locality plans to preserve housing that is at-risk of conversion from affordable to market-rate—a major concern for the state (California Department of Housing and Community Development 2014).

On the other hand, several other aspects of state law limit localities' ability to mitigate displacement. The Costa-Hawkins bill, passed in 1995, limits the scope of local governments' rent control and inclusionary zoning policies; the effects of this bill on local anti-displacement policies are discussed more below (Great Communities Collaborative 2007).

Other barriers at the state level include changing voter thresholds for communities that want to raise their own funds. Currently, housing bonds must clear 67% of the vote. Since this is challenging for many cities, experts suggest reducing the threshold to 55%, the level required for school facility bond measures. However, this change has not yet succeeded at winning approval of the legislature (interview with authors).

To address the loss of subsidized housing to the market, the tax credit state agency is currently considering including a right of first refusal for the state in their regulatory agreements with owners of tax credit-funded projects. This would allow the state to have the first right to buy the property (at set prices, like the remaining debt on the project plus taxes owed) if ever the partnership that owns it wants to sell. That right would be assignable, allowing the state to allow a non-profit developer, for example, to step in and buy it to keep it affordable. According to a long-time state housing agency employee, this would allow the state to purchase the property at a reasonable price and then preserve the affordability of the housing in the future (interview with authors).

The federal Department of Housing and Urban Development (HUD) recently released a new rule on affirmatively furthering fair housing, which the state of California and local jurisdictions will have to comply with as they distribute affordable housing financing (Fluit 2015). Cities will have to submit detailed reports on their plans to, and progress in, addressing segregation and access to

high-quality affordable housing for low-income households (Semuels 2015). This has several implications for anti-displacement work. It could force localities to focus more on ensuring low-income households can stay in, or move to, moderate- and high-income areas. In terms of transit areas, if an affordable developer is proposing a new development before the area has gentrified, the new rules could make it more difficult for the city to grant that funding, since those funds would be going to build housing in a low-opportunity area. However, cities may be able to show how they expect the area to gentrify in coming years, and invest proactively to retain low-income households in the midst of that change. In sum, this rule change will probably encourage agencies that distribute HUD funds to focus their efforts in places that are experiencing displacement, either already high-income or gentrifying.

Housing Affordability and Anti-Displacement Policies in the Bay Area and in Los Angeles County

To construct an inventory of anti-displacement policies in the Bay Area and Los Angeles, we first reviewed anti-displacement toolkits and policy documents to generate a comprehensive list of strategies, considered by advocates, researchers, and policy makers as efforts to mitigate displacement (see Appendix T for sources). From an initial list of about 50 policies, we applied the following criteria to select policies to inventory:

1. Policies that are applied uniformly to the jurisdiction as a whole (i.e., not only restricted to specific neighborhoods).
2. Policies that have been implemented in at least two jurisdictions, but not all.[3]
3. Policies that have "teeth" and are being implemented.

A list of 14 anti-displacement policies was generated (Table 5.3)[4]. Researchers then analyzed municipal codes and housing elements for each of the jurisdictions in the Bay Area and Los Angeles County, which was complemented in the Bay Area with data from a survey of housing policies completed by the Association of Bay Area Governments (ABAG) (2015). Note that policies specific to transit-oriented development areas are discussed in a later section; these policies are citywide.

[3] Policies that are required by all jurisdictions, such as the Density Bonus or Secondary Units, were not included because we wanted to focus on policies that went over and above the state law.

[4] Neither the UC Berkeley nor ABAG inventories included Affordable Housing Trust Funds; an alternative data source was found to inventory these policies in the Bay Area and Los Angeles (*Center for Community Change 2015; Center for Community Change 2013).*

Table 5.3: Anti-Displacement Policies in the Bay Area and Los Angeles County

	Policy	Number of Bay Area Cities/ Counties with Policy	Percent of Bay Area Cities/ Counties (Total = 109)	Number of Los Angeles Cities/ Counties with Policy	Percent of LA Cities/ Counties (Total=89)
Preservation Strategies	Just-Cause Eviction Ordinance	7	6%	5	6%
	Rent Stabilization or Rent Control	9	8%	4	4%
	Rent Review/Mediation Boards	14	13%	2	2%
	Preservation of Mobile Homes (Rent Stabilization Ordinance)	34	31%	16	18%
	SRO Preservation Ordinance	28	26%	4	4%
	Condominium Conversion regulations	73	67%	24	27%
	Foreclosure Assistance	45	41%	1	1%
Affordable Housing Production Strategies	Housing Development Impact Fee (or Jobs-Housing Linkage Fee)	24	22%	3	3%
	Commercial Linkage Fee/Program	27	25%	3	3%
	Affordable Housing Trust Fund	15	14%	8	9%
	Inclusionary Zoning/Housing	78	72%	16	18%
	Local Density Bonus Ordinance (above state requirements)	19	17%	7	8%
	Community Land Trusts	26	24%	1	1%
Asset-Building and Local Economic Development Strategies	First Source Hiring Ordinances	17	16%	1	1%

Source: UC Berkeley and UCLA Internal Analysis; Association of Bay Area Governments 2015; Center for Community Change 2015; Center for Community Change 2013

Bay Area

Anti-displacement policies are found in roughly equal measure across the nine counties, with the exception of Solano and Sonoma Counties. Inclusionary zoning and regulation of condominium conversions are the most prevalent policies in the Bay Area. Most of these policies were adopted in the early 2000s, with some adopted in the 1980s and 1990s. On the other hand, rent control can be found in only nine jurisdictions in the Bay Area, which were all adopted in the early 1980s.[5]

One indicator of the extent of anti-displacement policies is the number of policies per city (Table 5.4). Alameda rises to the top as the county with the most policies per city, at six, after San Francisco (where the sole City of San Francisco has implemented 12 of the 14 policies). Besides San Francisco, the cities with the most policies in place are Berkeley and East Palo Alto (11 policies each), Oakland (10), Cupertino, Hayward, and Petaluma (nine each), and Alameda and San Jose (eight each).

[5] The city of Richmond passed a rent control ordinance in August 2015 (Ioffee 2015).

Table 5.4: Anti-Displacement Policies/Programs by County

County	# Cities in County	# Policies - Total	Average # Policies per city (Total Policies/ # Cities)
San Francisco	1	12	12
Alameda	15	87	6
Sonoma	10	48	5
Santa Clara	16	74	5
Napa	6	24	4
Contra Costa	20	62	3
San Mateo	21	63	3
Marin	12	33	3
Solano	8	15	2

Source: UC Berkeley internal analysis. Note that policies in unincorporated parts of each county are also included in these figures.

Geographically, the cities with the most anti-displacement strategies cluster together: San Francisco, Berkeley, Oakland, Alameda, Hayward, and San Leandro, with two exceptions: Petaluma (7 policies) and East Palo Alto (12 policies) (Figure 5.2).

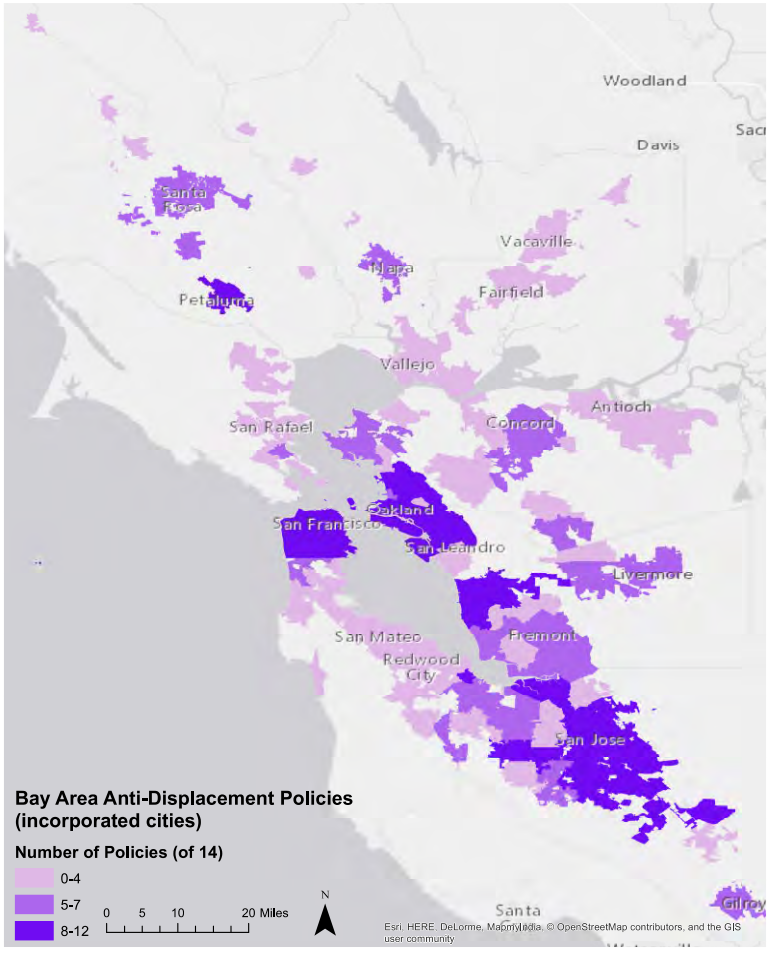


Figure 5.2: Number of Anti-Displacement Policies by City

Source: UC Berkeley Internal Analysis; Association of Bay Area Governments 2015; Center for Community Change 2015; Center for Community Change 2013

Nearly all these cities have BART stations. In terms of specific policies, most do not display a geographic pattern, with a few exceptions. There is a concentration of the following two policies in the South Bay: Community Land Trusts and Affordable Housing Impact Fees (or jobs-housing fees). Few peninsula cities have mobile home rent control policies in place, despite a need for them there, according to stakeholders.

Past and Future Affordable Housing Production

Using housing production figures that cities must report as part of their Regional Housing Needs Allocation (RHNA) requirements, it is possible to see how different cities perform based on whether they have each of the production policies considered here[6]. In terms of the production of very low-income (30-50% area median income (AMI)) housing, we found that, of Bay Area cities, those with each of the production strategies produce more total units (on average, and per capita) than those without each strategy (except for community land trusts) (Table 5.5). This could mean that cities that build more are then more likely to adopt production strategies, or that the causation is the reverse: cities with the strategies produce more affordable housing because the policies are working.

Table 5.5: Annual Average Housing Unit Construction per 10,000 People, Bay Area Cities, by Affordable Housing Production Strategy
(Average of Constructed Units 2007-2013 / Population in 2010 * 10,000)

		Housing Development Impact Fee (or Jobs-Housing Linkage Fee)	Commercial Linkage Fee/ Program	Affordable Housing Trust Fund	Inclusionary Zoning/ Housing	Local Density Bonus Ordinance (above state reqs)	Community Land Trusts
Very Low Income	Without Policy	9.78	9.17	11.50	10.19	10.61	11.97
	With Policy	**19.17**	**19.90**	**15.21**	**12.42**	**18.80**	11.39
Low Income	Without Policy	9.02	8.49	8.30	7.51	8.38	8.56
	With Policy	5.43	7.48	7.64	**8.51**	7.42	7.29
Moderate Income	Without Policy	10.33	9.40	9.69	3.98	9.32	10.26
	With Policy	7.99	**11.10**	**11.16**	**11.95**	**12.66**	8.48
Above Moderate Income	Without Policy	54.80	47.04	61.17	27.98	55.52	56.00
	With Policy	**91.84**	**111.00**	**80.29**	**75.60**	**105.01**	**83.77**

Numbers in bold are where cities with the policy have, on average, higher production. Source: Internal policy inventory, combined with Regional Housing Needs Assessment progress from Bay Area Legal Aid, EBHO, and NPH.

[6] The Regional Housing Needs Allocation is a "state-mandated process to identify the total number of housing units (by affordability level) that each jurisdiction must accommodate in its Housing Element"(Association of Bay Area Governments 2015). The state tells the Bay Area regional planning agencies how many units of housing at each income level they need to produce in an eight-year period. These agencies then distribute those units among the various jurisdictions, who are in turn required to modify their Housing Elements to be in compliance with these allocations.

Interestingly, the same pattern does not apply to low-income (50-80% AMI) housing; except for inclusionary zoning, cities without the policy produce more low-income housing than cities with the policy.

Finally, it appears that moderate (80-120% AMI) and above-moderate income production is dramatically higher in places with each policy than in places without them. One hypothesis for this finding is that cities that have the hottest real estate markets, where developing market-rate homes affordable to low-income people is difficult, are also the cities most likely to implement production policies. Further research is needed to investigate this, and also to examine to what extent the adopted policies are also being implemented.

A projection of affordable housing supply and demand found large gaps between housing needed and likely to be supplied by current programs (Wegmann 2012). About 70% of the demand will not be met by the projected supply—a striking conclusion.

Table 5.6 summarizes the analysis, and provides insight into the relative housing production potential of the suite of financing programs and inclusionary zoning: 27% of the projected units would be built through affordable housing finance, while 11% would be constructed through inclusionary zoning. The number of units represented by these figures would probably be lower now, with decreases in affordable housing funding and the legal conscription of inclusionary zoning (discussed below). However, even so, this analysis provides evidence that inclusionary zoning, in general, is likely to produce fewer units than affordable housing finance.

Table 5.6: Projected housing demand, supply, and shortfall for the nine-county Bay Area region

	Very Low Income	**Low Income**	**Moderate**
affordability metric	*dwelling units*	*dwelling units*	*dwelling units*
Increase in region-wide housing demand, 2010-2040	231,142	164,216	115,286
Demand absorbed by:			
Affordable rental housing production, 2010-2040	(23,359)	(16,829)	
Inclusionary Zoning housing production, 2010-2040	(4,620)	(7,712)	(3,366)
Habitat for Humanity housing production, 2010-2040	(1,799)	(1,799)	
Foreclosed inventory, 2010-2020	(9,707)	(24,938)	(23,345)
Increase in tenant-based Housing Choice Vouchers, 2010-2040	(30,458)	(1,078)	
Housing demand not met by supply	**161,200 dwelling units**	**111,859 dwelling units**	**88,576 dwelling units**
As % of total	70%	68%	77%

Source: Wegmann 2012. Wegmann's report includes detailed methodology for arriving at each of these figures.

Los Angeles County

As observed in Table 5.3, few jurisdictions have anti-displacement policies and strategies in Los Angeles County, and the vast majority of the 14 policies have only been adopted by a handful of cities. The most prevalent policies in Los Angeles County are condo conversion ordinances (27% of

cities have adopted them), mobile home preservation ordinances (18%), and inclusionary zoning ordinances (18%).[7] Condo conversion ordinances first appeared in the Los Angeles region in the late 1970s and early 1980s (the City of Los Angeles adopted such an ordinance in 1980), and continued to be adopted throughout the 2000s, with the most recent adoption in 2014 by La Canada Flintridge. Eleven out of the 24 jurisdictions that have condominium conversion ordinances adopted them after 2000.

Sixteen out of the 89 Los Angeles County municipalities (18%) have a mobile home preservation ordinance, but only four municipalities (4%) have a rent control ordinance and only two municipalities (2%) have rent mediation boards. The four cities that have rent control ordinances are Los Angeles, Beverly Hills, Santa Monica (adopting its ordinance in the mid-1970s), and West Hollywood (adopting its ordinance in the mid-1980s). Cities with a rent mediation ordinance are Gardena and Culver City (both adopting their ordinances in 1987).

Table 5.7 shows which cities have the highest number of anti-displacement policies (three or more). The cities with the highest proportion of anti-displacement policies are: Los Angeles that has adopted nine out of the 14 policies (64%), Santa Monica and West Hollywood (50%), as well as Calabasas and Pasadena that have adopted six out of 14 policies (43%). See Appendix U for a list of the policies adopted by each of Los Angeles County's 89 municipalities.

Table 5.7: LA County Cities that have instigated 3 or more Anti-Displacement and Housing Affordability Policies

City	# Total Policies	% of Policies Adopted
Los Angeles City	9	64%
Santa Monica	7	50%
West Hollywood	7	50%
Calabasas	6	43%
Pasadena	6	43%
Beverly Hills	5	36%
Glendale	5	36%
Huntington Beach	4	29%
La Verne	4	29%
Long Beach	4	29%
Malibu	4	29%
Agoura Hills	3	21%
Claremont	3	21%
Hermosa Beach	3	21%
Los Angeles County	3	21%
Rancho Palos Verdes	3	21%

Source: UCLA Internal Analysis

Comparison between Bay Area and Los Angeles

In comparison with the Bay Area, fewer Los Angeles cities have anti-displacement or affordable housing policies (Figure 5.3). The policy differences between the two regions can be explained by several other differences between these regions: the two regions are politically different, and

[7] 16 Cities (18%) have Inclusionary Zoning and/or In-Lieu Fees. However, La Verne only has Inclusionary Zoning in its Old Town Community Plan, while Malibu only has In-Lieu Fees (Ordinance 375), but not Inclusionary Zoning.

progressive policies are more easily adopted in the Bay Area, due in part to pressures from affordable housing advocates in the Bay Area. Also, geography matters: the supply of land is more limited in the Bay Area; therefore, the development of housing is more constricted and the magnitude of the affordable housing problem is greater compared to Los Angeles (interview with authors).

Another reason cited is that, although Los Angeles is extremely expensive, San Francisco has been the "ground zero" for affordability issues (with rents only rivaled by those in Manhattan). However, given lower incomes in Los Angeles, it is actually relatively less affordable than the Bay Area at this time. Therefore, it is not a simple issue of greater need in the Bay Area. An expert in the Bay Area explained the discrepancy thus:

> "…I think the existence of so much progressive housing and urban policy here is the legacy of volunteers…it was San Francisco and Berkeley that had really strong tenant movements in the 60s and early 70s…I think cities tend to look at their neighbors and see what their adopting and when you get to some sort of critical mass, you know half the city is in the county, half these policies. Now you're not sticking your neck out, you're just doing what everyone else does."

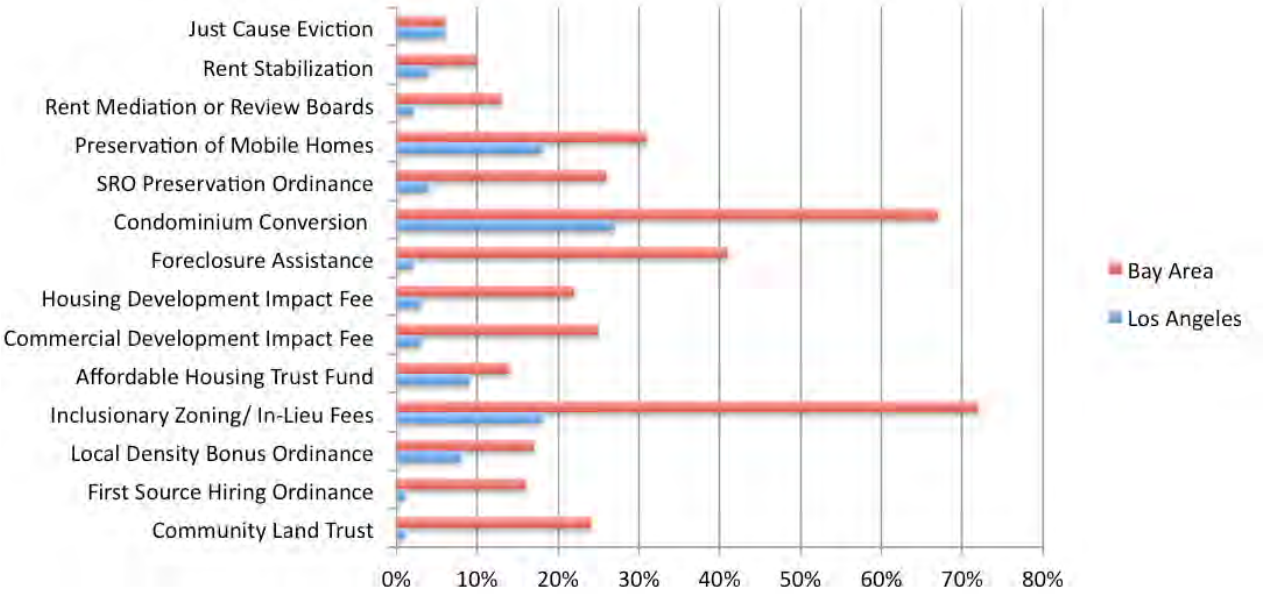


Figure 5.3: Comparison of the Proportion of Bay Area and Los Angeles Cities with Anti-Displacement Policies

Source: UC Berkeley and UCLA Internal Analysis; Association of Bay Area Governments 2015; Center for Community Change 2015; Center for Community Change 2013

Addressing Displacement in Transit-Oriented Development

Transit oriented development is defined as "a planning and design trend that seeks to create compact, mixed-use, pedestrian-oriented communities located around new or existing public transit stations" (PolicyLink 2008, p.1). A CHPC working paper clearly explains why there should be a focus on affordability near TODs (CHPC 2013).

1. Low-income people own fewer cars and use transit more.

a. People with lower incomes are more likely to be transit riders, with households that earn less than $20,000 per year using transit more than four times as much as higher-income groups.
b. Nationally, 48.5% of transit riders do not own a car, compared to the national average of only 6.1% of all American households that are carless, and low-income households are far less likely to own a car.

2. Proximity to transit is linked to increasing property values and rents, typically 10-20% above similar rental buildings that are further from transit.
3. New transit stations tend to attract new residents with higher incomes and higher car ownership.
4. Evaluations of smart growth plans that emphasize TOD and other infill development have found reduced affordability and loss of lower income households in TOD areas.

A common idea is to impose targeted policies in areas around transit stations. One expert is skeptical of this approach, however, unless the funds going to transit investments have anti-displacement provisions:

> "Of course, then the question is what's the radius that you want to define…I mean everybody let's say oh within a mile or within a half-mile [of] the transit, and really the effects of our transit—it's not a circle. It's kind of…a snake that swallowed a rope with [a] big bulge and you go out along all the arterials that eat into the station. But however it gets defined, that could be one of the problems. Frankly, I think all of the money that's tied into investments in transportation and close to transit stations needs to have strings attached to it that call for both some kind of anti-displacement policy (however those are defined) as well as some requirement for affordable housing (interview with authors)."

Planning for Transit Oriented Development in the Bay Area

The San Francisco Bay Area has a long history of developing policies to incentivize smart growth and TODs, some of which have explicitly addressed affordable housing and displacement. In this section we review some of these policies and how affordable housing and displacement risk have been incorporated into planning and project review, both at the local and regional level.

Background on Regional Smart Growth Planning in the Bay Area

Beginning in 1997, the Metropolitan Transportation Commission started the Transit for Livable Communities (TLC) program. TLC provided planning and capital grants for local transportation projects in downtowns, corridors, transit areas, and other activity centers, when they planned for higher-density housing and mixed-use development around transit. Since its inception, TLC has awarded over $250 million in funds to better link land use and transportation decisions made by the region's cities and transit operators (CTOD, CD+A, and Nelson Nygaard 2014).

In the early 2000s, ABAG, the Metropolitan Transportation Commission (MTC) and other regional agencies began to work together to formulate a regional Smart Growth strategy and developed the FOCUS program that promotes linkages between land use and transportation by encouraging development in key locations (CTOD, CD+A, and Nelson Nygaard 2014). In 2007, the regional agencies asked cities to select areas that they wished to prioritize for infrastructure grant funding, such as a downtown or a corridor, to promote infill development as part of the FOCUS program, which were called Priority Development Areas (PDAs). The criteria for identifying PDAs were that they be located in existing communities, where housing growth was expected, and near transit.

These areas, where cities had largely already planned future growth, then became eligible for planning grants, capital improvements, technical assistance, and other resources to support local governments and encourage TOD.

In 2008 California passed SB 375, directing regions to coordinate land use and transportation planning through the development of sustainable communities strategies (SCS) as part of its periodic Regional Transportation Plan. The SCS must also be consistent with state-mandated plans for ensuring that localities provide adequate housing for all income levels under the RHNA process. Grant funding and litigation provide the primary "carrots" and "sticks" for implementing these state goals.

When the Bay Area's regional agencies set out to develop their SCS, known as Plan Bay Area and adopted in 2013, they used the pre-established PDAs as the guiding geography. Seventy-eight percent of future growth was directed towards PDAs. Although the implementation of the plan involves allocating transportation funding to projects consistent with the plan, they are largely coordinated through the county-level congestion management agencies that produce county transportation plans every two years and distribute funds to local jurisdictions (ABAG and MTC 2013).

Station Area Plans

Through MTC's Station Area Planning program (which later became the Priority Development Area Planning), over 50 projects have been funded that include station area planning, funding for Environment Impact Reviews (EIRs) of plans, and in certain circumstances gap financing.

MTC began a station area planning program in 2005 in conjunction with the passage of the TOD policy that would apply to nine transit expansion projects covered under the Regional Transit Expansion Program, also known as Resolution 3434 of 2001 (MTC 2005). The TOD policy required that these plans include a minimum number of housing developments within a half-mile of the station along the corridors to ensure future growth in transit ridership, to make the investments cost-effective and to ease the Bay Area's chronic housing shortage, among other goals. These housing thresholds were determined through a study of existing and potential levels of development in the corridors (CTOD, CD+A, and Nelson Nygaard 2014). If the corridors did not meet the thresholds (out of the nine, five projects did not meet them), they were required to conduct station area plans. Below-market-rate[8] units were rewarded by receiving 50% bonus points toward the threshold minima. To be counted toward the threshold, planned land uses had to be adopted through general plans accompanied by the appropriate implementation processes, such as zoning codes.

In an evaluation of the TOD policy, consultants found through a stakeholder survey that despite the bonus points allocated to affordable housing "survey respondents did not feel that the Policy was effective in encouraging the inclusion of affordable housing opportunities within station areas. Most jurisdictions relied on their citywide affordable housing policies rather than making a specific effort to provide affordable housing within the station area plans" (CTOD, CD+A, and Nelson Nygaard 2014). In fact, the consultant team found that "Some jurisdictions feel that their citywide inclusionary ordinances are already near the tipping point of making housing development infeasible and imposing higher requirements for affordable housing in station areas would make transit-oriented housing infeasible. The City of San Jose actually exempted downtown areas from its

[8] Defined in the policy as affordable to 60% AMI for rentals and 100% AMI for owner-occupied units.

citywide inclusionary housing ordinance, which had the effect of stimulating market-rate housing production around transit stations" (p.19).

In 2008, the station area planning program was expanded to allow areas participating in the FOCUS program to compete for funding. The FOCUS program was established by MTC and ABAG in 2007 to promote land use and transportation linkages by encouraging development in PDAs, which were defined by local jurisdictions as areas near transit that provided opportunities for future growth. At the same time MTC commissioned a Station Area Planning Manual from Reconnecting America in 2007 (Reconnecting America 2007). The manual identified different place types (e.g., city center and transit neighborhood) and attached suggested total housing unit targets for the half-mile radius around a station in each type of place, ranging from a low of 1,500 units for transit neighborhoods to 30,000 units for regional centers. According to stakeholders, these targets were very easy to reach as they were written very liberally to encompass a wide range of places. Also within the manual were suggestions for how to create opportunities for "affordable & accessible living" including a) the setting of affordable housing goals, b) consideration of inclusionary requirements, c) providing a range of housing options, and d) minimizing displacement of existing residents by analyzing and adopting policies where "appropriate and feasible" (p. 24). In addition, jurisdictions were encouraged to consider affordable housing financing mechanisms, including the targeting of existing programs to station areas.

The Station Area Planning program was later converted into the Priority Development Area program in 2012. Although MTC staff evaluated applicants based on the housing policies they required, it was not until 2012 that formal guidelines were distributed, which encompassed "Planning Elements" that MTC encouraged grant recipients to include (MTC 2012a). These elements included a section on "Affordable Housing and Anti-Displacement Strategy" (p.7-8), which involved the quantification of the affordable housing needs and identification of an affordable housing goal. In the identification of goals, jurisdictions were encouraged to consider "No net loss of affordability in the plan area", to identify quantitative targets of affordable units, and to demonstrate consistency with RHNA numbers. Among the policies jurisdictions were encouraged to consider were: a) inclusionary housing, b) housing trust fund, c) reduced parking standards, d) rehabilitation programs, e) land trusts, f) foreclosure mitigation. To avoid displacing existing residents, the Plan Elements suggests the engagement of communities likely to be displaced, local economic development, and enhancement of community centers and facilities.

Of the 37 completed plans that were reviewed, 31 (84%) had quantified total housing unit targets, while 16 (43%) had quantitative affordable housing targets, usually in the form of a percentage of the total. In addition 14 (38%) plans mentioned displacement, some of which outlined potential efforts to mitigate it. The vast majority of plans, 31 (84%) included language on reduced or unbundled parking, either as a way to reduce costs, or increase transit ridership or non-motorized transit. In stakeholder interviews, MTC staff noted that although the plan elements were suggested to all grant recipients, they didn't necessarily apply universally as some jurisdictions already covered many affordable housing policies through citywide policies or other plans. In addition, some of the funding went only to EIRs or partial grants for incomplete elements to pre-existing projects, making it difficult to modify plans that were already farther along.

Scoring Incentives through One Bay Area Grants

The One Bay Area Grant (OBAG) was the new funding approach to integrate the region's federal transportation program with SB 375 to encourage land use and housing policies that support the production of housing with supportive transportation investments. In 2012, MTC established

criteria guidelines for how to allocate federal transportation money to the nine-county Congestion Management Associations (CMAs) (MTC 2012b). For FY2015-16, $320 million was allocated to CMAs through the OBAG program, approximately 40% of total federal transportation funds that MTC distributed. With the guiding principle of "using transportation dollars to reward jurisdictions that accept housing allocation through the RHNA process and produce housing as well as promoting investments in PDAs" (MTC 2012d, p.2) the formula used to distribute OBAG funding to the counties takes into consideration the following factors weighted according to the percentages in parentheses: population (50%), past housing production (12.5%), future housing commitments as determined by the ABAG RHNA (12.5%) and added weighting to acknowledge very-low- and low-income housing production (12.5%) and future commitments (12.5%).

Each county CMA is then required to prepare a "PDA Growth and Investment Strategy" that includes selection criteria for OBAG grants. The purpose of the strategy is to ensure that CMAs have a transportation project priority-setting process for OBAG funding that supports and encourages development in the region's PDAs. CMAs in larger counties were directed to spend at least 70% of their OBAG investments in PDAs or on projects connected to PDAs. In addition, jurisdictions were required to have an adopted and certified Housing Element to be eligible for OBAG grants. In developing their local funding guidelines for the competitive grants (accounting for approximately 50-75% of the OBAG grant money, which varied by county), MTC encouraged the CMAs to emphasize housing growth in PDAs, "favorably consider" projects located in Communities of Concern and in PDAs with "affordable housing preservation and creation strategies" (MTC 2012c, p.2). In a footnote, examples of such policies included: inclusionary housing requirements, city-sponsored land-banking for affordable housing production, just-cause eviction policies, policies or investments that preserve existing deed-restricted or "naturally" affordable housing, condo conversion ordinances that support stability and preserve affordable housing, and the like. (MTC 2012c, p.1)

Some CMAs used these suggestions from MTC directly when constructing their evaluation criteria for OBAG grants. For instance the Alameda County Transportation Commission (ACTC)'s first Investment and Growth Strategy of 2013 outlined a two-tier evaluation process. First projects were evaluated based on planning and development readiness, followed by a 100-point OBAG scoring and selection criteria. Projects could potentially receive nine out of 100 points for "Affordable Housing Preservation and Creation Strategies" such as "inclusionary zoning ordinance or in-lieu fee, land banking, housing trust fund, fast-track permitting for affordable housing, reduced deferred or waived fees for affordable housing, condo conversion ordinance regulating the conversion of apartments to condos, SRO conversion ordinance, demolition of residential structures ordinance, rent control, just cause eviction ordinance, or others" (ACTC 2013, pp. 3-13). In contrast the CMA of San Mateo awarded up to two out of 103 possible points for projects located in or near an "affordable housing PDA" (C/CAG 2014, p.46). Santa Clara County's Santa Clara Valley Transportation Authority (VTA), on the other hand did not award any points for affordable housing (VTA 2014).

In a recent analysis of the first round of OBAG funding by the Great Communities Collaborative (Montojo 2015), researchers found that 61% of cities were allocated less funding than what was determined by their MTC formula share. Furthermore, Montojo found that on average, 51% of projects funded with OBAG grants were within a quarter-mile of affordable housing and only 21% were within a half-mile of both transit and affordable housing. According to the Great Communities Collaborative inventory of funding allocation and the number of anti-displacement policies we inventoried in each jurisdiction, the relationship appears weak at best. The jurisdiction with the highest number of anti-displacement policies (San Francisco) also received the largest amount of

OBAG grants. However, looking at the grant funding on a per-capita basis, there appears to be no correlation between the number of policies and funding received (Figure 5.4).

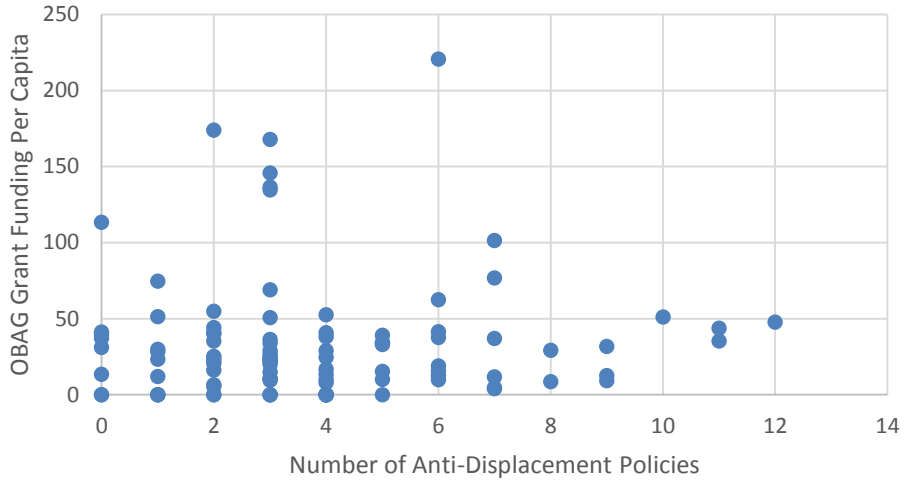


Figure 5.4: Per-Capita Opportunity Bay Area Grant Funding By Number of Anti-Displacement Policies, Bay Area Cities
Source: UC Berkeley Internal Analysis

Los Angeles Station Neighborhood Area and Planning Guidelines

The City of Los Angeles has created TODs or Station Neighborhood Area Plans (SNAPs) as a means of guiding development near existing or new transit stations. Various city documents have also incorporated transit sections into planning documents, including community plans and specific plans. The following section outlines how these types of plans address issues of affordability, and whether they mention the topics of gentrification or displacement. The emphasis of this section is not on the types of plans that have been created, rather how these documents propose development near transit and how/if they referred to affordability, displacement, or gentrification.

Before delving into these station area plans, consider a requirement of Los Angeles County Metropolitan Transportation Authority (LA Metro) when it enters into joint development agreements for construction on its land: the fifth listed goal is affordable housing[9]. The guidelines call for "35% of the total housing units in the Metro joint development portfolio [to be] affordable for residents earning 60% or less of the Area Median Income" (LA Metro 2015). One mechanism for achieving this is a policy of land discounting, whereby LA Metro may "discount joint development ground leases" by no more than 30% of fair market value. This is a promising addition (as of July 2015) to the guidelines, and is likely to help address displacement in transit neighborhoods by providing more affordable housing.

The planning documents are official statements of the local planning departments reflecting the government policy regarding the physical development of a community. However, the documents are not legally binding, but are instead a list of recommendations for interpreting those values into

[9] Prior to the 2015, joint development agreements often included affordable housing requirements. The 2015 guidelines, however, institutionalized the 35% affordable housing requirement and also introduced the 30% discount limit on joint development ground leases.

future land use and development policies and decisions. The plans aim to be comprehensive in addressing how physical aspects of the community affect social, economic, and environmental issues. The plans can help shape future neighborhood plans, corridor plans, and other community improvements, but they do not guarantee a specific outcome. As with SNAPs, specific plans usually cover smaller geographical areas than the Community Plan. The goal of Specific Plans is to restrict development through regulatory controls and incentives that promote systematic and incremental neighborhood change to ensure orderly development and appropriate capacity off public facilities.[10] Community Plans provide specific, neighborhood-level strategies necessary to achieve the General Plan objectives.

Table 5.8 lists the existing Los Angeles plans with TOD sections. None of the TOD plans[11] explicitly use the words gentrification or displacement, but there are references to the creation and preservation of affordable housing. The Northeast Los Angeles Community Plan mentions issues of displacement several times. The West Adams, Baldwin Hills, and Leimert Community Plan implies that gentrification is a concern and discusses preventing displacement.

There are 12 future Los Angeles County and City TOD plans. These future plans include five stations along the Crenshaw line, with additional five stations along the Exposition Line. Two future Los Angeles County TOD plans include Willowbrook and East Los Angeles 3rd St. Specific Plan.

[10] A detailed description on community plans and specific plans can be found on the City of Los Angeles Planning website: http://www.lacity.org/311-service-category/policy-planning

[11] The three Los Angeles SNAP plans include 1) Vermont/Western 2) Avenue 57, and 3) Warner Center 2035 Plan. The five plans that include TOD sections include: 1) the Northeast Los Angeles Community Plan, 2) the West Adams, Baldwin Hills, Leimert Community Plan, 3) Cornfield Arroyo Seco Specific Plan, 4) Southeast L.A. Community Plan Implementation Overlay Zone, and 5) the South Community Plan Implementation Overlay Zone. There is also one report that is outlined in this summary that relates to the Vermont/Western Transit Plan—*Surveying East Hollywood: A Profile and Needs Assessment of the Business Community.*

Table 5.8: Existing Los Angeles Plans with TOD sections

Name	Type of Document	Year Adopted	Metro Line	Mention of Displacement or Gentrification	Affordability Policies Mentioned
Vermont/ Western	SNAP/TOD	2001	Hollywood/Western, Vermont/Beverly, Vermont/Santa Monica, Vermont/Sunset (Red Line)	No	Mixed-Use Developments, Community Benefits, Homeownership, Exemptions from Park Fees
Avenue 57	SNAP/TOD	2002	Highland Park Station (Gold Line)	No	Homeownership support, Mixed-Use Development
Warner Center 2035	SNAP/TOD	2013	Warner Center Station (Orange Line)	No	Mixed-Use Development, Affordable Housing Requirement, Workforce Housing, Living Wage, Local Hiring, Exemptions from Development Fees.
Northeast Los Angeles	Community Plan w/ TOD	1999	Highland Park Station (Gold Line)	Yes, displacement concerns	Higher density near transit, Mixed-Use Development, Maximize opportunities for affordable housing adjacent to rail stations
West Adams, Baldwin Hills, Leimert	Community Plan w/ TOD	2007	Exposition (Phase I) and North-South Crenshaw/LAX	Yes, gentrification & displacement	Increase Homeownership, Affordable Housing Options, Accessory Dwelling Units, Infill Development, Parking Reductions, Condo Conversions.
Cornfield Arroyo Seco	Specific Plan w/ TOD	2013	Chinatown and Lincoln/Cypress Metro (Gold Line)	No	Affordable Housing Density Bonus, Unbundled Parking Exemption
Surveying East Hollywood	Report on Vermont/ Western	2002	Hollywood/Western, Vermont/Beverly, Vermont/Santa Monica, Vermont/Sunset (Red Line)	Yes, displacement of businesses	Local Job Incentives, Lower Parking Standards, Love/Work Spaces

Source: UCLA Internal Analysis

The Los Angeles SNAP, Specific, and TOD Community plans vary in terms of if and how they mention gentrification and displacement, and how they propose to preserve or develop affordable housing. The older plans such as Vermont/Western or Avenue 57 do not directly speak to issues of displacement, but do refer to the need for housing affordability. The plans focus on maintaining the existing scale of the neighborhoods, as well as the need to promote homeownership. The plan encourages mixed-use and live-work spaces. Planners consider the development of mixed-use housing as an opportunity to provide affordable housing units. The Metro Joint Development Program: Policies and Processes, updated in 2016, states that "Metro will define affordable housing

as housing for residents earning 60% or less than AMI, and will prioritize units with even deeper affordability levels for very-low-income and extremely-low-income residents" (p. 7). There are also exemptions from standard parking requirements. The Vermont/Western Plan also mandates community benefit agreements. Although the Northeast Los Angeles Community Plan refers to displacement concerns, the Avenue 57 SNAP for the area does not speak to this issue directly.

The Warner Center Plan, which was adopted in 2013, speaks to a range of affordability policies such as workforce and affordable housing. Additionally the plan promotes anti-displacement policies such as living wage and local hiring. The Warner Center Plan does not directly refer to displacement or gentrification, but has an extensive list of policies that encourage both affordability and job opportunities for locals.

The West Adams, Baldwin Hills, Leimert Community Plan does refer to gentrification and displacement as a concern and provides numerous proposals to promote affordability. Numerous policies speak to affordable homeownership opportunities, the need to provide more affordable housing options built at the same scale as the neighborhood, the need to promote co-housing, and accessory dwelling units. The plan also promotes middle- and working-class homeownership and suggests that this could be done through condominium conversions.

The newest community plans, Cornfield Arroyo Seco (adopted 2013), the South and Southeast Los Angeles Plans (draft form), as well as the future Expo Line TOD plans, are more complex in their proposals. These plans create specific subareas where tiered zoning is encouraged as a means to promote denser development. The zoning scheme that would allow developers to build larger buildings if preferred uses, such as affordable housing, are included. These plans also have areas where single-family homes are prohibited, since the emphasis is on higher density as a means to provide more affordable housing options. The Expo Plan also incorporates public benefits as a part of development projects.

There is a significant distinction between the earlier and newer TOD plans. For instance, in the Vermont/Western Plan affordability is encouraged, but few incentives or guidelines are provided for developers when compared to the newer TOD plans, where a menu of incentives is provided to encourage different ways of achieving affordable housing.

Prevalent Policies that Aid in Addressing Transit-related Displacement

We will next consider four policies in depth, three production and one preservation. We focus on inclusionary housing and condominium conversions, because of their prevalence in the Bay Area and Los Angeles County. We then discuss rent control in the Bay Area, because it is a policy frequently discussed in the literature and believed to be effective in addressing displacement, yet few cities in in the Bay Area have implemented it. Finally, we discuss preservation of mobile homes in Los Angeles County since it is one of the more prevalent policies in Los Angeles.

Inclusionary Housing/Zoning

Many cities use inclusionary housing or inclusionary zoning policies to increase the stock of affordable housing at a minimal cost to the city and concurrent with development. Such policies

include requirements on developers to devote a certain portion of new development to below-market renters or owners or provide an in-lieu fee to develop affordable housing elsewhere. As can be expected, inclusionary zoning works best in robust housing markets (Hickey 2014) and mandatory policies produce more units than programs that are voluntary (those that have guidelines for including below-market rate units in new developments but where development is possible without meeting the requirements) (Hickey et al. 2014).

Inclusionary zoning programs are widespread—over 500 jurisdictions in 27 states and Washington, D.C. have policies in place, though they are particularly concentrated in California and New Jersey (Hickeyet al. 2014). In the Bay Area 78 cities have some type of inclusionary zoning policy in place, but only 16 cities have inclusionary zoning in Los Angeles County. The policies vary considerably, both in their design and implementation and in how much housing they produce (Hickey et al. 2014). Overall, "larger, more highly educated jurisdictions, and those surrounded by more neighbors with inclusionary zoning are more likely to adopt" such policies (Schuetz Meltzer, and Been with Furman Center for Real Estate and Urban Policy 2007).

Inclusionary zoning policies have generated a significant number of units of affordable housing. Nationally, Mallach and Calavita estimate that between 129,000 and 150,000 units have been produced through these programs, mostly in California, Massachusetts, and New Jersey[12] (Mallach and Calavita 2010). In California, between 1999-2007, inclusionary housing programs generated 29,281 affordable units, or 2% of total units authorized for construction[13] (Non-Profit Housing Association of Northern California 2007; California Department of Finance 2015).

A data limitation on inclusionary housing production figures is that units produced via now-shuttered California redevelopment agencies are left out. These redevelopment agencies had requirements that "15% of all production inside a project area has to be affordable, under state law," which meant that "every community [using redevelopment dollars] had to have an inclusionary policy of some kind," according to a policy expert (interview with authors). Therefore, other units developed in a similar manner as inclusionary zoning have been produced in the state and are not captured in these figures.

However, even with these potential data inaccuracies, the policy has only made a small contribution towards addressing the affordable housing shortage. A recent report from the CHPC finds a statewide need for 1.5 million rental homes affordable to extremely-low- and very-low-income households (CHPC 2015). In the Bay Area, just over 17,000 units of affordable housing (for moderate-, low-, and very-low-income households) are needed annually through 2040 (Wegmann 2012). Inclusionary zoning, on its own, is not enough to satisfy so large a demand.

[12] This estimate includes units produced "in whole or part with [in-lieu] fees," paid by developers in place of building the below-market rate units in their developments.

[13] 1,500,213 units of housing were authorized to be constructed in this period.

Statewide Characteristics of Inclusionary Housing Policies

In California, inclusionary zoning has been significantly circumscribed. In 2009, two Court of Appeal decisions, *Building Industry Ass'n of Cent. California v. City of Patterson* ("*Patterson*") and *Palmer/Sixth Street Properties L.P. v. City of Los Angeles* ("*Palmer*") together upended previous understandings about the validity of, and appropriate analysis applied to, inclusionary housing ordinances. *Palmer* found that an existing state law related to rent control precludes jurisdictions from forcing developers to include rent-restricted units in their market-rate, rental developments (Shigley 2009). More specifically, the two cases, taken together, have the following implications for inclusionary ordinances:

1. *Patterson* suggests that inclusionary housing ordinances should be viewed as "exactions" that must be justified by nexus studies.[14]
2. *Palmer* does not allow inclusionary housing ordinances to limit rents unless public assistance is provided (*Palmer* does not affect buildings that receive public funds, nor those that receive some regulatory incentive, such as a density bonus (21 Elements, Strategic Economics, and Vernazza Wolfe Associates, Inc. 2015).

Since these decisions, most California jurisdictions have ceased applying their inclusionary policy to market-rate rental developments to stay clear of legal trouble (Hickey 2013). This is significant because California is home to almost half of the nation's inclusionary policies (Hickey 2013). Others have instead required developers to pay fees in lieu of construction inclusionary units, which the city can then use for funding separate affordable housing. However, such policies require a nexus study to be completed showing that the fee imposed is equal to the contribution the development makes to the affordable housing project; therefore, the potential revenue that can be raised is lower (Jacobus 2015).

The inability to generate inclusionary rental units comes at a time when many California towns and cities are seeing rent levels nearing all-time highs, and fiscally strapped state and local governments have cut or fully spent public funds that subsidize affordable rental housing. The *Palmer* decision has highlighted the importance of finding new ways to address legal impediments to rental inclusionary housing; some of the challenges are outlined in Appendix V.

In 2013, a bill to reverse the *Palmer* decision was passed by the California legislature, but was vetoed by Governor Brown (Daniel 2013). Efforts are ongoing to pass a "*Palmer* fix."

Although the Palmer ruling did not restrict inclusionary zoning policies related to ownership units, a subsequent case in San Jose challenged those laws as well (*California Building Industry Ass'n ("BIA") v. City of San Jose).* In June 2015, the California Supreme Court ruled that inclusionary zoning ordinances for ownership units are allowed under jurisdictions' police powers and, importantly, "affordable housing ordinances are simply price controls on new homes" and therefore require no

[14] Nexus studies must show that the construction of market-rate housing contributes to the need for affordable housing. They usually do so by showing the new market-rate housing will increase household spending in a community, which will create low-wage jobs, whose workers will need a place to live. An alternative nexus theory, more difficult to quantify, is that market-rate projects use up land that would otherwise be available for affordable housing. In a case involving commercial linkage fees, the Ninth Circuit discussed the "indirectness of the connection between the creation of new jobs and the need for low-income housing," but ultimately concluded that the fees bore a "*rational relationship* to a public cost closely associated with" new development. *Commercial Builders of Northern California v City of Sacramento,* 941 F.2d 872, 874-76 (9th Cir. 1991).

nexus studies or proof of "deleterious impact" to be passed, making their implementation much easier (Goldfarb Lipman LLP 2015).

Assessing the effectiveness and importance of inclusionary policies, one expert said: "No one has ever claimed that inclusionary is *the* policy…it's one more tool in the toolbox…maybe between inclusionary and impact fees and this and that, you can cobble together enough" to create some level of affordable housing (interview with authors).

A different expert commented that inclusionary zoning might be so widespread because it is, from a fiscal standpoint, easy to pass: it requires no new tax funding nor allocation of general fund monies (interview with authors).

One of the most significant differences between older and newer programs is in the affordability of units produced (NPH 2007). According to the NPH report, newer programs (post-2000s) produce more rental housing and more housing for lower-income households, when compared with older programs (Figure 5.5).

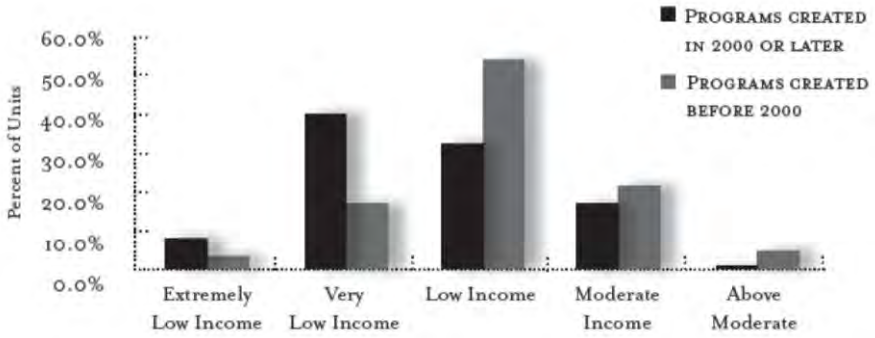


Figure 5.5: Distribution of Units by Income Level and Age of Inclusionary Program
Source: (NPH 2007, 20)

The report also documented that almost none of the housing goes to extremely-low-income households, a quarter to very-low-income, nearly half to lo- income, and 21% to moderate-income (Figure 5.6) (NPH 2007, 14).

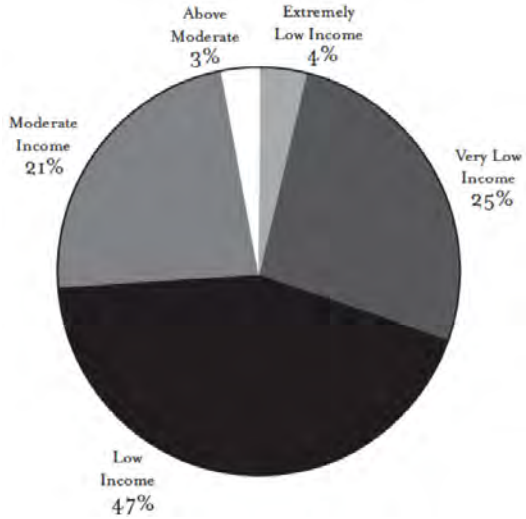


Figure 5.6: Inclusionary-Development Units by Income Target
Source: (NPH 2007, 14).

Although 81% of programs in California offered payment of fees as an option (CCRH and NPH 2003), there are not many estimates of the total amount of in-lieu fees generated by inclusionary programs. The NPH report (2007) estimates the number of units created as a result of in-lieu fee: "nearly one-quarter of all the reported units (4,798)" (NPH 2007, 17). But the authors also claim that it is very likely the figure is higher. Such counts are inexact because most jurisdictions mingle in-lieu fees with other housing funds and do not track them separately. While most of the cities and counties with inclusionary housing allow in-lieu fees, the NPH study found that a smaller percentage of developers exercised this option.

Inclusionary Housing in the Bay Area

In the Bay Area, 72% of cities have inclusionary zoning policies in place (Figure 5.7). One expert thought the policy's prevalence could be related to how easy the policy is to implement: "it doesn't cost them money," like funding affordable housing directly does. He believes that passing inclusionary laws allows cities to say "development is still happening, we're getting housing built, and we're still getting some affordable housing, aren't we great. So I think at some point if enough cities are doing it the rest do it because it just becomes common sense" (interview with authors). On the other hand, the expert also speculated that some communities implement inclusionary housing as a "growth control measure…[such cities] were really interested in getting no more housing at all" as opposed to affordable housing (interview with authors).

Three policies were adopted between 1979 and 1989; 19 in the 1990s; 38 in the 2000s; and 11 between 2010 and 2014. The policies differ in terms of whether they target rental or ownership housing or both, and in regards to the specific proportion of affordable housing they require. Other differences include whether developers are allowed to construct their inclusionary units off-site from their market-rate development, and whether they may pay fees in lieu of providing the housing. There is no geographic pattern to which cities have inclusionary zoning policies.

Notably, Oakland, which has 10 of the 14 policies in place, does not have an inclusionary policy. A longtime advocate in Oakland believed this was because the city council is "just so eager to get development of any [kind]" given an "image problem" and a view that "people don't want to invest in Oakland" and so are wary of placing any limitation on that, even negotiating with a developer to include community benefits or some affordable housing (interview with authors).

Most policies require developers to designate between 10-15% of their units as affordable, with others as high as 20% or as low as 4%. Nearly 70% of policies include an "in-lieu fee" provision that allows developers to pay a fee to the city instead of building the affordable units. Most policies specify a "minimum" number of units that triggers the law, around four-10.

Several cities include different requirements for different income levels. For example, in Richmond, developers must include either 17% of their units affordable to moderate-income households, 15% to low-income, 10% to very-low-income, or 12.5% to a combination of very-low-income and low-income. A plurality of policies explicitly target moderate-, low-, and very-low-income households (nearly 40%), while others focus on only low- and very-low-income households.

A very common feature of the policies is to include a prescribed breakdown of levels of affordability within the required below market-rate (BMR) units: for example, in San Bruno, 15% of units (in projects with 10 units or more) must be BMR; for rental buildings, 40% of those units are for very-low-income households, and the rest for low-income, while in ownership buildings, 40% are

reserved for low-income households and the rest for moderate-income. However, cities vary in terms of the income level qualifying for such affordable housing units—many cities also target moderate-income households, while other cities only focus on low-income households. Stakeholders from several cities in the Bay Area (Sonoma and Concord, for example) suggested changing the policies to shift the focus from moderate-income to lower-income households. Several other stakeholders suggested raising the in-lieu fees, which they said are currently too low. Many respondents also cited the *Palmer* case and the governor's veto of a "*Palmer* fix" as challenges to the implementation of such policies.

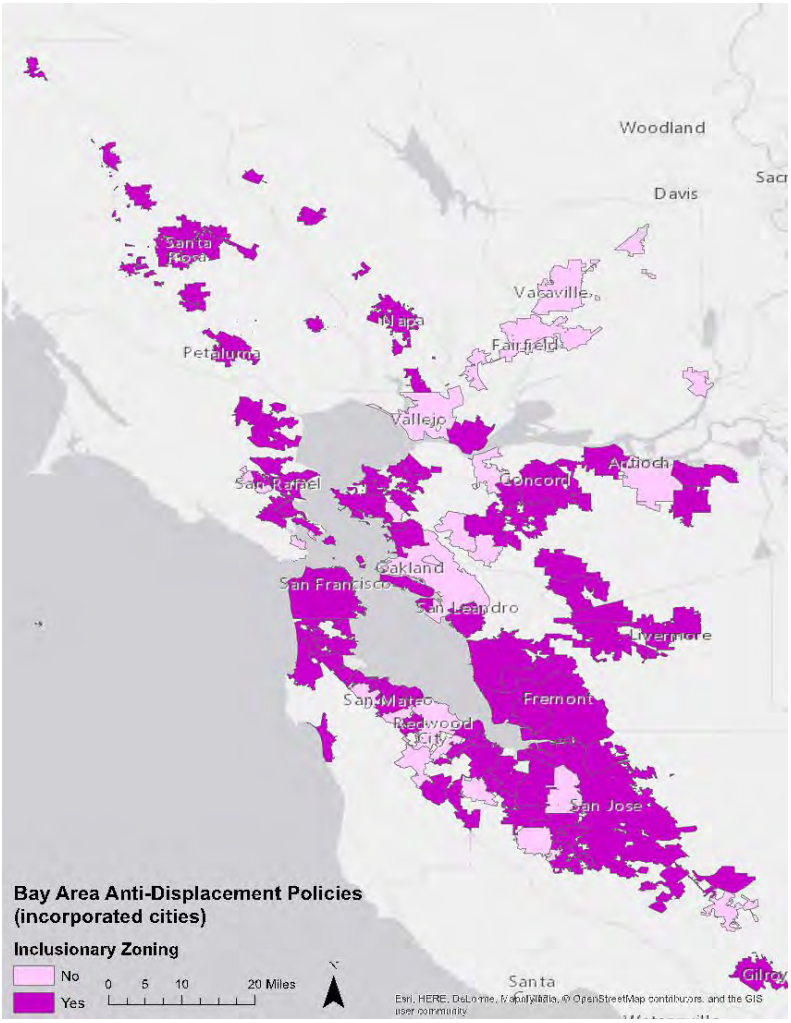


Figure 5.7: Inclusionary Zoning in Bay Area Cities
Source: UC Berkeley Internal Analysis

The experience of two cities in the Bay Area (Colma and Walnut Creek) shows that inclusionary zoning does not work in cities without significant new housing investment. In these cities, stakeholders report that very few units (less than 10) have been developed as part of the ordinances, which were implemented in 2005 in Colma and 2004 in Walnut Creek.

These are both places that have experienced minimal development of any level: in Colma, which is comprised in large part of cemeteries, only two units of any kind have been built between 2007 and 2013, while in Walnut Creek, the figure is 75. However, in Walnut Creek, 47 of those units have

been for very-low-income households, even though no or very few units of inclusionary zoning have been developed. This indicates that other strategies besides inclusionary zoning are working to provide affordable housing.

Other cities have seen more success: in East Palo Alto, 80 units were developed through the policy between 1994-2013; in Sunnyvale, hundreds of units have been constructed since 1980; and in San Francisco, 1,214 on-site units and 346 off-site units have been constructed between 1992-2013 (San Francisco Mayor's Office of Housing and Community Development 2014). These statistics are the exception to the rule: most cities do not track the numbers of units built through inclusionary ordinances, according to a stakeholder.

Inclusionary Housing in Los Angeles

In Los Angeles County, there are 14 cities with inclusionary housing policies. Three cities adopted inclusionary zoning in the 1980s, five in the 1990s, and six from 2000 to 2010. La Verne has inclusionary zoning in its Old Town Community Plan, while Malibu only has in-lieu fees (Ordinance 375), but not inclusionary zoning. Twelve of the 14 cities with inclusionary housing policies have mandatory inclusionary zoning, while the remaining two, Long Beach and Monrovia, have voluntary programs. Voluntary programs are based on the premise that cost offsets provide sufficient incentive for developers to participate in the arrangement (Mukhija et al. 2010, pp. 233–234). On the other hand, mandatory programs are likely to be based on the premise that revenue-neutral cost offsets are not necessary or that voluntary programs, even if financially neutral, are insufficient to motivate developers (Mukhija et al. 2010, pp. 233–234).

There are three recent papers or reports that provide numbers for how many units of affordable housing were produced through inclusionary zoning policies for some of the 14 Los Angeles cities. Although not all the cities are included and the time frames for when the information was collected varies, they provide a glimpse of how many affordable units have been produced using inclusionary zoning since the late 1990s.

The Non-Profit Housing Association of Northern California (NPH) report discussed above found that a total 659 affordable units were created through inclusionary zoning in the Los Angeles region from 1999 to 2006; however, this only accounts for inventories in six cities (Table 5.9). (NPH 2007, p. 7). Artesia is the only jurisdiction in the Los Angeles region that reported that 10% or more of the total housing in its jurisdiction was for affordable units as a result of local inclusionary housing programs (NPH 2007, 8).

Table 5.9: Inclusionary Housing Units Produced (1999-2006)

City	Affordable Units Completed	Units Created via In-lieu Fees	Total Units Created
Artesia	25	Not available	25
Calabasas	No response	No response	0
Glendale	No response	No response	0
Pasadena	348	178	526
Rancho Palos Verdes	No response	No response	0
West Hollywood	37	71	108
Total	410	249	659

Source: NPH, 2007

A Lincoln Institute paper that analyzed 20 inclusionary housing programs nationwide included one city in Los Angeles, Santa Monica (Hickey 2014). According to this report, up to 2006 Santa Monica had produced around 1,000 affordable housing units from inclusionary housing, 998 rental and two for-sale units (Hickey 2014, p. 23). These figures do not include affordable units developed by in-lieu fees. A more recent study by Mukhija et al. (2010) provides the numbers of affordable units created through inclusionary zoning for nine of the 14 Los Angeles cities from 1998 to 2005, as seen in Table
5.10.

Table 5.10: Inclusionary Housing Units Produced (1998-2005)

City	Affordable Units Completed	Affordable Units in Development	Units Created via In-lieu Fees	Total Units Created
Agoura Hills	36	0	Not available	36
Calabasas	0	0	0	0
Huntington Beach	428	78	111	617
Long Beach	0	0	N/A	0
Monrovia	0	0	N/A	0
Pasadena	346	357	128	831
Rancho Palos Verdes	0	9	0	9
Santa Monica	680	72	534	1,286
West Hollywood	91	50	224	365
Total	1581	566	997	3143

Source: Mukhija et al. 2010

Overall, studies have found that many cities do not have complete and accessible data on the number of affordable housing units produced (or the in-lieu fees generated) through inclusionary zoning (Mukhija et al. 2010; NPH 2007).

Condominium Conversion

The conversion of multifamily rental housing into condominiums is not a new phenomenon. The conversions of condominiums is a well-established trend that typically moves in waves (Chambers 2005; Pitarre 2005). "[Conversions were] popular in the late 1970s, and then [they] stopped completely. A mini wave happened again in the late 1980s, and now we're seeing another wave" (Pitarre 2005 in Chambers 2005, p. 359). Historically, the most dramatic increases in conversions have occurred just before the real estate market peaks (LePage 2004 in Chambers 2005). For example, between 1970 and 1979, there were 366,000 conversions nationwide; 135,000 of those occurred in 1979 alone (Casazza 1982, p. 4).

There are several factors that fuel the condominium conversion trends in California: the lack of affordable homeownership options, an insufficient supply of undeveloped land, and developers' financial motivation (Chambers 2005). Proponents of conversions emphasize that condos open the door to home ownership to people otherwise priced out of the housing market (LePage 2004, p. 29). Condominiums are typically much more affordable than detached, single-family homes. Thus, with affordable housing in California becoming increasingly scarce, "[c]onverted condominiums... are the only way for many residents to buy their first home" (Jones 2005a). The economic advantages of condominium ownership created a growth in both the demand and development of condominiums by the early 1980s (Vandeveer 1980; Judson 1983; Roback 1985).

The second component underlying the California boom of condominium conversions is the absence of available land for development (Hammer 2004). Thus, conversions are undertaken out of lack of alternative options. The last major factor fueling condominium conversions is the incentive for profit (Vandeveer 1980; Hammer 2004; Chambers 2005). The developer of a converted condominium project can realize returns from 15% to 30% in a matter of months (Pitarre 2005). Additionally, developers often save time and costs when they convert existing apartments instead of building new condominiums (Levy et al. 2006).

Together these incentives enable developers to pay substantial premiums for the apartment properties they acquire, often providing a high motivation for apartment building owners to sell their buildings (Gose 2004). Overall, this has resulted in a boom of converting existing apartments into condominiums in the 1980s and again in the early 2000s (Vandeveer 1980; Judson 1983; Roback 1985; Hofmann 2005; Ottens 2013).

While conversions have proven to be economically profitable to some building owners, the increasing frequency rate of conversions has sparked housing availability concerns. In recent years, the increase in conversions has resulted in the decrease of available rental units in many urban areas. For instance, by 1980, in California, the conversion of apartments to condominiums had doubled every year since 1976 (Vandeveer 1980, p. 467). The condominium surge returned in the mid-2000s.

Although no exact figures are available on how many renters are affected, the number of apartments sold to condominium redevelopers nationwide rose nearly tenfold from 7,800 in 2002 to 70,800 in 2004, according to Real Capital Analytics, a Manhattan-based research consulting firm (Jones 2005b). The condominium conversions are occurring most rapidly in Southern California, Northern Virginia, and the Miami and Las Vegas areas (Jones 2005b).

In addition to shrinking the supply of available rental units, condominium conversions also create numerous tenant-related problems (Committee on Government Operations, Commerce, Consumer, and Monetary Affairs Subcommittee, and U.S. Congress 1981). Tenants on fixed income such as the elderly, young families, couples, and individuals without operating capital are unable to purchase units they live in, or in some cases find replacement rental housing. Relocation becomes necessary and substantial moving costs can be incurred.

Condominium conversions are controlled primarily by local government regulations. In California as a whole, landowners must follow the Subdivision Map Act to convert rental property to condominiums, which includes applying for a tract map, attending a public hearing, and securing a public report from the State Department of Real Estate (Portman and Brown 2013). Tenants must be given sufficient notice if they are to be evicted, as well as the right to buy their unit (Portman and Brown 2013). However, even these provisions do not impose substantive restrictions on the ability of developers to convert (Bakker 2005). In addition, there are a number of ambiguities in state law provisions. Therefore, many cities have enacted condominium conversion ordinances that impose restrictions on the ability to convert and also deal with some of the ambiguities contained in the state law provisions. For example, under the California Subdivision Map Act, localities may establish social and economic criteria for regulating conversion in order to “make adequate provision for the housing needs of all economic segments of the community” (Cal. Gov Code § 65580(d)(West Supp. 1982)).

Local condominium conversion policies limit landlords' ability to turn multi-family rental housing into condominiums. These help existing tenants to stay in their housing as well preserving the overall stock of rental housing (Allbee, Johnson, and Lubell with ChangeLabSolutions 2015).

Bakker (2005) lists the most typical provisions found in procedural ordinances (ordinances that do not impose direct limits on conversions), which include a requirement that the initial notice of intention to convert contains a statement of tenant rights, a restriction on increasing rent during pendency of conversion process, and a requirement that the converter enters into extended leases (that will extend beyond the conversion).

Many local ordinances include provisions that require landlords to offer financial assistance to "elderly, disabled, or low-income tenants, and to families with minor children" as well as lifetime leases for elderly tenants (Portman and Brown 2013). Policies may also include specific notification requirements for tenants (such as 90 days or a year), relocation assistance, or offering residents the right to purchase their apartment (Allbee, Johnson, and Lubell with ChangeLabSolutions 2015).

In contrast to procedural ordinances, substantive ordinances typically limit the number of condo units that may be converted each year. The criteria for determining whether conversion is permitted or not is usually based on one or more of the following:

- Prohibiting conversions unless the city or regional vacancy rate is above a certain fixed amount.
- Prohibiting conversions unless the percent of total units rented is equal to or above a certain fixed number following the conversion. For example, the city might set its rental housing ratio at 30%, and conversions would be approved unless the conversion would push the proportion of rental units below 30%.
- Limiting annual conversions to a fixed percentage (such as 5%) of the total rental units in the community, or limiting them to a fixed number of units.

Condominium Conversion in the Bay Area

Seventy-three cities in the Bay Area have condominium conversion policies in place (67% of all cities/counties, see Figure 5.8), making this policy one of the most widespread of the 14 we considered. These policies were passed between 1974 and 2013: 11 in the 1970s, 24 in the 1980s (mostly 1980-1983), 12 in the 1990s, and 24 since 2000. Most prohibit conversion unless the vacancy rate in the city is above a certain level, usually around 3-5%. A few prohibit conversion of small buildings (such as fewer than 21 units in Burlingame). Others limit conversions based on the proportion of the housing stock that is rental: in Alameda and Santa Clara, conversion cannot occur if the percentage of units that are rented will drop below 40% due to conversion; in San Anselmo, the figure is 25%; in Mountain View and San Bruno, there is a floor of rental units as opposed to a percentage. Others set an annual limit on the number of units that may convert to condominiums: 200 in San Francisco, 100 in Fremont, 100 in Berkeley, 5% of units in Sausalito, 7% of units in Dublin. In Piedmont, apartments converted to condominiums must be replaced in kind by an equal number of equivalently priced rental units, with rents restricted for 55 years.

One stakeholder in Daly City believes "there is no need for the statute. Condominium conversions are not the trend in the housing market as they once were in the 1980s-1990s." Several other stakeholders around the Bay echoed a similar sentiment: while important at one time, condo conversions simply are not happening anymore. Yet many stakeholders around the Bay view these policies favorably: one in Sonoma noted "it has been effective;" and in South San Francisco, "no condominium conversions have occurred…to that extent, the current policy is very successful at

preventing the loss of rental units." On the other hand, a stakeholder in San Francisco writes, "There are multiple problems with the ordinance. Existing tenants are pressured to accept buy-outs to move…[and it] also does not regulate [tenancy-in-common] conversions which would require state law reform to cover such conversions" (interviews with authors).

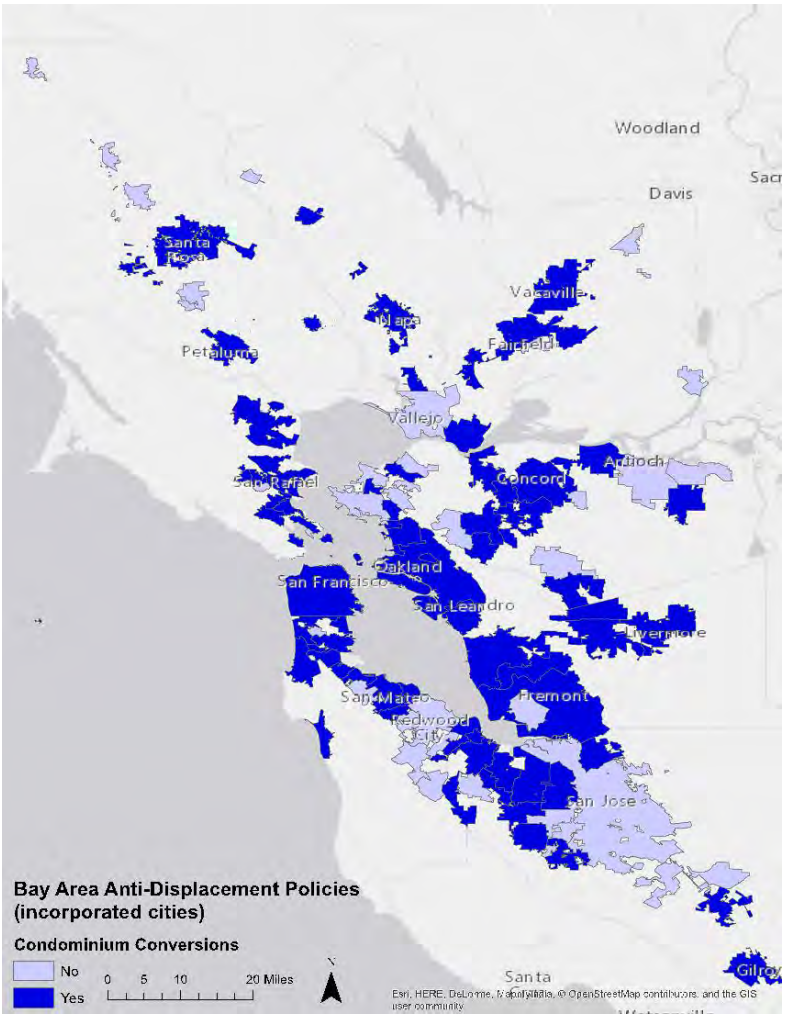


Figure 5.8: Condominium Conversion Policies in Bay Area Cities
Source: UC Berkeley Internal Analysis

One policy expert described many loopholes in Oakland's condominium conversion policy that make it ineffective. The law's intent is to ensure that any developer who takes rental units off the market must replace each one with rental housing someplace else. Developers can do this by building those units or buying "credits" from another developer for rental housing that another developer owns. However, developers can build a building as a condominium, rent out the units for seven years, and, through a provision in the law, that seven-year period generates conversion rights which can be sold to another developer. At the end of the seven-year period, the original developer can then sell the units, which means "there's no permanent replacement housing." Another loophole in the law, according to the expert, is that two- to four-unit buildings outside a certain zone in the city are exempt from the policy; most of the "close to 1,000" condo conversions in the last 10-15 years were in buildings this size (interview with authors).

One way developers avoid condominium conversion policies statewide is to evict tenants under the Ellis Act (which is by law a statement that they are exiting the rental housing business) and then sell the emptied building as condominiums later on, according to an expert (interview with authors).
These are but a few examples of how condominium conversion laws—and others, too—may seem effective on paper, but play out very differently.

Condominium Conversion in Los Angeles

In 2007, the City of Los Angeles issued 208 permits allowing apartment complexes to be converted to condominiums. Before the recession in 2008/2009, it was common for apartments to convert to condos when the market was hot. But when the housing bubble burst, the trend slowed down and declined every year afterwards. The city issued only 38 permits in 2010 (Ottens 2013). However, a 2013 *Los Angeles Times* article stated that, "Apartment building owners in Los Angeles and throughout California are once again converting to condos, but not at the torrid pace of 2007, when condo conversion peaked before the Great Recession" (Ottens 2013).

The Condominium Conversion Ordinance is the most prevalent anti-displacement policy in the Los Angeles region, with 27% of the jurisdictions having implemented it (24 jurisdictions). The majority of the cities in Los Angeles have procedural ordinances. The earliest condominium conversion ordinances date back to the late 1970s (two cities) and early 1980s (five cities). There were five cities that implemented condominium conversion ordinances in the 1990s and 12 from 2000 to the present. One of the cities, Pasadena, has imposed a Condominium Conversion Moratorium, which began in 2007. The use of these ordinances by cities may be reflective of condominium conversion booms from the 1980s and early to mid-2000s.

Rent Control in the Bay Area

Rent control refers to policies that limit the rent private landlords may charge tenants, either fixing it at a certain dollar amount, allowing it to increase by a specific percentage (often tied to the official rate of inflation) annually, or having the allowable increase set by a board each year. Some policies include restrictions on evictions and specific processes for landlords or tenants to petition for higher or lower increases, respectively.

Nationally, rent control was popular in the late 1960s through the early 1980s (Levy et al. 2006). By the late 1970s, 170 municipalities had put rent control laws in place, "mainly in the Northeast and California where the rent pressures were most severe and tenant organizations were strongest" (Keating and Kahn 2001, p.1). However, in the 1980s, an "emerging conservative onslaught" put tenants "on the defensive" and curtailed additional rent control ordinances, though cities that had passed rent control maintained a strong tenant voice (Keating and Kahn 2001). However, in Massachusetts and California, rent control was eliminated or limited, respectively, statewide; this is consistent with a national trend whereby opponents of rent control turn to the state level if they cannot roll back laws at the local level (Keating and Kahn 2001).

Nine cities in the Bay Area have rent stabilization/control policies in place, summarized in Table 5.11 and displayed in Figure 5.9.

Table 5.11: Cities in the Bay Area with Rent Stabilization/Control Ordinances

City	Year Introduced, Last Modified	Allowable Rent Increases	Type (according to California Tenants' Rights Guide)
Berkeley	1980, 2005	65% of the Consumer Price Index (CPI). Once per year.	Strict
Campbell	1983, 1998	No binding rule, but allows tenants to contest rent increases and includes dispute mediation.	N/A
East Palo Alto	1983, 2010	80% of the CPI but not exceeding 10%. Once a year.	Strict
Fremont	1997, 2001	No binding rule, but allows tenants to contest rent increases and includes dispute mediation.	N/A
Hayward	1980, 2003	5% max annual increase.	Weak
Los Gatos	1980, 2004	5% max annual increase or 70% of the increase in the CPI, whichever is greater. Once a year.	Weak
Oakland	1980, 2014	CPI; more if landlords have "banked" their rent increases. Once a year.	Weak
San Francisco	1970	60% of CPI, not exceeding 7%.	Strict
San Jose	1985	8% increase; 21% if the last increase was more than 24 months ago. Once a year.	Weak

Source: UC Berkeley Internal Analysis; (Portman and Brown 2013).

All the ordinances were passed between 1980-1985 except San Francisco's, which passed in 1970. Explaining the reason for the surge in rent control policies in the early 1980s, one stakeholder said these policies were in reaction to Prop 13. A policy expert mentioned that many rent control laws include a provision that if the vacancy rate is above a certain level (5 or 6%), the law does not apply, "because if you've got a really soft market it's harder to argue that there's a public purpose" (interviews with authors).

Most policies use the consumer price index, a measure of inflation, as the benchmark for the increase—such as East Palo Alto, where allowable rent increases are 80% of the consumer price index in that year—while others have a set increase of 5% or 8%. All policies allow only one increase per year.

Another way these policies vary is in which units they cover; statewide, no policy covers all rental housing (which is circumscribed under state law). For example, in San Francisco, units built after 1979 are exempt (Portman and Brown 2013). Most of the policies in the Bay Area exempt units built after they were passed.

All the cities listed here, with the exception of Los Gatos and San Jose, also have just-cause-for-evictions laws in place, which prohibit a landlord from evicting a tenant except for specific reasons. Such provisions are essential to make rent control effective because, without them, landlords can avoid rent control limits by evicting tenants for no reason, and then using vacancy decontrol to raise rent on the next tenant.

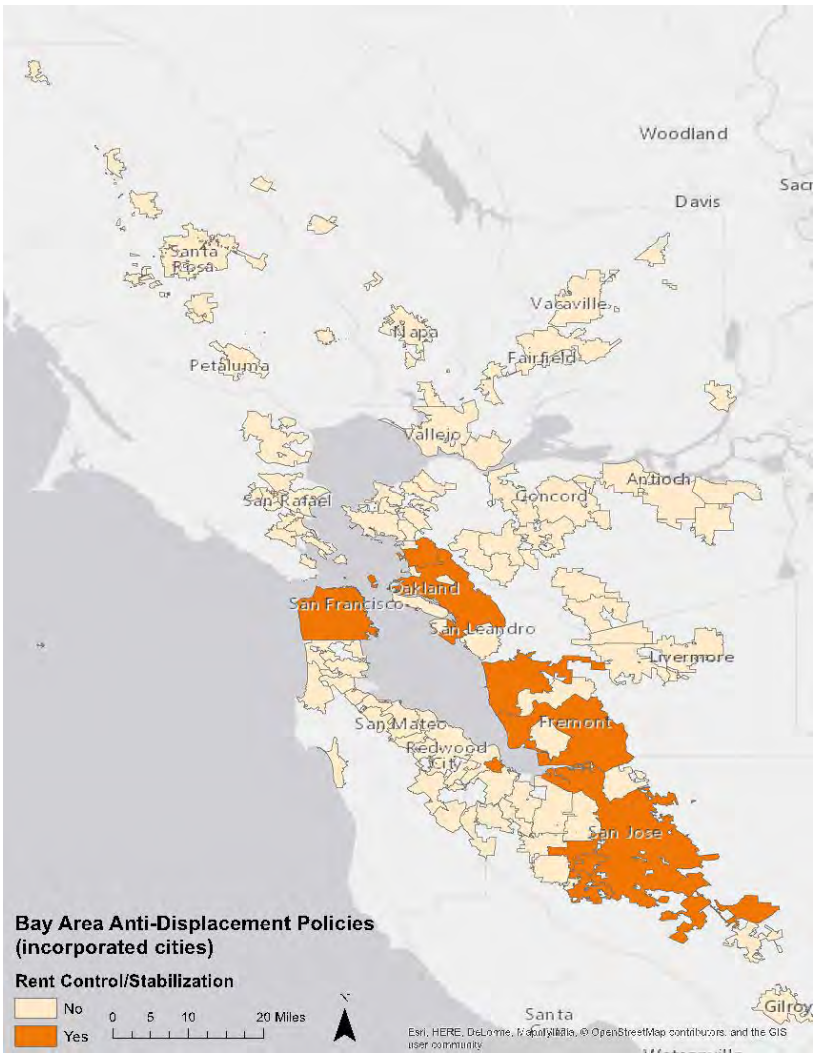


Figure 5.9: Rent Control Policies in the Bay Area

Source: UC Berkeley Internal Analysis

The California Tenants' Rights guide classifies California cities' rent control policies into groups: "Weak Rent Control" laws allow landlords to raise the rent generously, and even above the fixed amount unless a tenant protests to a rent board. These policies do not require landlords to register their units with the city. "Moderate-to-Strict Rent Control" laws require the landlord to prove they must raise rent beyond the threshold listed in the law, include a just-cause evictions ordinance, and require landlords to register units with the city (Portman and Brown 2013).

One stakeholder from San Jose said, "Rent Control has been implemented in San Jose and is in force for qualifying units. However, because there is high tenant turnover and no eviction protections, it has not been effective in keeping rents down overall." Regarding Oakland's rent control law, a stakeholder there commented that, though "there are weaknesses…at the end of the day, [it] is working." One weakness, cited by a different stakeholder, is that the city lacks a registry of rent-controlled units, making it difficult to track them and ensure compliance (interview with authors).
There have been no new rent control ordinances passed in the Bay Area since 1985. However, San Mateo County recently appointed a commission to study the policy and then promptly scaled back the study to be a request for only "a little" more information (Kinney 2015a; Kinney 2015b). In

Richmond, a just-cause evictions and rent control ordinance passed a first reading in July 2015, only to be voted down at the second reading amidst major pushback, though a revised version was ultimately passed (Swan 2015; Ioffee 2015). These examples show how difficult it is to pass new rent control ordinances. The stakeholder believes the Bay Area may be experiencing another "moment" where such policies may kick in, "because the crisis is so sharp and happened so quickly" (interview with authors).

In terms of directions for improving rent control policies, one expert thinks a key change would be shifting the onus of proving a rent increase is legal from tenants to landlords (where applicable): "If that were the case, you'd have to change the whole administration and in the long run it'd probably increase the registration fee because you'd now be registering units and…there'd be cases all the time. So, it would definitely change it" (interview with authors).

Other key components of a rent control policy, according to the expert, include anti-harassment provisions, disallowing owners from "effectively constructively [evicting] their tenants…And there has to be just-cause, because if you don't have just-cause then, you know, they'll just give people a 30-day notice. And if you have just-cause and no rent control, then they'll just double the person's rent. You know, so the two have to go hand in hand" (interview with authors).

Mobile Home Rent Control in Los Angeles

Although only a handful of mobile parks are located near transit, mobile home rent control is so widespread in the state that it is worth discussion. Most of the mobile home park construction in California took place in the 1960s and 1970s (Baar 2011). From 1960 to 1975, the number of mobile home park spaces in the state increased from about 150,000 to about 370,000. No mobile home parks have been constructed within the City of Los Angeles since the 1980s (Baar 2011; Zheng et al. 2007). A 1984 study commissioned by the city noted that no land was zoned for mobile home parks and that they were only permitted under special use permits. In Los Angeles County, the supply of mobile home park spaces has declined by about 10% since 1986, from 53,496 to 47,907 (Baar 2011).

The majority of mobile homes in the City of Los Angeles were manufactured before 1980, and only about 20% were manufactured within the last 25 years. By 2011, the City of Los Angeles had 57 mobile home parks with a total of 6,526 mobile home spaces (Baar 2011). In 2011, the average monthly rent of a mobile home park space in the City of Los Angeles was about $615 (Baar 2011, p. i). In addition to space rents, most mobile home tenants reimburse park owners or directly pay for sewer, water, or trash collection expenses.

The rising housing and land prices in Los Angeles and other California jurisdictions impact the land (or pad) rents in many of the state's mobile home parks (Zheng et al. 2007, p. 5). As a consequence, renters in many jurisdictions have launched efforts to have mobile home rent controls enacted into law. From 1983 to 2003 the number of mobile homes in California subject to rent controls increased (Zheng et al. 2007, p. 4). By 2005, over 90 California cities and eight counties had some sort of mobile home rent control (City of Banning 2005). In both the Los Angeles and Bay Area regions, rent control laws are more commonly adopted for mobile home parks than multi-family residential properties.

Mobile home park owners in the City of Los Angeles can increase space rents by only 10% when a mobile home is sold in-place to a new owner. This provision is the same in virtually all mobile home

parks, because mobile homes are sold in-place to incoming tenants, rather than being moved. The 10% ceiling under the mobile home space rent regulation differs from the regulations of apartment rents that permit unlimited rent increases upon a change in tenancy (Baar 2011). In the City of Los Angeles, owners may increase the rent by the consumer price index.

Under California state law, spaces covered by leases of one year or more that meet specified conditions are exempted from local rent regulations (Civil Code Sections 798-799.2.5). However, park owners may not require that current tenants enter into such leases and most local rent ordinances, including the City of Los Angeles ordinance, provide that prospective tenants cannot be required to enter an exempt lease as a condition for approval to move into the park (Baar 2011, 40).

Some have speculated that the implementation of rent controls in California jurisdictions may explain the declining shipments of mobile homes to the state (Hirsch and Rufolo 1999). However, while the decrease in mobile home park construction since the 1980s has been attributed to rent controls, it is important to note that since 1992, state law has exempted newly created mobile home park spaces from local rent regulations (California Civil Code Sec. 798.45 (1992)).

Case Studies

To better understand how these and other policies have helped avoid displacement in practice, we next consider several case studies of places that were vulnerable to but did not experience the gentrification or displacement we would have expected.

In the Bay Area, we profile neighborhoods in Chinatown (San Francisco), East Palo Alto, and San Jose. These neighborhoods (each occupying one or two census tracts) were chosen from among all the tracts that were low-income places at risk of gentrification or displacement[15] in 1990-2000, but did not experience gentrification[16] between 2000 and 2013, shown in Figure 5.10.

[15] "At risk of gentrification" defined as: Population in 2013 over 500; Percent low income (80% or less than surrounding county's median income) greater than regional median (39%); Signs of vulnerability to gentrification/loss of low-income household (at least 4 out of 7): 1. Has rail station in tract 2. Percent of units in prewar buildings greater than regional median, 3. Loss of market-rate units affordable to low-income households greater than regional median (1990-2000), 4. Employment density greater than regional median (2000), 5. Rent increase greater than regional median (1990-2000), 6. Real estate sales value increase more than regional median (1990-2000), 7. Development of market rate-units greater than regional median (1990-2000).

[16] Gentrification defined as: Growth in percent college-educated greater than region; Growth in median household income greater than region; Percent market-rate units built between 2000-2013 greater than regional median; At least one of the following: Single-family sales price per square foot greater than regional median, Multi-family sales price per square foot greater than regional median, Home values greater than regional median.

Figure 5.10: Census Tracts at Risk for Gentrification/Displacement in 1990 and 2000, but Did Not Experience Gentrification between 2000 and 2013

Source: UC Berkeley Analysis

In Los Angeles County, there are 80 Metro rail stations. Here, our focus is three Metro station areas: Chinatown, Hollywood/Western, and 103rd St./Watts Towers. Input from our Southern California Advisory Board and diversity of station-area conditions influenced the selection of the three case studies. The neighborhoods are defined as 2010 census tracts completely or partially within a half--mile radius of the transit station. The Chinatown and Hollywood/Western are mixed-use areas that are at risk of gentrification, while 103rd St./Watts Towers is a residential commuter neighborhood that is not gentrifying. Specific policies related to transit-oriented development are in place at Hollywood/Western to mitigate change, while more general policies linking greenhouse gas reduction to land use and transportation have been adopted in Chinatown. Economic and community development efforts have been proposed for Watts over the decades.

Chinatown, San Francisco

Chinatown is situated at the center of San Francisco's booming real estate market, with close proximity to the Financial District, Downtown, and affluent neighborhoods such as Russian Hill. Due to its prime location, it was expected that Chinatown would have succumbed to the pressures of development and speculation that have transformed surrounding areas and much of San Francisco. However, deliberate anti-displacement zoning policies, widespread rent control, and a well-organized community have preserved Chinatown as an Asian-American and low-income enclave.

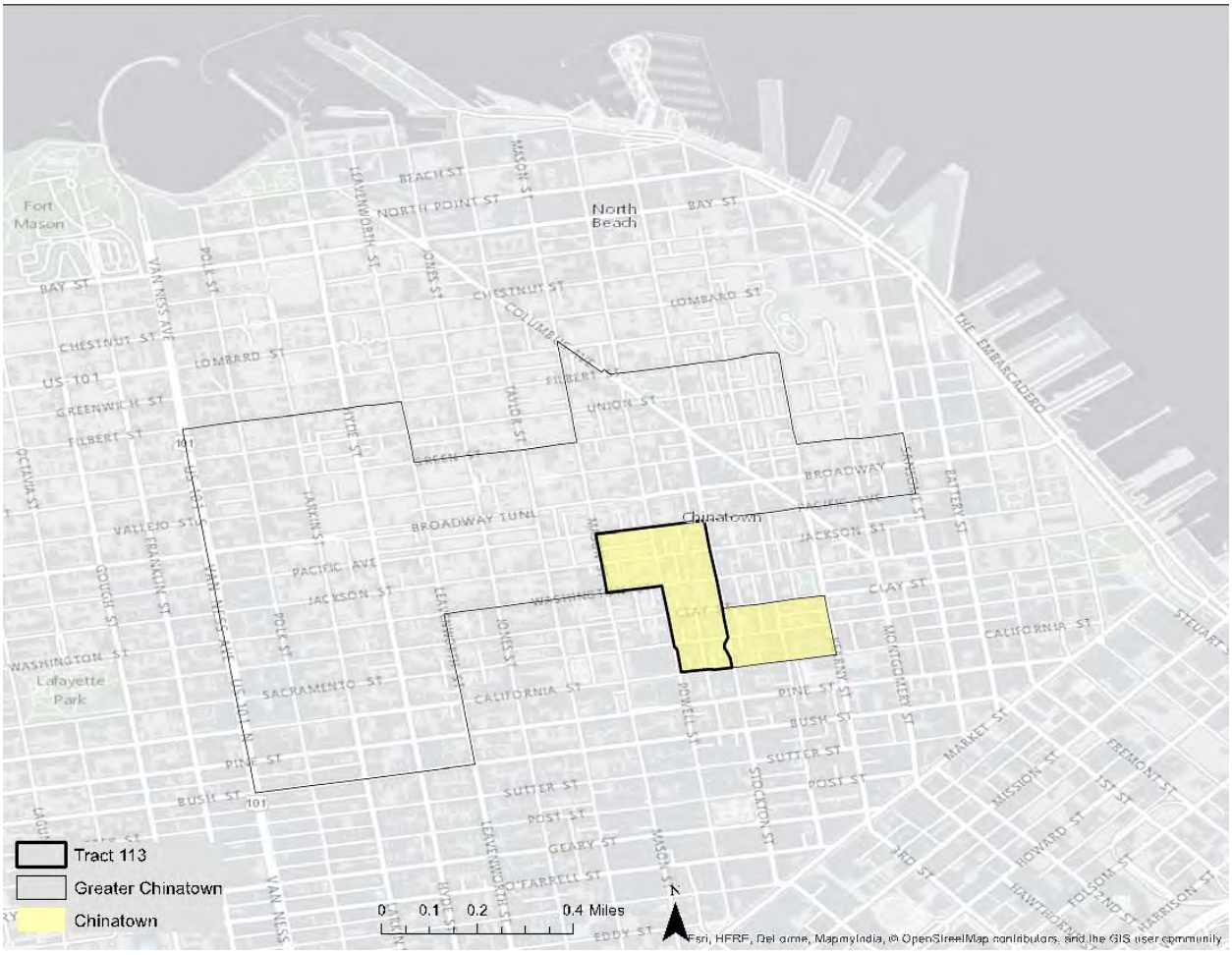


Figure 5.11: Tract 113, Chinatown, and Greater Chinatown

In this case study, we discuss Chinatown as a whole, but focus specifically on one census tract within this area: Tract 113, which closely mirrors the core of Chinatown (Figure 5.11). After outlining the history of Chinatown, we provide an overview of its demographic and housing characteristics, today and historically, before discussing the anti-displacement policies that have preserved the neighborhood.

History of Chinatown

As one of the oldest ethnic enclaves in the U.S., San Francisco's Chinatown has been a major immigrant gateway as well as a cultural, economic, and residential hub for the Bay Area's Chinese-American and Asian-American communities for over 150 years.

Chinatown's current location was established after the original neighborhood was destroyed in the 1906 earthquake and fire that razed over 80% of San Francisco. To this day, the official Chinatown neighborhood remains a relatively small land area (Figure 5.11). With the rapid growth of the Chinese--American population beginning in the 1960s, neighborhoods adjacent to the core area became home to many Chinese-American families, and businesses and institutions serving the Chinese-American community likewise began establishing themselves beyond the boundaries of Chinatown.

Much of Chinatown's housing was built as single-room occupancy (SRO) residential hotels or small rooms in commercial structures or community spaces. Chinese immigrants, who were barred from property ownership, were subjected to discriminatory housing practices by absentee landlords seeking to maximize profits. Housing was thus poorly maintained and often overcrowded (Yip 1985).

In the 1960s, the liberalization of U.S. immigration policy led to a population boom and subsequent shortage of affordable housing. Chinatown quickly became one of the densest neighborhoods in the country, with an overwhelming majority low-income renter population. SROs and other small residential units were often overcrowded, in poor condition, and yet still expensive for very low-income residents (Tan 2008).

The Chinese community's spatial segregation and social isolation contributed to the development of "an impenetrable social, political, and economic wall" between Chinatown and the rest of San Francisco (Wang 2007). While the neighborhood's insularity allowed for the formation of strong social networks and a self-sufficient system of community institutions, small businesses, and cultural activity (Yip 1985), it also reinforced a language barrier that still presents a challenge for socioeconomic integration and contributes to persistently high poverty and unemployment rates (Wang 2007).

Relative Demographic Stability, 1980-2013

Since the 1960s, Chinatown's population has included a large percentage of foreign-born, low-income Chinese-American and Asian-American families. The population in the tract increased by 13% between 1980 and 2009-2013 (from 2,840 to 3,204 residents), with a concurrent growth in the housing stock from 1,152 units to 1,617 units[17].

Asians decreased in their share of the population from 86% in 1980 to 78% in 2009-2013. However, the proportion of residents who are foreign-born only decreased slightly in that same time frame: from 69% to 67%. Seniors (60 and older) have also consistently made up a significant share of the population.

[17] Data in this section comes from the U.S. Census for the years 1980, 1990, 2000, and 2010, and the Geolytics database for 2013.

Poverty has increased as incomes have fallen: the poverty rate rose from 18% in 1980 to 26% in 2013, while median household income dropped from $45,797 to $23,261 (both in 2010 dollars). Today, Greater Chinatown is still primarily renter-occupied, though the share of owner-occupied housing units has grown slightly in recent years. With an estimated residential density of 85,000 people per square mile (Tan 2008), overcrowding and housing affordability remain pressing issues for the community: 19% of renter households are overcrowded (more than one person per room). Most (88%) housing units are rented, rather than owner-occupied. Median gross rent increased only slightly, from $535 in 1980 to $654 in 2013 (both in 2010 dollars). Even with these relatively low rents, 54% of renters pay more than 30% of their income on rent.

Rental prices have deviated significantly by area. Figure 5.12 shows that in contrast to other areas and San Francisco overall, median rent in Chinatown has remained exceptionally stable since 1990. This is primarily due to the large number of subsidized and rent-controlled units in Chinatown. This is powerful evidence of Chinatown's unlikely preservation as a place affordable to low-income people.

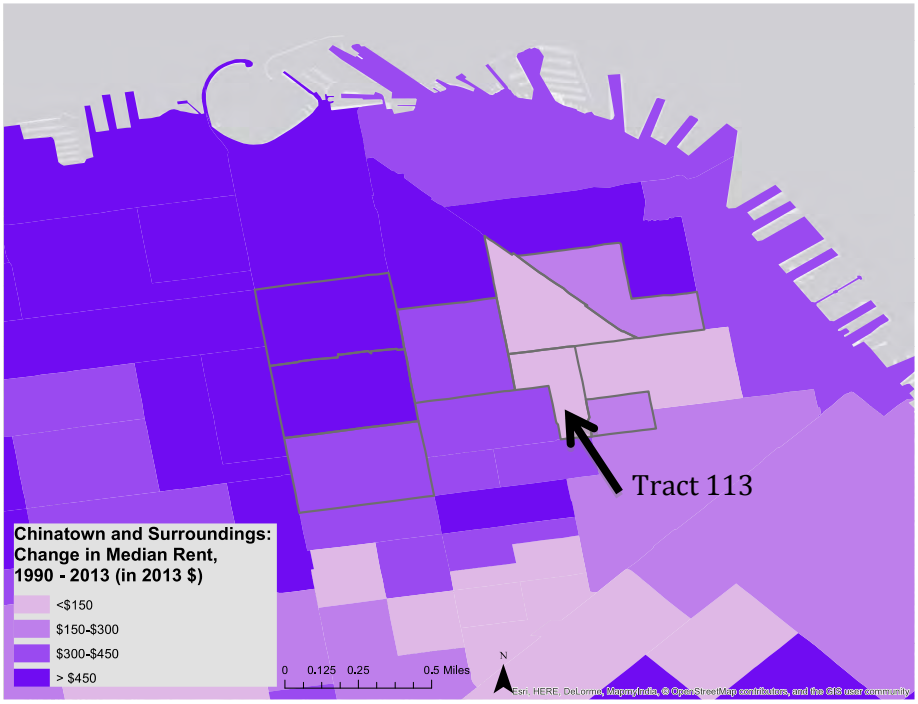


Figure 5.12: Change in Median Rent in Chinatown (Tract 113) and Surrounding Tracts

Anti-Displacement Policy in Chinatown

In the face of external pressures of gentrification, a number of key policies and planning efforts have uniquely allowed Chinatown to maintain its historic character and accessibility to low-income San Franciscans. One of the most influential and comprehensive policy changes took place in 1986, with the adoption of the City Planning Department's official Chinatown Rezoning Plan as an amendment to the General Plan, which resulted in the designation of Chinatown as a mixed use area distinct from Downtown.

The Chinatown Resource Center (predecessor to the currently existing Chinatown Community Development Center), led this planning effort with the Chinese Chamber of Commerce and Asian Neighborhood Design. In the years prior, Chinatown Resource Center had worked tirelessly to stave

off infringing developers, many of whom sought to purchase land for office uses (Chinn 2014). From the mid-1970s to mid-1980s, approximately 1,700 residential units in Chinatown were converted to office use, and at the same time, an influx of capital from Asian firms drove up both commercial and residential rents (C. Li 2011). As these factors exacerbated the threat of displacement, the Chinatown Resource Center realized the unsustainability of this project-by-project approach and switched course toward advocating for structural changes to the neighborhood's land use policy in an attempt to slow development (Chinn 2014).

They organized residents behind a proposed set of zoning regulations that were originally conceived of as part of a Chinatown community planning process that took place over several years prior (Chinn 2014), during which the San Francisco Planning Department had proposed a new Downtown Plan, and housing experts across the city sought to limit the proliferation of office buildings to preserve affordable housing (C. Li 2011). With the growing threat of speculation and encroaching development from Downtown, residents, community-based organizations, and city officials all exhibited political will for policy change, agreeing that action must be taken to preserve Chinatown's character and culture for its existing residents (Chinn 2014).

The proposal, which specifically addressed the core portion of Chinatown, sought to downzone the neighborhood by setting lower height limits that would curb the neighborhood's development potential. Previous zoning had set limits at much higher than the prevailing scale of most existing buildings. This was due to the fact that Chinatown had originally been zoned as "a creature of downtown," resulting in regulations that did not align with the neighborhood's distinct character (Chinn 2014). The community's proposal was thus broadly viewed as a necessary, sensible shift toward land use policy that was indigenous to Chinatown and "was the single most important achievement of Chinatown CDC in its first 35 years," according to its longtime director (Chinn 2014; Chin 2015, p. 140).

The 1986 Rezoning Plan's central aim was to protect what the Planning Department acknowledged was a "virtually irreplaceable" resource of affordable housing in Chinatown. The plan effectively prohibited demolition, allowing it only "if that is the only way to protect public safety or for a specific use in which there is a high degree of community need," and furthermore banned conversion of residential buildings into different uses (San Francisco Planning Department, n.d.).

Chinatown's large stock of SROs was granted protection by the 1980 citywide Residential Hotel Ordinance, which made it very difficult for developers to convert residential hotel rooms to commercial use by requiring replacement of lost affordable units and mandating that 80 percent of the replacement cost be paid by developers to the City for conversions or demolitions (Fribourg 2009).

With these requirements in place, approximately 50%of the Chinatown Core's housing stock has remained SRO hotels (Tan 2008), and an estimated 92% of units are protected by the 1979 San Francisco Rent Control Ordinance (Figure 5.13) (San Francisco Department of Public Health). A portion of these were purchased and by CCDC to preserve as low-rent housing (Chin 2015, p. 115).

Figure 5.13 also shows that there has not been a single no-fault eviction in Chinatown. According to one expert, "a large majority of these units continue to be owned by individuals that care about preserving Chinatown such as ethnic Chinese landlords and family associations"(Eng 2015).

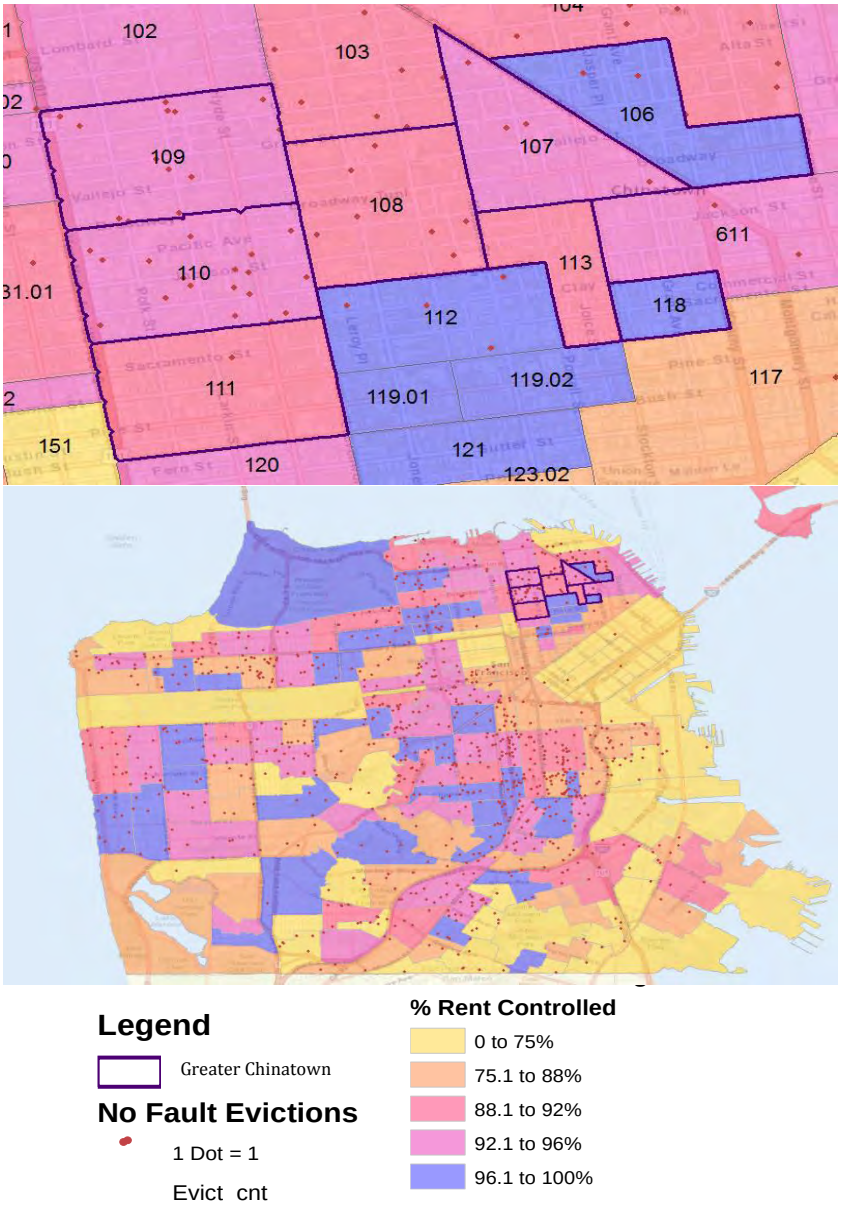


Figure 5.13: Instances of No-Fault Evictions and Percentage of Rent-Controlled Units in San Francisco by Census Tract and Chinatown and Surroundings

Source: San Francisco Department of Public Health

Thirty years later, the 1986 effort can thus be considered to have essentially achieved its policy objectives to "preserve the distinctive urban character of Chinatown" and "retain and reinforce Chinatown's mutually supportive functions as a neighborhood, capital city, and visitor attraction" (San Francisco Planning Department, n.d.).

While these policies did effectively preserve existing affordable housing, the construction of new affordable housing in Chinatown—desperately needed for San Francisco overall—has been limited; the small stock of 342 subsidized and public units has not increased since 1990, despite increasing need (CHPC 2014). Thus, the neighborhood's land use policy has given rise to other unresolved challenges of supplying sufficient housing in San Francisco. Plus, the housing in Chinatown is aging,

meaning there is a declining quality of housing as buildings have deteriorated (Chinn 2014). According to one stakeholder, the zoning limits in the area limit the ability to rebuild existing buildings as affordable housing—"if they fall in an earthquake, we lose that [affordable] housing" (interview with authors).

However, constraints surrounding both redevelopment and rehabilitation have made Chinatown somewhat less desirable to residential real estate speculators, limiting displacement (Chinn 2014). Since many buildings would likely require major rehabilitation and potentially demolition to allow for conversion into condos or tenancies in common, a conversion project would be a much more difficult and costly undertaking in Chinatown compared to other San Francisco neighborhoods that have been systematically impacted by such types of redevelopment. In some senses, then, Chinatown has avoided gentrification because other areas were—and continue to be—more susceptible to gentrification, or lucrative for speculators seeking to flip residential properties (Chinn 2014).

Community Resistance to Displacement

A profound sense of community identity persists among Asian-American residents as well as a broader set of Asian-American individuals who live outside the area yet remain deeply connected to Chinatown's culture, institutions, and spaces. The driving force behind this sense of cohesion is a high rate of civic engagement, which has continued to shape Greater Chinatown's built environment since the 1986 rezoning victory (Fujioka 2014). The presence of many non-profit organizations also helps with this community-building (Eng 2015).

Even before these successes, a cohesive Chinese-American community had begun forming in the 1960s, occurring in the context of the "fight against 'urban renewal'" and through several major fights, including over the International Hotel, a playground, and the Mei Yuen Affordable Housing Project (Chin 2015).

With affordable housing as an unceasing concern in Greater Chinatown as well as all of the Bay Area, the Chinatown Community Development Center (CCDC) and other community-based organizations have formed resilient organizing networks with citywide reach. They have also brought their resident base into the broader movement around the right to the city. Recent campaigns have taken on the uptick in owner-move-in evictions that singled out elderly residents as well as Ellis Act evictions. Informed by a commitment to community-based neighborhood planning from the ground up, CCDC, together with tenant groups such as the 1,000-member Community Tenants Association, have won new eviction protections for seniors and residents with disabilities.

In preserving community spaces and connections throughout Chinatown, strong political engagement has also preserved tight social networks among Chinese-American residents. These social connections have also played a key role in the neighborhood's ability to resist gentrification.

Conclusion

Despite its success, Chinatown faces ongoing challenges, including the opening of a new subway station there in 2019 (which could spur new gentrification) and eviction pressures in SRO-buildings and elsewhere as young professionals move in (Har 2015; Dineen 2015). While part of the broader picture of San Francisco's affordability crisis, the unduplicated factors that shape Chinatown's built form require a locally-tailored approach to preserving the neighborhood's

livability and vibrancy. As with the 1986 Rezoning Plan, the neighborhood's effectively mobilized resident base allows for potential solutions to new problems to be indigenous to the community. Continued organizing efforts by community groups like CCDC will be critical as both the population and the neighborhood's infrastructure continue to evolve.

East Palo Alto, San Mateo County

East Palo Alto is located on the San Francisco Peninsula in the heart of Silicon Valley. It is a small city with a population of about 29,000, bordered by the affluent cities of Palo Alto and Menlo Park. A young city, it was incorporated in 1983 in the face of claims from critics that the city could not generate enough revenue to sustain itself. Peninsula Interfaith Action, an advocacy group, notes that incorporation was intended to ensure that, as a community of color, the city would be led by people of color (SFO/PIA 2014). Incorporation prevailed despite numerous lawsuits from special interest groups seeking to frustrate the process, and East Palo Altans have great pride in their rich history of community activism and their struggle to achieve self-determination. Strong protections for renters and support for affordable housing are crucial aspects of the city's identity. As one interviewee active in the incorporation movement put it, "part of our political history is that we became a city and the first ordinance was to freeze the rents, [because] in the county there was nothing in place [to protect renters]" (interview with authors).

The city has long served as a pocket of affordability for low-income households who might otherwise be excluded from the affluent region. In recent years, two census tracts that comprise the bulk of the city (6119 and 6120[18]) have experienced less gentrification than would be expected (Figure 5.14).

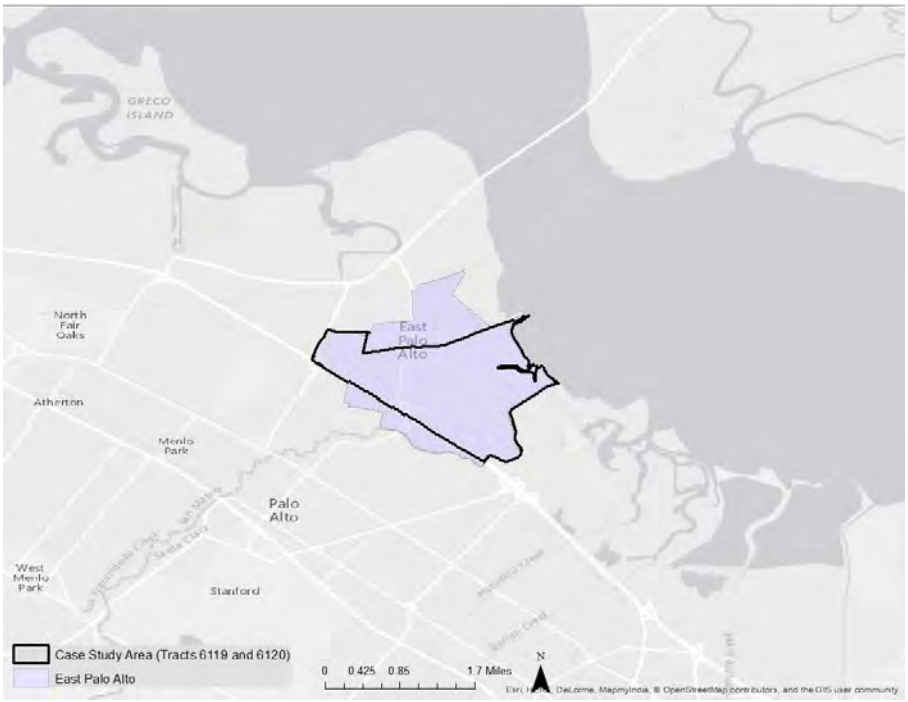


Figure 5.14: East Palo Alto and Case Study Area

[18] In this case study, we refer to these tracts as "the case study area."

With a focus on these two tracts, this case study outlines the anti-displacement policies in East Palo Alto that have helped limit gentrification there. The city has consistently enacted policies in favor of affordable housing. Tenant protections, inclusionary zoning, and housing subsidies help explain the lack of displacement in East Palo Alto. However, other factors, like a lack of good schools and access to amenities, a lingering perception of the city as unsafe, and overcrowding have also probably played a significant role in limiting gentrification.

Before discussing these policies and other factors in more detail, we outline the demographic and housing characteristics of East Palo Alto, which show how little gentrification has occurred.

Demographic and Housing Characteristics

The case study area's population grew by 22% (from 14,379 residents to 17,492 residents) between 1990 and 2013[19]. The area's population growth may be attributed to its access to job opportunities as well as the limited affordable housing opportunities in San Mateo County. Many residents who have moved to East Palo Alto within the past five to 15 years have done so because they get a job nearby, often with Stanford University in neighboring Palo Alto, which employs a large number of janitors and food service workers (SFO/PIA 2014). Residents have also arrived in the city after being displaced from neighboring jurisdictions, or because the relatively low cost of homes provided a home purchase opportunity for families (SFO/PIA 2014).

In this way, East Palo Alto has not only avoided the displacement of its existing residents, but has welcomed additional low-income households[20]: their number increased from 2,102 to 2,298 from 1990 to 2013, when 58% of households were low-income. The vast majority of households in the case study area are families: 79% in 2013.

The population growth is largely due to an influx of 5,000 Latino residents between 1990 and 2013, who ultimately made up 61% of the population. Concurrently, the city lost much of its historic African-American community; their population decreased by 3,773 people—from 43% of the population to 14%—between 1990 and 2013. The racial demographics of the case study area are notably different from San Mateo County, which has a majority white and Asian/Pacific Islander population, with 40% of residents foreign-born as of 2013.

According to the California Employment Development Department, the annual income needed in San Mateo County to rent a two-bedroom fair-market apartment is $71,800, a significantly higher figure than the case study area's estimated $59,341 median income in 2013[21] (Hepler 2014a). One stakeholder believed that there may be some under-reporting of income in this community given how many people work in the cash economy in fields such as construction (interview with authors). The total number of housing units in the case study area has grown between 1990 and 2013: from 3,819 to 4,247; the vacancy rate (vacant units divided by total units) also increased from 4% to 7%. The case study area is primarily single-family detached homes; these make up 74% of housing units; 51% of occupied housing units are rented. The housing stock is in fair condition: a

[19] Unless otherwise noted, data in this case study comes from the 1980, 1990, 2000, and 2010 Census, accessed via the Geolytics Database, and from the 2009-2013 American Community Survey.

[20] Low-income defined as 80% or lower than the surrounding county's median income.

[21] $59,341 is the average of each tract's median incomes, which were $63,105 in Tract 119 and $55,577 in Tract 120. All figures in this sentence in 2013 dollars. Note that the median income has stayed about the same since 1990, when it was $54,586 (in 2013 dollars).

stakeholder described the community as having about 40% of homes well-maintained by homeowners, another 40% experiencing neither deferred maintenance nor much "sprucing up," and the rest in poor shape (interview with authors).

Median rent has doubled from 1990 to 2013: from $882 to $1,654 (in 2013 dollars.) These rents are still lower than in San Mateo County; East Palo Alto in fact offers some of the most affordable rents anywhere in the county.

While housing costs are lower than in San Mateo County and nearby cities, households face significant housing cost burdens: 73% of renter households pay more than 30% of their income towards rent.

One method East Palo Altans use to cope with high housing costs burdens is by living with family members or renting out rooms in their homes, as indicated by the high percentage of overcrowded units: 34% of rented units were overcrowded in 2013.[22]

While presenting a risk for gentrification in the future, the city has remarkably held on to its low-income population. How did this happen? We turn to this question in the next sections.

Anti-Displacement Policies in East Palo Alto

The following policies are in place in East Palo Alto (11 of the 14 inventoried):

- Just-Cause Eviction Ordinance
- Rent Control
    - East Palo Alto is one of just a handful of cities in the Bay Area to have such an ordinance, and is the smallest by population of those cities. However, the Costa Hawkins state legislation explicitly excluded single-family homes from being covered under rent control policies; since 75% of the housing stock in the case study area is single-family homes, rent control likely was not the main reason for the neighborhood's stability.
- Rent Review/Mediation Boards
- Preservation of Mobile Homes (Rent Stabilization Ordinance)
- Condominium Conversion regulations
    - These policies are very strict; one stakeholder believed there had been no applications in at least 9 years.
- Foreclosure Assistance
    - This is provided by a community development corporation in East Palo Alto and funded by the city, according to a stakeholder.
- Housing Development Impact Fee (or Jobs-Housing Linkage Fee)
    - The fee is quite substantial: $21 per square foot, according to a stakeholder.
- Inclusionary Zoning/Housing
    - In East Palo Alto, the law applies only to ownership housing. While nothing has been entitled since 2013, prior to that time 80 below-market-rate homes were built through this policy, according to a stakeholder.
- Local Density Bonus Ordinance (above state requirements)
    - The ordinance was passed in 2008; since then, there has been "minimal" entitlement activity, according to a stakeholder.

[22] Overcrowding is defined as having more than one person per room.

- Community Land Trusts
- First Source Hiring Ordinances

Which of these policies might be contributing to the lack of gentrification in the case study area?

Subsidies and Inclusionary Zoning

The city enacted a Below Market Rate Inclusionary Housing Program in 2002, requiring that at least 20% of residential units in all new buildings be made available to households making between 30% and 80% of the area median income. This program was undermined by legal challenges to inclusionary housing at the state level, but the City Council has now unanimously endorsed a housing impact fee for new market-rate developments in order to fund low-income housing (Dremann, 2014).

Subsidies and inclusionary zoning together produced seven affordable housing developments in this part of East Palo Alto between 1990 and 2013, according to a stakeholder. The addition of these units likely helped preserve the low-income population in the area.

Just-Cause Evictions

Several stakeholders cited renter protections, such as the just-cause evictions policy—which applies to single-family homes (unlike other rent control provisions), which comprise the bulk of housing units in the case study area—as a reason for the case study area's stability. A legal services provider commented that, while in other areas outside the city there have been many cases of a landlord issuing a 60-day notice of eviction on a tenant who has paid rent on time and followed other guidelines, in East Palo Alto, this would not be allowed due to the just-cause evictions policy. In this way, the city has established a first defense against displacement.

Other Reasons for Stability of Low-Income Population

Besides these anti-displacement policies helping the community to avoid gentrification, several other aspects of the neighborhood seem likely to have played a role in limiting the gentrification, including low-quality schools and amenities, an (out-of-date) image of the city as unsafe and full of crime, and overcrowding.

Schools and Amenities

East Palo Alto residents attend school in the Ravenswood City School District, which also includes portions of Menlo Park and Palo Alto. The district has been "notorious for essentially not being able to figure out how to improve" their low scores, even after trying many things, according to a stakeholder, who believes that the poor quality of the school district may be dissuading higher-income people from moving into the neighborhood (interview with authors).

Furthermore, this part of the city lacks many amenities, including transit, and access to social institutions on the west side of the city is made difficult by the difficult-to-cross Highway 101 and University Avenue that run through the city. This kind of "in-between" place along hard urban edges often retains social diversity longer than more homogeneous neighborhoods (Talen 2006). Much of this part of the city has also lacked sidewalks, though that started changing in the late 1990s, according to a stakeholder (interview with authors).

Image as Unsafe

In the late 1980s and early 1990s, there was an "epidemic" of drugs and violence, making East Palo Alto infamous as a crime capital, a place where "you could drive into and have a cornucopia of drugs laid at your feet," according to one stakeholder. While task forces and local social institutions helped to address these issues by the late 1990s, the reputation has stuck, so much so that an outside consultant told the city, as recently as 2011, that the perception of East Palo Alto as unsafe was scaring developers off.

Overcrowding

As discussed above, 34% of housing units are overcrowded in the case study area. In the face of significantly rising rents in East Palo Alto, such doubling or tripling up of families can help low-income families stay in their neighborhood. This is particularly true for single-family homes—the bulk of the housing stock here—where families can squeeze into a shed in the back, a garage, or more; this is easier to get away with than overcrowding in an apartment. A stakeholder recalled seeing "tell-tale signs" of overcrowding: a window in a garage, tape around a garage door, etc. This phenomenon helps explain some of the stability in the low-income population here: low-income families can hold on to their housing even with rising rents.

Conclusion

East Palo Alto is distinctive for its government's commitment to ensuring the city remains affordable to low-income households, and for a strong legacy of community organizing that holds the City government accountable to that commitment. The city is home to many low-income households already burdened by their housing costs, and vulnerability is compounded for undocumented immigrants. Because so little affordable housing is available in surrounding cities, the stakes are high for households that leave. Numerous interviewees highlighted that households that cannot afford East Palo Alto may be forced to leave the region altogether, and are relocating as far away as Tracy, Manteca, and the Central Valley. This is why the city's suite of anti-displacement policies is particularly important.

Diridon Station Area, San Jose

Within the Bay Area, San Jose stands out for long providing affordable homes for a wide range of incomes, and an ethnically diverse population including many immigrants. By annexing more and more land throughout the 20th- Century, San Jose's sprawling housing development has "carried the burden of housing for decades" in Silicon Valley, in the words of former Mayor Chuck Reed (Hepler 2014b). It is now the biggest city in the Bay Area, and city leaders have their sights set on jobs, with a "jobs first" general plan meant to correct its jobs-housing imbalance.

One major site of attention is Diridon Station, a transit hub on the western edge of downtown San Jose, with stops for Caltrain, Amtrak, VTA light rail, Altamont Commuter Express (ACE), and multiple bus lines. The station is also a planned stop for BART's extension to San Jose, and for high-speed rail. While there is significant vacant and non-residential land surrounding Diridon, there are also surrounding neighborhoods that are home to low- and middle-income residents where

displacement spurred by rising housing costs is a major concern. Despite San Jose's strong track record of building housing, including deed-restricted affordable housing, housing costs in San Jose are now at an all-time high, while wages for low-income workers are stagnant.

However, one of the census tracts in the area (5019), while vulnerable for gentrification in 2000, had not experienced the gentrification expected as of 2013. This area is the focus of this case study (Figure 5.15). Housing production—market-rate and affordable—as well as rent stabilization are probably responsible for the lack of gentrification here.

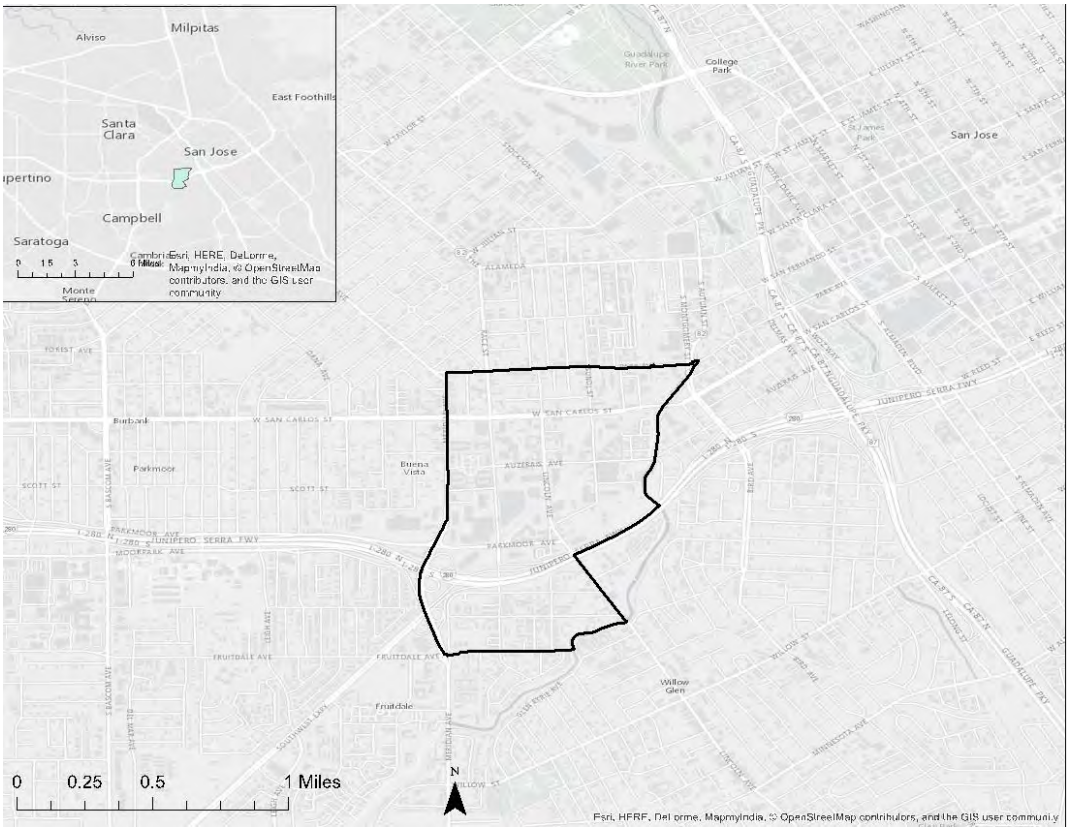


Figure 5.15: San Jose Diridon Station Case Study Area Map (Census Tract 5019)

Neighborhood Overview

The area surrounding Diridon Station is home to a wide range of neighborhoods and land uses, including industrial and commercial areas, residential neighborhoods dominated by single-family homes, new luxury condominium development, and lower-income renter communities. While Diridon Station itself is considered to be in downtown San Jose, Highway 87 creates a barrier between the station area and the denser parts of downtown; though one can walk or drive directly from the station to downtown, the highway limits high-density development in this area. This may be a stabilizing factor for the neighborhood (Talen 2006) .

The case study area, called West San Carlos, hosts a commercial corridor surrounded by older residential neighborhoods which have experienced varying levels of change. It has been slated as an "Urban Village" in the San Jose General Plan. A planner described this commercial corridor as "full service, with a gritty character… it is the most practical street in the whole city! … [P]eople think of it as pretty funky, and we got push back from the community – we want to keep the funk."

Demographic and Housing Changes

Several features of the case study area (Census Tract 5019) indicate it has experienced some change consistent with gentrification—population growth, much construction, fewer families, increased educational attainment and incomes, declining renter population, and increased rent—and some inconsistent with gentrification and displacement—increasing people of color, and, most significant, an increase in the number of low-income households.

The case study area showed a steady increase in population throughout the decades: from 2,220 in 1990 to 3,300 in 2000 to 5,745 in 2013. Enabling this population growth has been a significant spurt of construction, particularly in for-sale housing. Between 2000 and 2013, 1,087 new units of market-rate housing were built.[23] Of these, 589 were for-sale units, which comprise 76% of the owner-occupied housing stock in the area.

These new residents have been more likely not to be families, to be highly educated, and to earn higher salaries:

- Since 1980, the area has had a significantly lower percentage of family households than San Jose as a whole. Just under half of the households in the area were families in 2013. By way of comparison, three-quarters of San José's 300,000 households were family households in 2013.
- The case study area has seen major changes in educational attainment in the past 30 years. The percentage of residents with college degrees increased from 22% to 44% between 2000 and 2013.
- Accompanying this shift was an increase in median incomes: from $47,891 to $82,192, both in 2013 dollars, from 1990 to 2013.

The study area has been dominated by renter households since 1990, when 81% of occupied housing units were rented; in 2000, the figure was roughly the same, 85%. But by 2013, the figure had dropped to 67%, indicating an increase in owner-occupied housing units as new condominium units were built. However, the share of renter occupied units is still higher than in San Jose as a whole, where 42% of occupied housing units are rented.

Rents have been climbing in the study area (from $1,073 in 1990 to $1,404 in 2013, in 2013 dollars), although historically they have been lower than in the city as a whole. Yet advocates have expressed concern that it is really within the last several years that housing costs have skyrocketed, and the recently released draft Housing Element confirms that rents in the city at large are at an all-time high with the average rent now at $2,169. This average underestimates the cost of newly constructed rental housing which can range between $2,200-$2,700 per month for a one-bedroom unit and between $3,000-$3,500 for a two-bedroom unit in North San Jose (City of San Jose 2014).

However, even in the face of all these signs of gentrification, the area has expanded its low-income population: the number of low-income households[24] has increased from 681 in 1990 to 1,092 in 2013. This change is concurrent with the loss of all the area's naturally affordable rental housing stock, from 184 units to none between 1990 to 2013. To stay in this area, some families are squeezing more people into their units to afford rent (17% of rented units were overcrowded in 2013); low-income households are paying a higher portion of their income to afford rent (49% pay

[23] Source: US Census 2000, American Community Survey 2009-2013, CHPC Dataset, 2014.
[24] Low-income defined as at or below 80% of the county's median income.

more than 30% of their income, in 2013); and others live in some of the many new subsidized affordable housnig units constructed here (discussed below).

In terms of race/ethnicity, all racial groups have increased their numbers from 2000 to 2013, with Asian-Americans increasing the most dramatically (by 837 people—nearly 300%), African-Americans by 185%, while whites and Hispanic/Latinos increased at a lesser rate (whites by 36% and Hispanics by 21%) (Figure 5.16). Between 1990 and 2013, the percentage of residents who were not white increased from 46% to 72%.

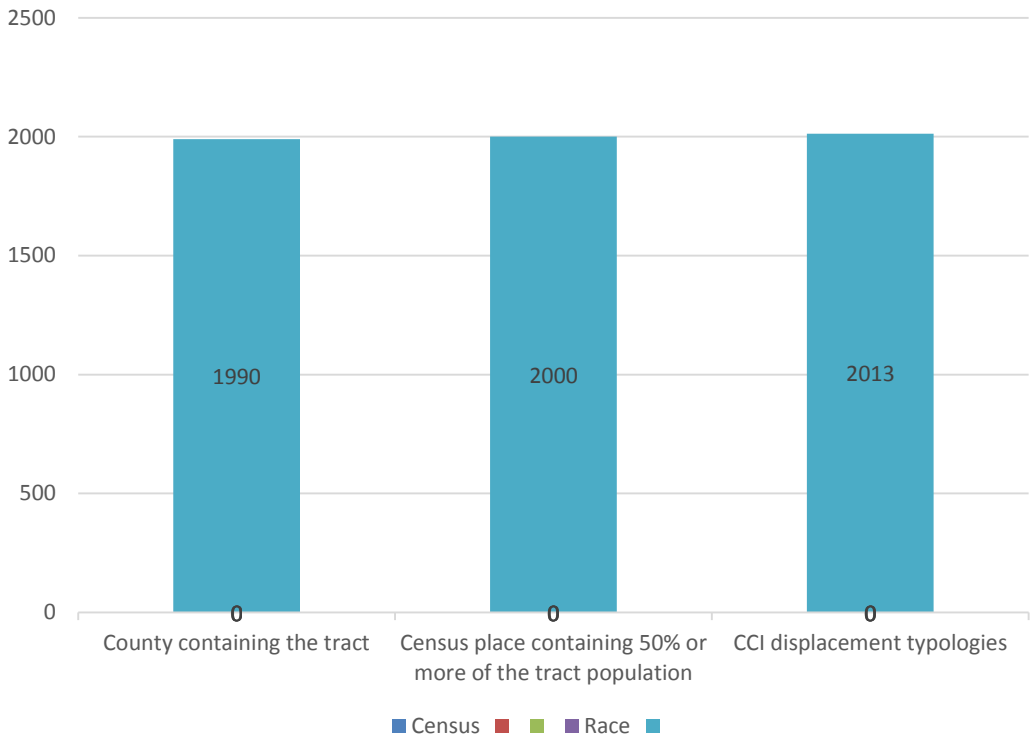


Figure 5.16: Race/Ethnicity and Population Change, 1990-2013
Source: U.S. Census 1980, 1990, 2000 (Geolytics 2014); American Community Survey 2009-2013

Anti-Displacement Policy

The city of San Jose has the following anti-displacement policies in place (of the 14 from our inventory):

- Rent Review Board
- Rent Stabilization
- Mobile Home Rent Control
- Housing Impact fee
- Inclusionary Zoning
- Foreclosure Assistance
- Housing Trust Fund

What is responsible for the area's lack of displacement? We consider three possible contributing factors: market-rate housing production, affordable housing production, and rent control.

Housing Production

Besides these policies, a key to this area's success at not displacing low-income households seems to be its high levels of housing production. New, higher-income households could be living in these units, which may have taken pressure off the existing housing stock, allowing low-income households to stay there, albeit at higher rents, as discussed above.

Affordable Housing Production

Besides this increase in market rate supply, the case study area also gained 322 subsidized housing units between 1990 and 2000, including the following developments:

- Parkview Senior Apartments – 1998 – 138 units
- Parkview Family Apartments – 1997 – 88 units
- La Fenetre Apartments – 1995 – 50 units
- Willow Apartments – 1999 – 46 units

Overall, about 10% of housing units are subsidized.

Several city policies enable this production of affordable housing. The housing impact fee is too new to have funded these units, but the city's use of Federal funds (HOME, CDBG, and others) and its Housing Trust Fund have been available as sources for affordable development.

Rent Stabilization

A fair number of units (496) in this area fall under San Jose's rent stabilization ordinance (Figure 5.17). The protection of these units from dramatic rent increases likely helped low-income people continue to afford living in the area.

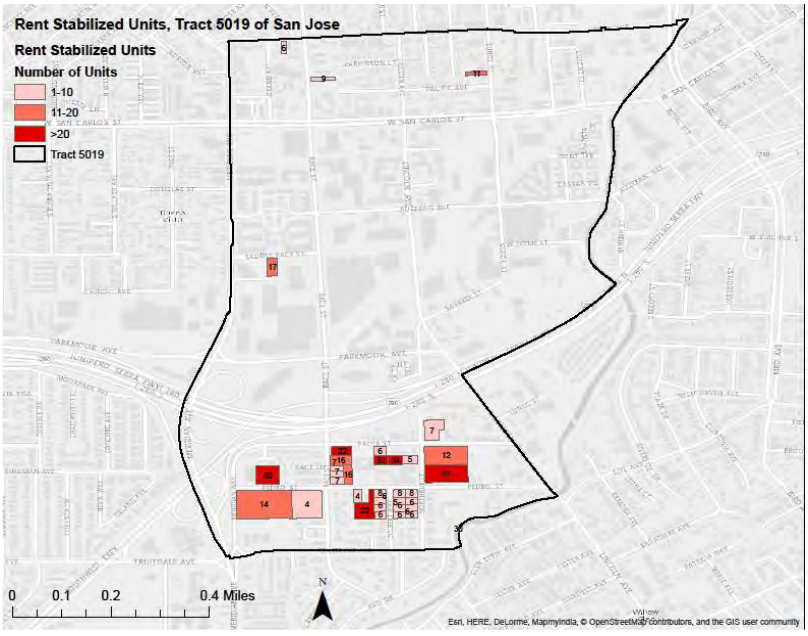


Figure 5.17: Rent Stabilized Units in Tract 5019, San Jose

Source: San Jose's Roster of Rent Controlled Units Through 1979, obtained through personal correspondence.

Conclusion

While housing production and rent stabilization seems to have helped this neighborhood retain its low-income population, one local expert thought it was reaching its "tipping point" when displacement would really kick in. The neighborhood is facing "encroachment" from all sides, with already-gentrified neighborhoods all around it. The expert thinks that the gritty and uneven character of West San Carlos has perhaps kept the neighborhood from gentrifying as dramatically as these surrounding places, but that in time it would, too. The development of more affordable housing (using the city's funds from its linkage fees and affordable housing trust fund) could help retain the area's low-income population in the face of such changes.

Chinatown, Los Angeles

Chinatown is a mixed-use, ethnic neighborhood at risk of gentrification with few formal transit-specific planning efforts to mitigate the changes taking place (See Task 2H). The area is considered an Asian-American enclave due to its high concentration of Asian-American residents (Mai, Randy & Chen, Bonnie, 2013); however, it also has considerable numbers of Latino residents (See Table 5.11). The neighborhood is disproportionately composed of renters, and is facing a housing affordability problem as the quality and type of its housing stock has changed while incomes have remained stagnant.

History of Chinatown

Anti-immigration sentiment and racial backlash often forced immigrants to settle in ethnic enclaves. In the 1800s, Chinese immigrants in Los Angeles were barred from citizenship and owning of property. As a result, many became tenants of major landowners around the El Pueblo Plaza area in Downtown Los Angeles. By the 1870s, a notable Los Angeles Chinatown was formed (Cheng and Knok, n.d.). In 1931, however, the construction of Union Station led to the displacement of this Chinese community and their relocation to Los Angeles's historical Little Italy neighborhood, an area north of the Plaza.

In 1938, Peter Soohoo, a Los Angeles-born Chinese-American proposed the building of New Chinatown as a tourist attraction (Cheng and Knok n.d.). What began as an 18-unit commercial project soon expanded to more than 60 commercial and apartment units. The most famous remnant of these efforts is the East Gate.

By 1960, however, Chinatown had limited resources with few jobs, low wages, and high rents. Many residents worked as laborers in the local garment factories. According to the 1960 census, one-third of all housing in Chinatown was below required standards (W. Li 2009). By this time, those with higher incomes began to migrate to the San Gabriel Valley.

The 1965 immigration law and the end of the Vietnam War brought an influx of Southeast Asian refugees to Los Angeles Chinatown; they were poor, low-educated, and predominantly ethnic Chinese from Vietnam, Laos, and Cambodia (W. Li 2009). This new influx changed the demographics of Chinatown, which can be seen in the multilingual signs that exist today.

Today, Chinatown is typically defined as the area bound by the 110 Pasadena Freeway on the West, Cesar Chavez to the South, Alameda Street to the East, and Cottage Home Street to the North

("Mapping LA: Chinatown" 2013). This case study focuses on the census tracts that lie partially or completely within a half- mile radius of the Chinatown Metro rail station (See Figure 5.18).
Small businesses and local merchant shops in Los Angeles Chinatown continue to survive not only as shopping centers for residents but also as tourist shops for many visitors. Chinatown's proximity to downtown Los Angeles also attracts many young professionals to the area. These businesses, however, have declined from their heyday due to competition from other Chinese establishments in the San Gabriel Valley.

Figure 5.18: Chinatown, LA Study Area by Census Tract (2010 Boundaries)

Chinatown's Demographics

The population in Chinatown has increased steadily since the 1960s (see Table 5.12). Today, the area is home to more than 23,000. Over the past three decades, the area has not only become more diverse but has also changed (Mai, Randy and Chen, Bonnie 2013). Chinatown is considered an Asian-American enclave due to its high concentration of Asians relative to Los Angeles County (Mai, Randy and Chen, Bonnie 2013). However, it was not until the 1990s that Asians became the majority in the neighborhood (54%). Since then, however, their share has declined to about 42% of residents. There is also a considerable Latino population in Chinatown, which has consistently

accounted for about one-third of residents for the past three decades. Over the years the share of Black residents has fluctuated and has been on a steady decline while that of Non-Hispanic whites has increased slightly. The share of immigrant residents has also been on a decline.

Table 5.12: Chinatown, LA Demographics

	1970	1980	1990	2000	2010	2009-2013
Total Population	17,715	20,509	18,166	26,144	23,954	23,120
Race/Ethnicity						
Asian	26%	38%	54%	40%	43%	42%
Black	18%	13%	7%	17%	14%	12%
NHW		10%	6%	10%	11%	13%
Hispanic		36%	32%	33%	31%	31%
Elderly (60 and older)	10%	10%	14%	13%	16%	16%
Foreign Born	34%	56%	63%	48%	48%	47%
Poverty Rate	24%	39%	31%	32%	41%	41%
Total Housing Units	4,113	4,365	5,136	5,389	6,718	6,724
Vacancy Rate	4.1%	2.3%	5.2%	4.4%	6.7%	11.6%
% Renters	83%	86%	88%	88%	91%	91%
Multi-Unit Housing	64%	74%	80%	79%	85%	85%
Mean HH Income (2013$)		36,608	43,973	40,213		38,267
Mean Rent Range (2013$)		606	851	713		1,017

Source: US2010 Project available at http://www.s4.brown.edu/us2010/Researcher/Bridging.htm; and 2009-2013 ACS tabulated by authors; data are for 2010 census tracts completely or partially within 1/2mi of the rail station.

Chinatown has a high prevalence of new construction on residential parcels (See Task 2H), and the development of multi-unit housing in the area has also been on the rise, increasing from 65% of the housing stock in 1970 to 85% by 2010. Median rents have almost doubled, from about $600 in 1980 to more than $1,000 by 2013. These trends signal a shift in the housing stock and affordability of the area as the quality and type of stock changes. Further, while Los Angeles has always been a majority renter metro area, with a percent of renters fluctuating between 51-52% since 1970 (Ray, Ong, & Jimenez 2014), residents in Chinatown are disproportionately renters, with the share of renters increasing from 81% in 1970 to over 90% by 2010.

Chinatown residents are facing a housing affordability problem. In 2013, more than half of Chinatown renters (55%) were burdened by housing costs. The area is also becoming increasingly poor, with the mean household income declining since 2000, a likely result of the recession. In 2013, about four out of 10 residents lived in poverty, double the ratio of 1970. This may be related to demographic shifts. For instance, the number of elderly residents in the area has more than doubled since the 1970s, and today they account for about 16% of the population.
Further, there is an income disparity. The average household income in Chinatown is less than half of the average household income in Los Angeles County (about $38,300 compared to $81,400, respectively in 2013). Understanding the housing needs of the poor and elderly is critical as the housing affordability and stock of the area changes. Chinatown has had affordable senior housing since the 1980s, but many of the affordable units have expired or are set to expire, and some affordable senior units are converting into market rate units (Chinatown Community for Equitable Development, personal communication, April 15, 2015).

Anti-Displacement Policies

Chinatown is within the boundaries of Los Angeles, and therefore the nine anti-displacement policies adopted in the city apply to Chinatown. These include condo conversion regulations, policies to encourage the preservation of mobile homes, affordable housing trust funds, local density bonuses, SRO preservation, rent stabilization and control, community land trusts, and a first source hiring ordinance. There are three plans that will impact development in Chinatown: the Central City North Community Plan, the CASP, and the Union Station Master Plan. The Central City North Community Plan is currently undergoing revisions and the Union Station Master Plan is currently being worked on (SEACA, personal communication, November 16, 2015). There is limited information publicly available on the future contents of these plans; therefore, this section will focus on the CASP.

The CASP was adopted in 2013, and is one of the city's newest community plans. It is also the first community plan to include regulatory controls to guide development near transit stations. The CASP is designed to serve as a blue print for all future TODs in the City of Los Angeles (SEACA, personal communication, November 16, 2015).There are three Gold Line rail stations located in the plan area: Chinatown, Heritage Square, and Lincoln/Cypress stations. The plan proposes lower-density development but encourages developers to take advantage of the California Affordable Housing Density Bonus program. The plan's development standards encourage a variety of housing types. Additional value is also added to property through land use/zoning changes, i.e. up-zoning, which can be leveraged to provide benefits for the community, including the provision of affordable housing, open space, and other community benefits. The CASP also created a unique Super Density bonus program from the city's and the state's. The city's allows up to a 35% density bonus in exchange for affordable housing; the CASP provides up to a 100% density bonus and provides incentives for extremely low-income housing. This is the first plan in the city to do so. (SEACA, personal communication, November 16, 2015).

The zoning section of the plan encourages affordable and mixed-income housing. There are also several benefits a developer could gain by providing affordable housing units. One incentive is the Floor Area Bonus: project applicants may obtain additional floor area rights by complying with the Affordable Housing Bonus Option and/or the Community Benefit Bonus Options.

The plan also outlines several "off-menu" incentives such as additional floor area. One of the requirements for qualifying for these additional bonuses mentions the need to show that the extra square footage is required to provide affordable units. In order to receive the variety of bonus options, the plan also states that developers shall sign and record a covenant that would guarantee affordability. Restricted Affordable Units are exempt from Unbundled Parking requirements.

Community Involvement, Response and Resistance to Displacement

Strong relationships between CBOs and public agencies in TOD areas are necessary to develop plans and policies to encourage development that provides equitable community benefits. In the Chinatown area, this discussion was mostly happening through the CASP.

The CASP was prompted by the development of three infrastructure improvements in the area: the development of a regional public park, the Los Angeles River Master Plan, and the extension of the Gold Line. These broader development efforts prompted public agencies to seek community engagement, including public meetings. While the plan does not mention displacement or gentrification explicitly, there is a strong emphasis on incorporating affordable housing in new

development through density bonuses. This emphasis is the result of organizing efforts by advocacy organization such as SEACA, who pushed for acknowledgement of gentrification and displacement in the writing of the plan (SEACA, personal communication November 16, 2015).

Further, while a community coalition was successful in pushing for strong environmental and economic justice goals in the revision of the CASP (Henao 2013), currently there is no active formal process for CBOs and public agencies to interact. Further, there are no active engagement efforts as part of the CASP.

CBOs have expressed concerns about residential and commercial gentrification. One concern is that a number of new neighborhood businesses are not catering to the needs of long-term Chinatown residents, such as providing culturally appropriate retail that meets the needs of the elderly, affordable food and retail, and in some cases, jobs (Mai, Randy & Chen, Bonnie, 2013). Representatives from CBOs indicated that new development and incoming retailers like Starbucks and Walmart are instead catering to new residents or more affluent commuters (SEACA, personal communication February 4, 2015). Flipping of commercial properties was also reported (Chinatown Community for Equitable Development, personal communication April 15, 2015). Between 2007-2014, at least 14 Ellis Act evictions have occurred in the census tracts within a half-mile of the transit station. One CBO representative reported that tenants are often offered “buyouts "and move out of their units (Chinatown Community for Equitable Development, personal communication April 15, 2015).

Currently, the major CBOs in Chinatown provide social and health services, and affordable housing, along with advocating for tenant rights and a higher minimum wage. Strategies include a mix of professional programs and efforts at capacity building for residents and other stakeholders. An organization playing an active role in the development of Chinatown is The Chinatown Service Center, which has created the Community Planning and Housing Division aimed at sustaining affordable housing and services for residents. They have completed two affordable housing projects: Casanova Gardens in 1999 and Cesar Chavez Gardens in 2003 (“Affordable Housing Services” n.d.). Additionally, the Chinese Chamber of Commerce and the Chinatown Business Improvement District have played significant roles in fostering business development in Chinatown to revitalize the area as a shopping, dining, and visitor destination (“The Organization” n.d.). However, there seems to be limited involvement in developing broader policy efforts to address displacement.

Hollywood/Western, Los Angeles

The Hollywood/Western Red Line station is a below-grade, subterranean stop located in East Hollywood in one of the most densely populated areas of Los Angeles. The neighborhood is notable as the home of ethnic enclaves, including Little Armenia and Thai Town. Most residents in the area are non-Hispanic white (many of Russian and Armenian descent), Latino, and immigrant. The neighborhood is a mixed-use, regional destination at risk of gentrification (See Task 2H). Certain formal planning efforts specifically focusing on the transit-oriented nature of new developments seek to mediate the risk of gentrification in the area.

History of Hollywood/Western

The Hollywood/Western Metro rail station is located near the intersection of Hollywood and Western Blvd. in East Hollywood (See Figure 5.19). East Hollywood was annexed to the City of Los

Angeles in 1910. Around this time, it was still a predominantly farming village and mostly populated by non-Hispanic whites (East Hollywood Neighborhood Council 2015). After its annexation, East Hollywood increasingly served the growing movie industry – which is still present in the area today.

During the 1920s, many immigrants around the world came to East Hollywood, including Russians escaping the Bolshevik Revolution and Armenians escaping the Armenian genocide. It was during the 1950s when most of the area's apartment buildings were built (East Hollywood Neighborhood Council 2015). The building of the Hollywood Freeway a few years earlier, however, had led to the destruction of many houses and relocation of residents.

Beginning in the 1960s, many immigrant communities from around the world settled in East Hollywood: from East Asia, Southeast Asia, Latin America, the former Soviet Union, and the Middle East. Each community continues to leave its mark on this neighborhood, including its ethnic businesses.

In 1992, East Hollywood was affected in the Los Angeles Riots as many of its businesses were looted. Additionally, the area sustained significant damage in the 1994 Northridge earthquake. However, the late 1990s saw a period of economic boom and recovery for East Hollywood, and in 1999 the Hollywood/Western station opened that linked the area to downtown Los Angeles. Part of the area's revitalization includes designations of "Thai Town" and "Little Armenia," which represents the diversity of East Hollywood today.

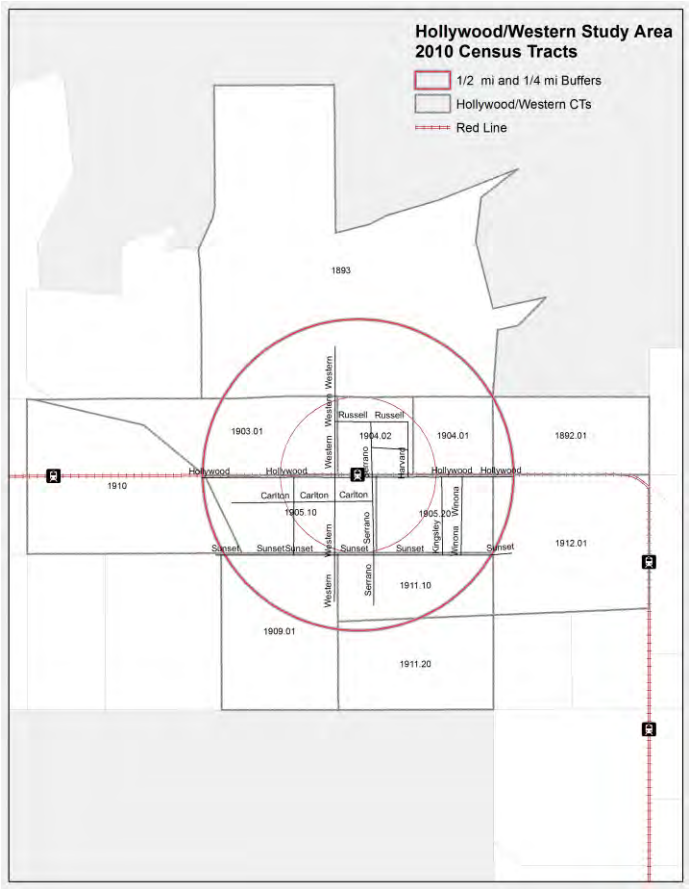


Figure 5.19: Hollywood/Western Study Area by Census Tract (2010 Boundaries)

Demographics

The population of the Hollywood/Western neighborhood has increased since the 1960s to more than 45,000 by 2013 (Table 5.13). Non-Hispanic whites make up the highest proportion of residents in the area at about 48%. While their proportion declined in the 1990s and 2000s, there has been a slight increase in the past decade. This group includes those of whites of European, American, or Middle Eastern descent (Armenians being the most prevalent in this group). Hispanics also make up a large percentage of Hollywood/Western (at 36%), although there has been a small decline since 1990 (when they represented 41% of the residents). Over the years, the share of Asian-American and black residents has remained steady at about 10% and 5%, respectively. Although the share of foreign-born residents has declined since 1990, immigrant residents still make up about half of the neighborhood's population. The number of elderly residents has been on the decline.

Table 5.13: Hollywood/Western Demographics

	1970	1980	1990	2000	2010	2009-2013
Total Population	32,963	41,488	50,128	48,839	44,739	45,455
Race/Ethnicity						
Asian	4%	9%	9%	10%	12%	10%
Black	1%	5%	4%	4%	5%	4%
NHW		58%	45%	41%	46%	48%
Hispanic		23%	41%	39%	35%	36%
Elderly (60 and older)	25%	19%	15%	14%	17%	15%
Foreign Born	30%	53%	64%	61%	53%	50%
Poverty Rate	15%	22%	27%	30%	25%	27%
Total Housing Units	18,884	19,603	20,022	19,849	21,100	21,088
Vacancy Rate	5.6%	4.5%	7.1%	3.5%	9.4%	8.3%
% Renter	86%	87%	88%	88%	90%	88%
Multi-Unit Housing	80%	82%	83%	83%	86%	84%
Mean HH Income (2013$)		48,982	56,927	55,802		55,705
Mean Rent Range (2013$)		732	923	811		1,035

Source: US2010 Project available at http://www.s4.brown.edu/us2010/Researcher/Bridging.htm; and 2009-2013 ACS tabulated by authors.

There are at least 21,000 units in the Hollywood/Western TOD area. The area continues to be densely populated with more than 80% of the stock multi-family housing. The mean rent has increased by over 40% since 1980 (from about $730 in 1980 to over $1,000 in 2013), which is not proportionally matched with the 14% increase in mean household income during the same period. The mean household income for those in this neighborhood is slightly over $55,000, about $25,000 less than the county average. This disproportionate trend becomes significant since 88% of residents in Hollywood/Western are renters. Moreover, about 59% are rent burdened, and about 37% spend half or more of their income on rent. Though less than in Chinatown, the poverty rate of residents in Hollywood/Western is still relatively high, with over one-fourth of the resident population living below the poverty line. Providing affordable housing in the Hollywood/Western neighborhood is important in maintaining the area's ethnic diverse history. Despite the existence of

some anti-displacement policies and efforts, about 9% of all residential parcels have seen some housing improvement, which suggests a possible gentrification (see Task 2H).

Anti-Displacement Policies

Because the Hollywood/Western case study area is located within the City of Los Angeles boundaries, the city's nine anti-displacement policies apply to this neighborhood.

Aside from the citywide ordinances, the Vermont Western Station Neighborhood Area Plan (SNAP) applies to the Hollywood/Western Station. The Vermont Western SNAP was adopted in 2001. It is a specific plan created to encourage TOD around the Red Line in East Hollywood, which applies to four stations: Hollywood/Western, Vermont/Beverly, Vermont/Santa Monica, and Vermont/Sunset. The SNAP permits greater heights and densities for mixed-use and residential projects, and reduces parking requirements by 15% for projects built within 1,500 feet of a station. The specific plan further reduces the cost of building TOD, mixed-use development by eliminating the requirement that developers provide additional parking when they change the use of a building.

SNAP regulations for residential areas are intended to conserve the scale of existing neighborhoods. In community centers located around Red Line stations the SNAP provides floor area incentives for commercial, hospital, and medical uses. Commercial corridors connecting the community centers are designated as mixed-use boulevards. The plan mandates equitable development through its community benefit elements. For example, the SNAP's childcare facility component requires mixed-use or commercial projects with 100,000 square feet or more of nonresidential floor area to include childcare facilities to accommodate the needs of employees.
There are three references to low-income and affordable housing within the TOD.

- Under the Purpose of the Plan, Section 2 D states that the plan intends to "Improve the quality of housing stock in the neighborhood through the construction of affordable housing units available for homeownership in Mixed Use buildings along transit corridors."
- Section 6F.2b of the plan, states that two types of affordable housing developments are exempt from the Park First Program Fees. These include:
    - Senior Citizen and Student Housing. Residential units with fewer than three habitable rooms reserved exclusively for seniors or full-time students and which both (i) qualify as low- and very-low-income housing as defined by HUD and (ii) are subsidized with public funds and/or federal or state tax credits with affordability covenants of at least 30 years are exempt from the Parks First Trust Fund fee.
    - Low- and Very-Low-Income Housing. All residential units in a project containing low- and very-low-income residential units as defined by HUD that are subsidized with public funds and/or federal or state tax credits with affordability covenants of at least 30 years are exempt from the Parks First Trust Fund fee.

The plan calls for a walkable, transit-friendly urban community, with existing residential neighborhoods preserved, future population and commercial growth channeled into mixed-use buildings along transit corridors, and unique activity centers at each of the four subway stations. Public services, especially parks, childcare, community police stations, libraries, and schools are to be expanded and placed in sites among the neighborhoods and along commercial corridors.

One significant component of the plan that should be of interest to small and local businesses is the Local Jobs Incentives that are a set of policies and code incentives or exemptions for both small and larger businesses to come into and remain in the Plan Area. Live/work spaces, and small assembly

workshops are allowed to facilitate business start-ups. Existing commercial buildings are allowed lower parking standards in order to attract a wider range of tenants.

Community Involvement, Response and Resistance to Displacement

As the station areas become more desirable to live in, existing, long-term residents are at higher risk of eviction and displacement. Community-based organizations (CBOs) worry that real estate speculation will lead to development that may force out long-term, low-income renters. Stories of displacement from rising rents have been noted by neighborhood CBOs in Hollywood. An LA Voice organizer estimated that 30% of the Hollywood church congregation the organization serves moved to the San Fernando Valley because of rising rents in Hollywood (LA Voice, personal communication April 10, 2015).

CBOs in the area have developed valued partnerships with public agencies. In 2003, the Thai Community Development Center (Thai CDC) conducted a needs assessment of area (Thai Community Development Center 2003). The study related to the Vermont/Western TOD plan and found that East Hollywood is a community with especially sizable Latino, Armenian, and Thai populations. It is a predominately low-income community with a high density of smaller-than-average businesses, and a low rate of property ownership among business owners and local residents. Thai CDC worked with the city planning department and Councilmember Jackie Goldberg to organize various community stakeholders around the SNAP.

A Thai CDC staff member discussed an evaluation of the SNAP's impact conducted by the organization. The evaluation indicated that the specific plan had achieved many of its affordable housing and neighborhood preservation goals (Thai CDC, personal communication February 17, 2015). However, the staff member mentioned that some developers have objected to SNAP's local hiring and childcare space requirements. As a result, SNAP's community benefit elements may impede neighborhood economic development, if developers cannot obtain a variance from requirements. A Council District 13 staff member echoed these sentiments (personal communication April 16, 2015). He stated that the cost of providing community benefits might discourage developers from investing in the specific plan area. The staff member believes that TOD plans should not regulate development to the extent that they stifle economic growth.

Currently, Thai CDC, East Hollywood Neighborhood Council, and LA Metro are trying to form a partnership to create a small-business incubator near the Hollywood/Western Station (personal communication March 9, 2015). However, where CBOs are not actively involved in neighborhood councils, there is potential that they can be left out of the planning process. Further, limited opportunities and resources for community engagement have been identified as challenges to successful community planning around TODs by both CBOs and public agencies. CBOs felt the common forms of public input, such as public hearings and community plan updates, are ineffective at encouraging public participation and capturing the input of all interested parties. According to organizers from LA Voice, rigid public hearing agendas have constrained their capacity to advocate in formal public forums (LA Voice, personal communication April 10, 2015).

103rd St./Watts Towers, Los Angeles

The 103rd St./Watts Tower station is an at-grade stop on Metro's Blue Line that is located near the intersection of Grandee Avenue and 103rd St.. The station is situated in the heart of the Watts Neighborhood in South Los Angeles and is immediately adjacent to the historic Watts Tower Art

Center. The area gained an African-American majority in the 1940s as a result of the Great Migration from the American South. Presently, the area has a Latino majority with African-Americans retaining a significant minority. Of the station study areas, this stop, which opened in 1990, has been in operation the longest. The 103rd St./Watts Towers neighborhood shows some signs of residential gentrification, while commercial gentrification appears to be minimal.

History of Watts Neighborhood

Watts was first settled as Rancho La Tajuata in the early 1820s by Spanish Mexican settlers, and its economy was primarily based on agriculture until the arrival of the railroad station around the turn of the 19th Century. After the establishment of the station, the settlement grew rapidly, and the City of Watts was incorporated in 1907 (Watts Neighborhood Council 2015). It was annexed by the City of Los Angeles in 1926.

As a result of the Great Migration of African-Americans from the South for better opportunities, the area gained an African-American majority in the 1940s. During World War II, the city built several public housing projects for the new industrial workers, but by the 1960s these buildings housed almost exclusively African-American residents, since whites had moved out to suburban areas (Watts Neighborhood Council 2015).

The neighborhood suffered through the Watts uprisings in 1965, during which 75 people were injured and dozens of buildings burned (Queally 2015). Tensions rose due to racial profiling, discriminatory treatment, inadequate public services, and the passage in 1964 of Proposition 14, which repealed the Rumford Fair Housing Act (Queally 2015)[25]. In the 1970s, a wave of gang-related violence arose that lasted until the early 2000s, but has since subsided (Empower LA 2015). Currently, many Latinos have settled in Watts, making up about 74% of the population, with African-Americans retaining a significant minority at 25%.

As a largely residential commuter district, the neighborhood is not proximate to the downtown central business district or other large employment areas. Unsurprisingly, the station area also has a low jobs-housing ratio (UCLA Comprehensive Project 2015). The area is a single-use zoned district, with absence of mixed-use development, and serves predominantly commuters, who travel to more job-rich employment areas (UCLA Comprehensive Project 2015). Figure 5.20 shows the study area boundaries.

[25] The Rumford Fair Housing Act of 1963 prohibited discrimination based on race, religion, color, national origin, and ancestry in private housing in California.

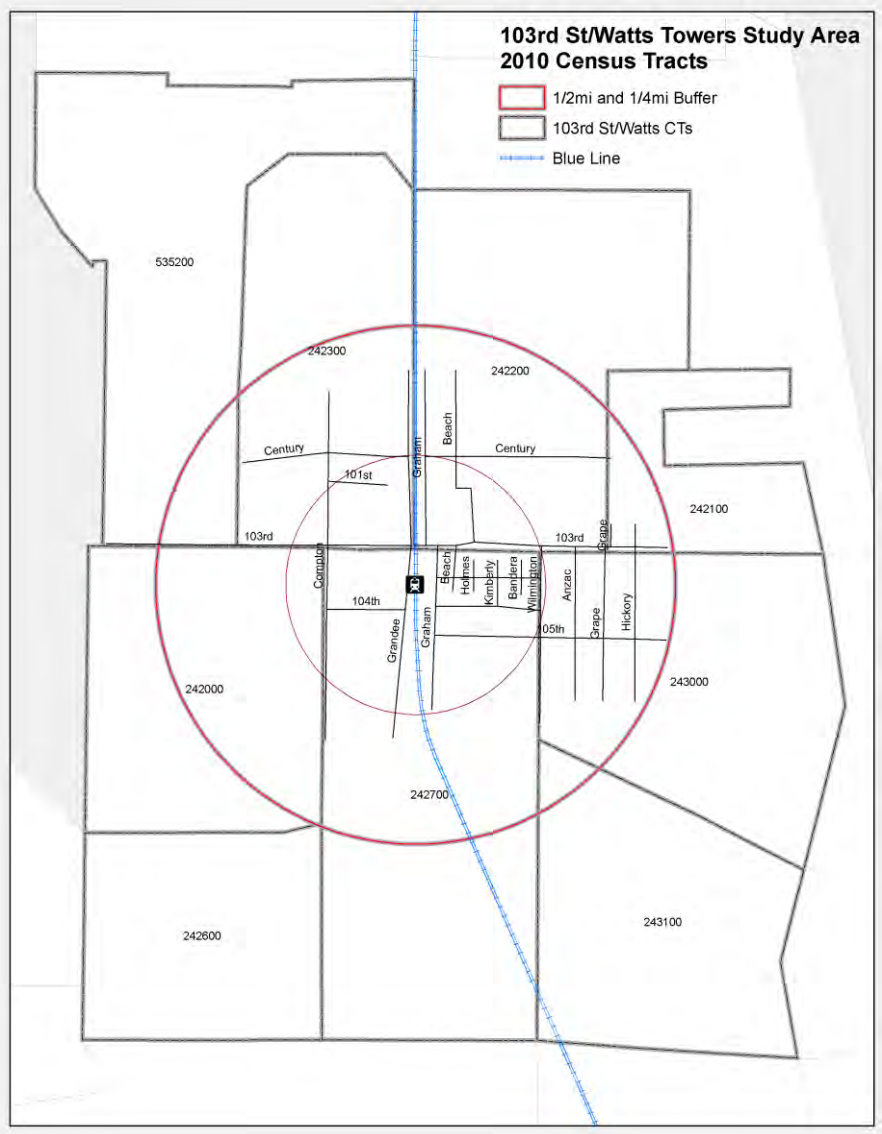


Figure 5.20: 103rd St./Watts Towers Study Area by Census Tract (2010 Boundaries)

Demographics

Of all the Los Angles case studies, the 103rd St./Watts area has seen the greatest increase in population since the 1980s (Table 5.14). In 2013, Watts was home to more than 45,000 residents, which is a 46% increase since the lowest point in 1980. Historically, the area was an African-American community; however, by 2000, Latinos had become the majority. The considerable increase in the immigrant population coincides with the influx of Latinos.

The African-American community continues to have a considerable presence. About one-quarter of residents in the case study area are black, which is almost three-times the share for Los Angeles County (24% compared to 8%, respectively in 2013). Non-Hispanic whites and Asians are underrepresented in the area, with each accounting for no more than 1% of the population.

The share of the elderly population in the station area has declined since the 1980s and is currently at about 7%. The share of the population living below the federal poverty line, which was 51% in

1980, started declining until 2010, during a period of economic prosperity for the region. However, between 2010 and 2013, there was a jump of residents below the poverty line from 37% to 40%. The average household in Watts also makes about $38,500, which is significantly below the county average.

Table 5.14: 103rd St./Watts Towers Demographics

	1970	1980	1990	2000	2010	2009-2013
Total Population	32,714	30,835	36,567	40,188	45,413	45,122
Race/Ethnicity						
Asian	0%	0%	0%	0%	0%	0%
Black	92%	85%	55%	37%	27%	24%
NHW		0%	0%	1%	1%	1%
Hispanic		14%	44%	62%	71%	74%
Elderly (60 and older)	9%	10%	8%	7%	7%	7%
Foreign Born	2%	9%	26%	34%	32%	32%
Poverty Rate	47%	51%	49%	47%	37%	40%
Total Housing Units	9,201	8,869	9,475	10,339	11,099	11,271
Vacancy Rate	7.1%	4.7%	4.8%	9.8%	7.3%	9.3%
% Renter	67%	68%	67%	66%	68%	69%
Multi-Unit Housing	32%	37%	38%	36%	34%	36%
Mean HH Income (2013$)		29,118	33,436	42,042		38,513
Mean Rent Range (2013$)		470	700	667		901

Source: US2010 Project available at http://www.s4.brown.edu/us2010/Researcher/Bridging.htm; and 2009-2013 ACS tabulated by authors.

The area has a lower percentage of renters than the other two case study neighborhoods, but the renters' share has increased about 3% since 2000. In 2013, 66% of renters were burdened by housing costs in 2013. Mean rents have increase by about $300, while mean household income in the area has declined by more than $3,500 since 1980.

The vacancy rate in the area is somewhat higher than that of Los Angeles County (9% compared to about 6% in 2013, respectively). As with the other case study areas, the number of multi-family housing units has increased over the years. The 103rd St./Watts Towers shows some signs of residential gentrification, while commercial gentrification in the neighborhood appears to be minimal. For instance, observations of the area indicate that Watts has a high rate of property turnover, with corresponding indicators of physical renovations to residential properties. Relative to the other case study areas, however, there may be a lower perception of gentrification due to a low presence of non-Hispanic whites (UCLA Comprehensive Project 2015).

The presence of institutional uses such as churches may also contribute to a difference between actual and perceived gentrification; 17% of surveyed land uses in Watts are characterized as institutional (UCLA Comprehensive Project 2015). The difficulty in adaptively reusing or demolishing these properties prevents significant land use changes. This can contribute to a

perceived lack of neighborhood change as these properties act as historical and cultural flagships (UCLA Comprehensive Project 2015).

Anti-Displacement Policies

The case study station falls within the boundaries of the Southeast L.A. Community Plan Implementation Overlay (CPIO) zone, which applies to the wider South Los Angeles area. However, it is worth mentioning that the area adjacent to the station is also covered by the South L.A. CPIO. Both plans are in draft form and have not been adopted. Both CPIOs have TOD sections and propose Floor Area to Ratio (FAR) incentives in order to encourage mixed-income projects.

The TOD section of the Southeast L.A. draft plan outlines the various benefits for 100% affordable, as well as mixed-income, housing in the different TOD subareas. Single-family homes are prohibited in some TOD subareas, while in other areas only mixed-use projects are permitted (meaning that 100% residential units are prohibited). Developers may utilize an R4 density for the purpose of calculating a baseline residential density when 100% of the dwelling units (minus any required manager unit) are set aside for households of moderate, low, very low or extra low income. Mixed-income housing projects that qualify for a density bonus may utilize additional incentives; for instance reducing the required parking for the entire project by 50% as a third parking option. There are also incentives for mixed-income housing (30 units or more).

The Jordan Downs Urban Village Specific Plan aims to create high-quality transit areas, protect community resources, and provide equitable economic opportunities. For example, the plan seeks to improve connectivity between the aging Jordan Downs public housing project and the 103rd St./Watts Towers station located a half-mile to the west. This plan has the potential to transform Jordan Downs into a mixed-income development. Importantly, the specific plan calls for a one-to-one replacement of existing affordable units. However, the redevelopment effort currently lacks the necessary funding (Garrison 2013).

Most of the formal planning efforts in Watts focus on new residential development. South Los Angeles CBOs like SAJE have noted many instances of illegal evictions and slum conditions in South Los Angeles (personal communication April 16, 2015). CBOs are able to mitigate some of the issues associated with displacement around station areas through organizing and education, policy research, community control of land, and community benefit agreements.

Community Involvement, Response and Resistance to Displacement

CBO representatives believe that Watts is underserved, and economic and community development efforts in the area have been largely unsuccessful. For instance, the area continues to have a need for more jobs (See task 2H), and poverty is on the rise (Table 5.143). Los Angeles Alliance for a New Economy (LAANE), a Los Angeles-based non-profit, has developed a TOD policy agenda encouraging equitable investments that provide good jobs and healthy options in South Los Angeles neighborhoods like Watts that have been overlooked (personal communication February 13, 2015).

Organizing has been used to advance community needs in specific developments or educate residents on the impacts of TOD. The focus of organizing efforts has ranged from renters' rights to technical aspects of city planning. For example, the United Neighbors in Defense Against Displacement (UNIDAD) coalition's organizing effort mobilized community members leading to the inclusion of affordable housing and community serving retail in the Grand Metropolitan development in South Los Angeles (SAJE, personal communication, 2015). It is a new private

project approved by the City Council in August 2015 that will create affordable housing and local jobs and promote economic development in the area. The effort was undertaken in collaboration with a number of community organizations, including SAJE and the Esperanza Community Housing Corporation with the Public Counsel legal firm negotiating the terms (SAJE personal communication, 2015).

Community Benefit Agreements (CBAs) have also been negotiated for a number of developments in and around TODs in the wider South LA by SAJE, Esperanza Community Housing, and other South Los Angeles CBOs. Included in CBAs are provisions for labor, community resources, and affordable housing benefits for low-income residents. These South Los Angeles CBAs are important examples of equitable TOD, although they are outside this study's station areas (Esperanza Community Housing, personal communication 2015).

Because developers may not incorporate community input when forming plans for a new project, CBOs seek other strategies to ensure that community input is prioritized. These efforts can involve community land trusts focused on affordable housing. Education is used as a means of uniting and empowering community members to ensure that development provides positive community outcomes. In South L.A., SAJE has regularly hosted the People's Planning School, an effort to shape policy and planning through grassroots community advocacy (UCLA Comprehensive Project 2015).

CBOs with the requisite resources have purchased and developed land for community use and to ensure perpetual housing affordability. TRUST South LA, believes that a CBO must own the land so that its community is considered a stakeholder by institutional organizations (personal communication, February 20, 2015). As an interviewee stated, the ability to purchase property gives CBOs a greater stake in the neighborhood (TRUST South LA, personal communication, February 20, 2015). Community-controlled land allows CBOs to better dictate what they and their constituents would like to see developed and allows them to have more control over the development process.

Chapter 5 Conclusion

The range of anti-displacement and affordable housing policies is wide. Some policies (like inclusionary zoning and condo conversions) have been adopted in many places; others (like rent control) in only a few. Bay Area cities generally have more policies on the books than cities in Los Angeles County, even though the latter is arguably less affordable.

Some policies show clear results, like those that fund affordable housing projects—you can see and count the units once they are built. There appears to be a correlation between cities with production policies in place and construction of more affordable housing: preliminary evidence that these policies may be working as intended. Others are difficult to track, like inclusionary zoning, or show their effectiveness only through counter-factuals (e.g., the amount of condo conversions would have been higher without laws on the books).

Stakeholders helped us see that political considerations are essential for understanding why some policies get implemented and others do not. They also drew our attention to many loopholes in the policies, showing the importance of interrogating the laws "on the ground" as compared to "on the books." For example, condominium conversion ordinances can be limited by loopholes that allow developers to escape their rental housing replacement requirements and rent control laws can only

slightly slow the rising rents, given state law that insists on vacancy decontrol. Given these aspects of anti-displacement policy, assessing their effectiveness on a systematic basis is difficult, and an important direction for future research.

Regional funding for station area plans, at least in the Bay Area, has included requirements around affordable housing, and most plans do include goals around displacement and affordability. In Los Angeles, plans may not mention gentrification explicitly, but many include provisions around displacement and affordability. However, these plans have limited reach; many cities rely on their citywide policies to reach their TOD-specific goals; in the Bay Area, more grant funds have not gone to cities with more policies; and evaluation of these plans is very difficult.

Across our six case studies, a unifying feature is the key role community organizing plays in winning the passage and implementation of anti-displacement strategies. Besides this, the features of the neighborhoods vary considerably.

In San Francisco's Chinatown, neighborhood-level zoning and rental housing policies protected this area from the displacement occurring around it. In East Palo Alto, citywide tenant protection and affordable housing production policies helped limit displacement, but other features of the community—poor schools, lack of amenities, and an image of the neighborhood as unsafe—probably played a large role in limiting the amount of gentrification in the neighborhood, and in keeping displacement pressures at bay. Would the city's anti-displacement measures have prevented displacement if market conditions had encouraged more gentrification?

In San Jose's Diridon Station area, rent stabilization likely limited dramatic rent increases at nearly 500 units. Also, pro-market-rate housing production policies, while not explicitly anti-displacement, seemed to have allowed the scale of development necessary to accommodate the influx of higher-income residents without displacing existing residents.

Meanwhile, the Los Angeles case studies focused more on the role of station area plans in addressing displacement. While some of these plans indicate the need and desire from the part of the planners for more affordable housing, and offer incentives such as density bonuses to developers, it is very early to assess their effectiveness. Similar to the Bay Area, CBOs and non-profits in the Los Angeles area case studies are actively advocating against displacement and for more affordable housing and living-wage jobs.

From these case studies, it is clear that anti-displacement policies are important. However, they are rarely the whole story, and, instead, features of the neighborhood play an equally important role. Advocates need to consider the unique features of their place in deciding which policies to organize around.

Even with this plethora of policy options, it is not clear that the policies we have developed today, as currently implemented, come anywhere close to addressing the displacement occurring around transit, nor to filling the enormous gap in affordable housing. Stronger enforcement of existing policies, expansion of policies, and more organizing will be necessary to ensure the stability of low-income populations going forward.

Of 14 anti-displacement policies inventoried across the two regions, inclusionary zoning and condo conversion ordinances are most popular; rent control and just-cause policies are rarer. Bay Area cities generally have more policies on the books than cities in Los Angeles County. Yet, their effectiveness is not well-studied, and it remains unclear whether they can successfully scale up to

address the dire need for affordable housing in California. At present, many station area plans include requirements for the production of affordable housing, and often the reduction of displacement as well. However, the level of funding to date has been insufficient to produce significant amounts of housing and to stabilize the low-income communities living near transit. Case studies demonstrate the key role community organizing can play in winning the passage and implementation of anti-displacement strategies.

Conclusion

Fixed-rail transit has a significant impact on the stability of the surrounding neighborhood. In transit neighborhoods, housing costs tend to increase, changing the demographic composition of the area and resulting in the loss of low-income households. We find that low-income households both near and farther away from rail stations have lower VMT than high-income households, but that higher-income households either reduce their driving more in response to being near rail, or that there is no difference in VMT impacts between income categories when considered at a regional level.

Our findings generally confirm earlier research on gentrification and displacement, but extend previous work by explicitly linking transit investment to gentrification and displacement, and investigating how income and proximity to transit influence VMT.

Via several different models, we find a significant and positive relationship between TOD and gentrification, and in some cases the loss of affordable housing or low-income households as well. In general, TOD has a more significant impact in the core cities of the SF Bay Area and Downtown Los Angeles. Yet, the timeframe of impacts is less clear. In some cases, it seems to take decades, and in others, much less time. Moreover, other variables—such as historic housing stock and changes in affordability—compound the effects of TOD, sometimes with a more significant effect.

Proximity to rail is associated with lower VMT for both lower-income households and higher-income households. Given the lack of appropriate data, it is hard to predict how households will alter their VMT with displacement, for instance as high-income households replace low-income households near transit. In general, our study predicts that displacement induced by gentrification will either reduce net regional VMT or have no effect. However, increases of VMT may occur to the extent that very-low-income households are displaced by those of moderate income, or if gentrification results in a reduction of the population living near rail. More research is needed to understand the dynamic impacts that occur as residents adjust their travel behavior in new locations.

Since fixed-rail transit impacts neighborhood stability, and public investment subsidizes transit in California, it is appropriate for policy makers to take action that will reduce displacement. Yet, there is no simple recipe for mitigating displacement. The effectiveness of policy solutions varies by context, and it is unclear whether any of the existing approaches are sufficient to address displacement in the core neighborhoods where it is most prevalent. More research is needed to develop responsive policy tools, as well as to understand better the trade-offs between anti-displacement and VMT reduction goals.

Despite these remaining concerns, it is not too soon to begin incorporating these results into existing regional models (PECAS and UrbanSim) to analyze different investment scenarios and market conditions. We also recommend that practitioners begin to use our off-model tool to help identify the potential risk of displacement.

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Appendices

Appendix A. Summary of Racial Transition and Succession Studies

Authors	Scale	Units of Analysis	Study Methods	Conclusions
Bostic and Martin (2003)	Nationwide (50 largest metros)	Census tract	The authors use census data from 1970 through 1990 to identify "gentrifiable" and gentrifying tracts. They then model different levels of black homeownership in these tracts over time.	Middle class black homeowners are found to be drivers of gentrification in the 1970s, though this finding loses significance in the 1980s.
Card et al. (2008)	Nationwide	Census tract	The authors use census data from 1970, 1980, 1990, and 2000 to estimate the existence of "tipping points" in neighborhood racial composition, beyond which changes in composition change more rapidly.	The authors find evidence of neighborhood tipping phenomena, with tipping points generally occurring when neighborhoods reach between 5% and 20% non-white. The specific point at which tipping occurs depends significantly on a variety of metro-level variables, including rates of violent crime, past incidences of riots, and measured racial animus.
Charles (2000)	Los Angeles	Individual survey respondents(N = 4,025)	Charles asks respondents of different races and ethnicities (white, black, Latino, Asian) whether they would prefer neighborhoods of various racial and ethnic compositions. The results are then regressed on a number of individual and neighborhood attributes.	Charles finds strong preference for same-race neighborhoods, with this preference particularly strong for white households. Additional modeling shows this preference to decline with graduate education and with younger respondent ages, and to increase with greater levels of racial stereotyping.
Charles (2003)	Literature Review	Mostly census tract and individual household	Charles reviews extant literature on various aspects of residential segregation, including the prevalence of segregation among different population groups, theories and empirics of neighborhood attainment, and patterns of individual neighborhood preference.	Looking specifically at neighborhood attainment, Charles differentiates between "spatial assimilation", which holds that different population groups integrate spatially in accordance with their SES attainment, and "place stratification", which holds that structural factors maintain patterns of spatial segregation, SES notwithstanding. While Charles finds much disagreement within the literature, there appears to be greater evidence for "place stratification" holding among black households.

Authors	Scale	Units of Analysis	Study Methods	Conclusions
Chipman, Wright, Ellis, and Holloway (2012)	Chicago	Census tract	Chicago neighborhoods are classified cross-sectionally according to race/ethnicity composition and tracked in their transitions from 1990 to 2010. The authors focus specifically on integrating descriptive results into an interactive mapping tool.	As with other studies the authors noted processes of diversification outside of Chicago's urban core, though they also noted a subset of "low-density, black-dominated tracts, whose numbers and locations barely changed during the past 20 years."
Crowder and South (2005)	Nationwide	Family	Using Panel Study of Income Dynamics longitudinal data from 1970 through 1997, the authors model the likelihood of black and white households transitioning between poor and non-poor tracts.	Across all years of the study, black-headed households are less likely than white-headed households to move from poor to non-poor tracts and more likely to move from non-poor to poor, after controlling for a number of factors. The racial discrepancy in both of these migration rates declined over time, however.
Crowder et al. (2011)	Nationwide	Family	The authors use Panel Study of Income Dynamics (PSID) data to follow panels individual households from 1968 through 2005. They model the likelihood of moving in terms of the immigrant presence in a given neighborhood.	The authors find that both native-born white and native-born black families are more likely to move out of neighborhoods with greater immigrant populations, with this result holding after controlling for a number of neighborhood and individual household variables.
Ellen, Horn, and O'Regan (2012)	Nationwide	Census tract	Census data from 1970 through 2010 is used to classify neighborhoods by race/ethnicity composition and to track the transitions between classifications.	There has been a steady increase in integrated neighborhoods, though a majority of non-integrated neighborhoods have remained so, and a substantial number of integrated neighborhoods have reverted to non-integrated status. Correlates of greater rates of integration include location in a central city and metropolitan growth.
Farrell and Lee (2011)	Nationwide (100 largest metros)	Census tract	Census data are used to categorize neighborhoods by race and ethnicity composition in 1990 and 2000, with transitions between classifications tracked.	Splitting neighborhoods cross-sectionally into those that are "dominant", "shared", "two-group", and "multi-group", the authors then look across time to classify neighborhoods as bifurcating, fragmenting, integrating, or "other". The authors find general trends toward diversification across metro areas, though they did note a subset of tracts experiencing a reduction of diversity through white out-migration.

Authors	Scale	Units of Analysis	Study Methods	Conclusions
Freeman and Rohe (2005)	Nationwide	Census tract	The authors identify tracts that received assisted housing (including public housing and housing units constructed under Section 236, Section 8, or the LIHTC program) between 1980 and 1990. The authors then use propensity score matching to test whether these tracts underwent greater racial transition than did comparable tracts that did not receive assisted housing units.	The authors find little evidence that the presence of assisted housing led to a greater outflow of white residents.
Glaeser (2003)	New York, New Jersey, California	Tenant, city	Glaeser examines the characteristics of tenants in rent-controlled units vs. non-rent-controlled units in New York City, as well examining aggregate statistics for California and New Jersey municipalities with and without rent control.	Rent control tenants in New York City are lower income, and older than tenants overall. They are also more likely to be white, casting doubt on rent control's ability to effect racial integration in the city. Looking at cities in California and New Jersey, Glaeser finds that cities with rent control in California saw less of an increase in rents and incomes than cities without, while the opposite was true for cities in New Jersey. Glaeser takes this as evidence that rent control might marginally increase economic integration in California, while it might be exasperating the concentration of poverty in New Jersey. The paper has little concrete to say with respect to racial segregation.
Hipp (2011)	Multiple cities for which violent crime data is available	Housing unit	The author uses American Housing Survey data from 1976 through 1999 to estimate probabilities of neighborhood out-migration and in-migration relative to crime rates.	Hipp finds that disparate levels of in- and out-migration by race contribute to different exposures to neighborhood crime by race and ethnicity. Controlling for a variety of individual and neighborhood characteristics, white households are more likely to exit neighborhoods with high and rising crime rates, while black and Latino households are more likely to enter into such neighborhoods.

Authors	Scale	Units of Analysis	Study Methods	Conclusions
Hipp (2012)	Nationwide	Housing unit	The author uses American Housing Survey data from 1985 to 1993 to predict the race of in-movers to a longitudinally tracked housing unit, based on racial characteristics of the surrounding census tract, an 11-houshold "micro-neighborhood", and of the prior occupants of the unit.	Same-race proportions at the micro-neighborhood level are better predictors of racial occupancy than are the comparable proportions at the tract level. Accounting for these neighborhood compositions, the race of the prior householder is still strongly predictive of the race of the new occupant. One explanation put forward for this phenomenon is a signaling mechanism, where new residents gain assurance that they belong in a given setting.
Krysan et al. (2009)	Metro Chicago and Detroit	Individual survey respondent (N = ~1,500)	Respondents of different races are shown videos of neighborhoods that vary by class signifiers and racial composition. The respondents were then asked to rate the desirability of the neighborhood.	Controlling for class, white respondents rate neighborhoods with black population and mixed population representation and less desirable than those with white population representation. Conversely, black respondents rated white neighborhoods as less desirable than black neighborhoods, but rated black neighborhoods as less desirable (though not statistically significantly) than mixed neighborhoods.
Lee and Wood (1991)	Nation-wide (58 central cities)	Census tracts	The authors used census data for 58 out of 60 central cities with populations greater than 250,000 in 1970 or 1980 to assess the trajectories of racially mixed neighborhoods during this time period.	The authors find significant variation in tract trajectories based on regional, city, and neighborhood factors. Framing transitions in terms of "succession", "stability", and "displacement", the authors find, for instance, that tracts across different regions that experience either displacement or stability tend to have greater initial population percentages of Hispanic and foreign born residents.
Logan and Zhang (2010)	Nationwide	Census tract	The authors track neighborhood race and ethnicity compositions from 1980 through 2000, looking to examine the role that "global neighborhoods" of high Asian and Hispanic residence play in integrating previously white neighborhoods.	While finding evidence for global neighborhoods, the authors also find that broad patterns of residential settlement are largely maintained through the avoidance by whites of "all-minority" areas, as well as of the out-migration of whites from more diverse neighborhoods.

Authors	Scale	Units of Analysis	Study Methods	Conclusions
McKinnish, Walsh, and White (2010)	Nationwide	Census tract	For both 1990 and 2000, the authors use confidential Census data to model household movements into and out of gentrifying neighborhoods (defined by baseline income and income change).	The authors find that largely middle-class black families carry out the income gentrification of low-income black neighborhoods. Conversely, gentrifying neighborhoods with low black populations see an increased outflow of high school-educated black households, though also with a substantial inflow of this same population group.
Ottensmann (1990)	South Bend, IN	Tract	The authors specify and run a set of simulation models to test the increase in neighborhood concentration of black residents between 1980 and 1990. The authors compare the concentration of black residents with and without the presence of black in-migration to the study metro.	The authors find that the in-migration of black residents is a major driver of greater black-white segregation.
Quercia and Galster (2000)	Literature Review	Primarily census tracts and block groups	The authors assess literature on neighborhood threshold effects, assessing theorized mechanisms for such thresholds, the neighborhood attributes on which such thresholds are conceptualized, the analytic methods by which thresholds are identified, and the actual empirical assessment of thresholds.	The authors find the "extant empirical literature" to be "sketchy", though they do see evidence for thresholds or "tipping points" along related socioeconomic measures, whereby neighborhoods have downward trajectories reinforced.
Reibel and Regelson (2011)	Nationwide (50 largest metros)	Census tract	The authors use a cluster analysis applied to neighborhoods based on their patterns of racial change between 1990 and 2000. They then analyze the distribution of these clusters, including specifying a model to account for the probability of a tract falling in a given cluster.	The authors find substantial regional variation in the prevalence of different transition types. Modeling this, they find that racially stable neighborhoods are more probable in the Northeast and South, transition from white to Hispanic less probably in the South and transition from white to black more probable in the south. They also find differences in transition probabilities based on racial/ethnic composition of metros (e.g. more "moderate integration" in metros with higher Asian population percentages) as well as locational characteristics of individual tracts (e.g. less integration in central cities).

Authors	Scale	Units of Analysis	Study Methods	Conclusions
Rosenblatt and Deluca (2012)	Baltimore	Family	The authors conduct interviews with families who have participated in Moving to Opportunity in Baltimore, seeking to understand why a large proportion of such participants moved back to high-poverty neighborhoods after program enrollment.	The authors note reports of families seeking to live in larger housing units in order to accommodate larger family sizes. These units were seen to be more affordable in high-poverty neighborhoods. Moreover, the interviewed families were able to move into such neighborhoods because of copying mechanisms developed during prior stays in distressed neighborhoods.
Sampson (2012)	Chicago	Family	Sampson uses longitudinal family survey data, as well as detailed information on the characteristics of neighborhoods, to model the neighborhood attainment of moving families.	A number of neighborhoods and household factors beyond mere race, income, and proximity are significantly predictive of where moving families end up. Specifically, similarities in perceived neighborhood disorder and closeness of elite and non-elite social network ties between origin and destination neighborhoods are associated with neighborhood destinations.
Sampson and Sharkey (2008)	Chicago	Family	The authors use longitudinal survey data to tract movement of families originating in Chicago, analyzing these movements in terms of detailed survey responses given by the families and characteristics of the neighborhoods of origin and destination.	The authors find movement between neighborhoods to be heavily patterned by race and class, with aggregate flows of family movements serving to reinforce existing patterns of racial and economic segregation.

Appendix B. Summary of the Impact of Rail Transit Facilities on Residential and Commercial Property Values

Authors	Rail Mode	Location (Transit Facility)	Methodology Used	Extent of Property Value Impact	Major Conclusions
Ahlfedt (2013)	Light Rail (Jubilee Line & Docklands Light Railway)	London	Pre/Post Study	The study showed that for the average household a doubling of access to employment centers results in a utility effect that is equivalent to an increase in monthly income of £383 (in 2001 prices).	The model provides a better overview of potential funding possibilities for projects, particularly regarding contributions made by landlords levied on the predicted property price impact.
Armstrong (1995)	Commuter Rail (MBTA Fitchburg line)	Boston	Hedonic Price Models	Homes located in census tracts with rail stations had 6.7 per cent higher selling prices.	Proximity to the line (within 400 feet) coincided with a 20 per cent decrease in value, suggesting disamenity effects caused by frequent freight trains.
Armstrong and Rodriguez (2006)	Commuter rail	Four municipalities with commuter rail service, and three without commuter rail service.	Hedonic Price Models	Study finds a 10 per cent premium near stations.	There is a penalty between $73 and $290 per 100 feet closer to the right-of-way.
Bowes and Ihlanfeldt (2001)	Rapid Rail (MARTA)	Atlanta	Hedonic Price Models	Properties within a quarter of a mile from a station are found to sell for 19% less than properties beyond three miles from a station. And houses beyond three miles from a station sell on average for 4.7% more if the nearest station has a parking lot.	The positive effect of access to stations was generally greater than the negative effects of crime or the positive effects of retail, although within a quarter-mile radius some stations appeared to have net neutral or negative impacts.
Cervero (1996)	Heavy Rail	San Francisco Bay Area (Bay Area Rapid Transit)		+10-15% in rent for rental units within 1/4 mile of BART	Units within a quarter-mile of the Pleasant Hill Bart station rented for around $34 more per month than comparable unit farther away.
Cervero and Duncan (2002)	Light and Commuter Rail	Santa Clara County	Hedonic Price Models	Large apartments within a quarter mile of station premiums as high as 45 percent, while land near commuter rail had a premium of about 20 per cent.	Apartments near light rail stops were more valuable than comparison properties.

Authors	Rail Mode	Location (Transit Facility)	Methodology Used	Extent of Property Value Impact	Major Conclusions
Chatman et al. (2012)	Light, Interurban Rail (River Line)	Southern New Jersey	Hedonic Price Models	Neutral to slightly negative.	The net impact of the line on the owned housing market is neutral to slightly negative. While lower-income census tracts and smaller houses seem to appreciate near the station.
Chen et al. (1998)	Light Rail	Portland	Hedonic Price Models	Property premium was estimated at about 10.5 per cent.	The value of accessibility to the station generally exceeded the nuisance of the line.
Duncan (2008)	Light Rail	San Diego	Hedonic Price Models	17 per cent premiums for condominiums and 6 per cent premiums for single-family homes within a quarter-mile of light rail stations.	Past research has shown that property near rail stations have a premium (between 0% and 10%) in many U.S. cities. However, most of these studies focus on single-family homes. This paper indicates that condominiums receive capitalization benefits in excess of 10%, and the benefits received by single-family properties fall within the more typical range (<10%).
Gatzlaff and Smith (1993)	Heavy Rail	Dade County, Florida (Miami Metrorail)	Pre/Post Study	At most a 5% higher rate of appreciation in real estate sales value compared to the rest of the City of Miami.	Residential values were only weakly impacted by the announcement of the new rail system. Higher priced neighborhoods have experienced greater increases in property values near Metrorail stations while declining ones have not
Gibbons and Machin (2005)	London Underground and Docklands Light Railway (late 1990s)	South East London	Hedonic Valuation Models	House prices rose by 9.3 percent more in places with transit than without.	The study suggests that households significantly value rail access and that these valuations are sizable as compared to the valuations of other local amenities and services.
Goetz et al. (2010)	Light Rail (Hiawatha Line)	Minneapolis	Pre/Post Study	Single-family homes within ½ - mile of a station sold for $5,229 more after 2004 than homes farther from the station. The premium for multi-family properties was $15,755 after the line opened.	This study demonstrates that completion of the Hiawatha Line has generated value and investment activity in the Minneapolis housing market.

Authors	Rail Mode	Location (Transit Facility)	Methodology Used	Extent of Property Value Impact	Major Conclusions
Hess and Almeida (2007)	Light Rail	Buffalo, New York	Hedonic Price Models	A premium of between 2 and 5 per cent of value was found.	There is a lower effect for properties in economically declining areas and higher effects in more prosperous areas.
Immergluck (2009)	Light Rail (Beltline)	Atlanta	Pre/Post Study	Single-family homes within one-quarter mile of the planned loop sold at a 15 to 30 percent premium compared to similar properties located more than two miles away.	The study found large increases in premiums for homes near the lower-income, southern parts of the Beltline TIF district between 2003 and 2005, which corresponded to initial media coverage of the planning process. The findings suggest that planning for the Beltline induced substantial speculation and gentrification.
Kahn (2007)	Light Rail	14 cities	Pre/Post Study	Neighborhoods close to new “walk-and-ride” stations saw home values increase more than 5 percent over 10 years, but home values near new “park-and-ride” stations fell by about 2 percent.	This article uses a 14-city census tract–level panel data set covering 1970 to 2000 to document significant heterogeneity in the effects of rail transit expansions across the 14 cities. Communities receiving increased access to new “walk-and-ride” stations experience greater gentrification than communities that are now close to new “park-and-ride” stations.
Knapp et al. (2001)	Light Rail	Portland	Pre/Post Study	Vacant parcels within one-half mile of the planned line sold at a 31 percent premium in the two years after plans were announced. The premiums for parcels within one mile were 10 percent.	The study find that plans for light rail investments have positive effects on land values in proposed station areas.
McDonald and Osuji (1995)	Southwest Side Rapid Transit Line	Chicago	Pre/Post Study	An increase of 17 per cent in value for properties within a half-mile of stations by examining comparative parcel sales from 1980 to 1990.	Alternatively, the increase was 1.9% (or $126.75 per lot) per mile of distance to downtown Chicago for those sites within one-half mile of the stations.

Authors	Rail Mode	Location (Transit Facility)	Methodology Used	Extent of Property Value Impact	Major Conclusions
McMillan and McDonald (2004)	Rapid Transit Line (Downtown Chicago to Midway Airport)	Chicago	Pre/Post Study	Single-family homes near transit began selling for 4.2 percent more than homes one mile away in the 1980s. The premium increased to as much as 19.4 percent between 1991 and 1996 before correcting to just about 10 percent in later years.	House prices were being effected by proximity to the stations in the late 1980s and early 1990s—after the plans for the line were well known. The difference between the increase in the value of homes within the sample area as compared with properties farther away from the new transit stations was approximately $216 million between 1986 and 1999.
Nelson (1992)	Heavy Rail	Atlanta, Georgia (MARTA East Line)	Hedonic Price Models	+$1,000 on home prices for each 100 feet a house is closer to a rail station in low-income transit adjacent census tracts; a slight negative effect in high income tracts (although this may be due to proximity to industrial uses or to low income neighborhoods).	For lower income neighborhoods, the benefit effects of accessibility more than offset any nuisance effects. Higher value homes may be more sensitive to nuisance effects than by improvements in accessibility.
Pollack et al. (2010)	Fixed Rail	42 stations	Pre/Post Study	In 29 of the 42 station areas, the median home value increased by at least 20% more than in the region as a whole. Station area median gross rents outpaced the region by a similar margin in about 40 percent of cases.	The study affirm that transit can be a catalyst for neighborhood renewal, and that such improvements to neighborhood accessibility could potentially 'price out' current residents because of rising property values.
Weinberger (2001)	Light Rail	Santa Clara County, California	Explanatory hedonic models. The study design attempts to reconcile both longitudinal and cross-sectional effects in a single model.	A commercial property within ~ ¼-mile of a transit station would lease in 1993 for 13.8% more than other properties leased in the County in that year, if it were leased in 1997 it would command a 14.6% premium but only 5.2% in 1998.	The basic results indicate that after controlling for factors such as length and type of lease, building improvements, regional and local economic cycles, and location, properties that lie within a ~ ¼ mile of a light rail station command a higher lease rate than other properties in the County.

Appendix C. Summary of Studies on TOD and Gentrification

Authors	Location of Study	Time Period	Variables & Methods Used	Major Conclusions
Lin (2002)	Chicago	1975-1991 Study Periods: 1975-1980, 1980-1985 and 1985-1991.	Residential zoning densities; straight-line distances to the CBD, Lake Michigan and transit stations; annual changes in land values. Method: regression analysis	• Transit had influenced gentrification during two of the three periods studied, with large, negative and statistically significant coefficients relating changes in housing values to proximity to transit. • Weakness: Results are limited since gentrification is usually measured with a variety of indicators, yet Lin only took into account changes in land values
Kahn (2007)	14 cities	1970-2000	Property values; education level; proximity to walk-and-ride stations; proximity to park-and-ride stations; and proximity to any transit station interacted with the median household income. Methods: Three model structures for statistical analysis. Regression analysis to estimate the changes in housing prices at the four study periods: 1970, 1980, 1990 and 2000.	• The regression showed mixed results across the study sample - walk-and-ride stations having a positive effect on housing prices, and park-and-ride stations effecting housing prices negatively. • The results were inconclusive, and varied depending on the type of regression models used (OLS or IV), ultimately demonstrating that although gentrification did occur near some walk-and-ride stations, it did not appear near park-and-ride transit stations.

Authors	Location of Study	Time Period	Variables & Methods Used	Major Conclusions
Pollack et al. (2010)	12 cities	1990-2000	Population; race; household income; gross rent; mobility status (whether residents have moved in the last 5 years); transit ridership; housing value; and number of cars per household. Variables were collected and analyzed at the census block group level. Method: Regression Analysis	• Population, housing units, income, rents and home prices all increased in new rail station areas. • Car ownership increased. • A significant percentage of station areas saw transit use drop faster than the region.
Dominie (2012)	Los Angeles	1990-2010	Two income variables (high- and low-income households); changes in race/ethnicity; occupation; and education. Method: Six Regression Models	• Areas around transit in Los Angeles County, for the most part, were more likely to gentrify, • Greater increases in car-owning residents than the surrounding counties, and experienced resultant losses in transit ridership.

Appendix D. TOD Impacts in Los Angeles

Here we provide a brief overview of recent studies conducted by UCLA students, as well as nonprofit and public agencies related to TOD development and its impacts in Los Angeles neighborhoods.

UCLA Student Research

A UCLA study entitled *TOD Impacts on Businesses in Four Asian American Neighborhoods* focused on Chinatown, Thai Town, Little Tokyo, and Koreatown. Overall, this study was the first to examine the impact of TODs on small and ethnic businesses, thus expanding the way researchers should examine the impacts of government infrastructure investments on neighborhood change. Despite data limitations, the available information indicated that many local and Asian businesses did not proportionately benefit from development. There was considerable heterogeneity among the four communities in terms of impacts. From 2001 to 2011, businesses in Chinatown grew at a much lower rate relative to businesses in LA County, and the growth rate of Asian businesses showed a more drastic decrease in the TOD study area compared to that of LA County as well (Fang and Le, 2014). Koreatown only slightly lags behind Los Angeles County for all business and small business growth, thus this neighborhood is still very competitive and has potential for future growth (Cha et al. 2014). In Little Tokyo, the data implies that the TOD study area and LA County's overall business sectors are dynamic, though the study area saw lower rates of business growth and lower turnover (Hom, Toscano, and Yang, 2014). Finally, in Thai Town, the data suggests that while the overall business sector and small business subsector in the TOD Study Area are flourishing, Asian businesses are growing at a dismal rate (Macedo and Nem, 2014). Thus, the results are consistent with community concerns about a relative slowing of growth in small and Asian businesses. The study suggests that greater attention by government is needed to maintain the cultural characteristics of neighborhood and to support small local and ethnic businesses (Ong, Pech, and Ray 2014).

A second UCLA project focused on the analysis of transit-oriented development and fair and affordable housing, examining four LA neighborhoods: Boyle Heights, Westwood, the neighborhood around Sunset/Vermont, and the neighborhood around USC. All these TOD areas had distinctive characteristics.

- In Boyle Heights, racial/ethnic groups within the TOD Service Area earn far less than their respective racial/ethnic group in L.A. County at large. This pattern indicates that economic conditions have been a major factor driving the racial/ethnic distribution in the TOD Service Area, rather than explicit racial/ethnic discriminatory forces. Boyle Heights and the TOD Service Area both have a substantially higher proportion of affordable rental units than L.A. County at large. In addition to this, the median income in both areas is far lower than the county median. Due to these combined factors, the availability of affordable units provides residents with a relatively stable supply of housing, in turn lowering the rent burden in the area (Beltran et al., 2011).
- Around USC, there does not appear to be significant discrimination in housing on the basis of race or ethnicity, as Hispanic and Black/African American households are overrepresented in the USC neighborhood. However, an overrepresentation of African American and Hispanic households may be indicative of housing discrimination in other parts of the city or region. There is a strong supply of low-rent housing, yet a majority of households still pay more than 30 percent of income on housing costs (Lopez et al., 2011).

- In the Sunset/Vermont station area there was no significantly overrepresented or underrepresented racial ethnic group. Trends confirm that the area is actually moving towards representations more consistent with Los Angeles County. Sunset/Vermont does not appear to have a greater need for affordable housing than the County, as it has proportionately twice as many low rent units than the County. However, over 50% of renters in this neighborhood face rent burden.
- In Westwood, subtle housing discrimination practices seem to exist. The research found that Latinos/Hispanics and Blacks are underrepresented in the neighborhood. And the area has an inadequate supply of low-rent housing and a high housing burden among renters. Indeed, people who want to live and work here cannot afford to be here without paying more than 30% of their income on rent (Allen et al., 2011).

Non-Profit Studies

1. Planning to Stay: A Community Created Master Plan for an Improved Transit Village in Westlake. **February 2010. Central City Neighborhood Partners.**

This study focused on the Metro Red Line in Westlake Village in Los Angeles. This area is a low-income, immigrant community, predominantly composed of renters, near downtown Los Angeles. The proximity to downtown and good transit access has prompted significant development interest, which has caused hardship for many residents because of increasing rents. The report mentions the replacement of mom-and-pop businesses by chain and upscale establishments.

The report views resident participation as critical to prevent further displacement and maintain affordable housing:

> Residents' leadership is especially critical in resolving the conundrum of improving the neighborhood without gentrifying it. The solution is likely a combination of aggressive affordable housing policy and strategic improvements crafted to improve the neighborhood more in the eyes of current residents, than in the view of new more affluent residents (2010:11)

The report asks the important question: "Are we planning a transit village, or does it already exist?" This area is already very transit-friendly, as it is within walking distance of the Metro, Rapid Bus and bus lines. It averages 33,594 residents per square mile, more than 4 times the city average. The commercial streets are aligned with neighborhood businesses, services and offices in multi-story mixed-use buildings with active street facades. The area already has four times more transit use than the City of Los Angles and seven times more than Los Angeles County. Consequently, the goal of this study is not to plan a transit village, but rather to improve an existing one. Suggestions proposed include:

- A "Transit Investment Based Inclusionary Housing Zone" that would require 25% or greater affordable units in all new construction and major renovations within ½ mile of the Red Line station. If challenged in court, the authors of the report believe that this policy would be affirmed because the value of station-adjacent property is significantly increased by the enormous public investment in the station and line, thus creating a constitutional basis for requiring developers to provide affordable housing.
- Density bonus programs that provide an additional incentive to build more affordable units. Modeled after the City of West Hollywood's successful ordinance, the policy proposal offers progressively more density bonus as the developer provides more affordable housing, all

the way up to a 100% bonus for 100% affordable housing.

- Implementation of inclusive policies that ensure housing development rather than decrease the stock of affordable housing. It is critical to do this first, so that if later steps attract developer attention, their new projects will be certain to include ample affordable housing.
- Improvement of the neighborhood landscape starting with enhancements that serve current population such as a new DASH route (local shuttles), widened sidewalks, etc.

2. Hollywood: A Comeback Story and Lessons Learned. Beth Steckler and Lisa Payne. **February 24, 2012.**

The introduction of the Metro Red Line subway and three stations along Hollywood Boulevard in the heart of the redevelopment project area has served as a catalyst for development. The Community Redevelopment Agency (CRA) adopted a "bookend strategy" that at first focused investment around the stations with the assumption that it would then be easier to attract development to the rest of the project area.

However, by 2009 the demographics of Hollywood's residents had changed: they owned more cars, composed smaller households, and had higher incomes than the previous area residents. Despite all the development, the study outlines that the number of people living in central Hollywood fell by about 10 percent, while population in the city grew by about 9 percent. Per capita income rose 34 percent in Hollywood, but only 2 percent citywide. And there was an increase in car ownership despite the easy availability of high-quality transit: The area witnessed a 32 percent decrease in car-free households, while households with one car increased by 15 percent. This information has implications for ridership on the transit system. All the numbers suggest that, despite the city's extraordinary efforts to keep housing affordable, Hollywood is gentrifying.

Focusing on the case study of the Hollywood area, the report suggests the following 11 recommendations for TODs around metro stations in Los Angeles:

- Be bold in addressing big problems
- Get city agencies working together with the community
- Engage communities of interest to help address problems
- Tackle crime and problem properties
- Deliver on the promise of good jobs for the community
- Capture some of the increased property value
- Devise strategies for making streets and sidewalks clean
- Minimize displacement
- Seize opportunities for moving mission forward
- Get the parking right
- Advocate for local, regional, statewide, and federal policies.

3. Creating Successful Transit-Oriented Districts in Los Angeles: A Citywide Toolkit for Achieving Regional Goals. **February 2010. Center for Transit-Oriented Development.**

The Center for Transit-Oriented Development (CTOD) set out to determine why good TOD is or is not occurring around stations, and to strategize about ways that station area performance could be improved. CTOD examined the current success of transit-oriented districts through a data-driven analysis and a discussion with focus groups from five transit corridors in the city. They created a variety of tools measuring current performance including a station typology, station area profiles, and a set of regional screen maps that analyze demographic and economic conditions throughout the City.

The CTOD also conducted a case study analysis of five corridors that have clusters of stations, including: the Gold Line from Little Tokyo to Indiana; the Red Line from Vermont/Wilshire to Vermont/Sunset; the Orange Line from Sepulveda to Warner Center; the Expo Line from USC to Crenshaw; and a key portion of the proposed downtown streetcar alignment. CTOD invited stakeholders from these corridors to talk about the opportunities and challenges of TODs. Participants included staff from several city departments and various agencies including CRA-LA, the Planning Department, and LA Metro, as well as community members and organizations, institutional property owners and major employers, and planners, developers, and activists.

This report emphasizes that transit investment and transit-oriented districts are keys to enhancing affordable living. A 2009 study by the American Public Transportation Association found that households that used transit saved an average of $10,000 in Los Angeles (2010: 4). Additionally, there is growing support for TOD from business interests. The authors emphasize that achieving TOD success requires the involvement of many public and private organizations.

According to the report, the demand for transit-oriented living in the Los Angeles region is strong and growing; nearly two-thirds of this demand is likely to come from households earning less than the city's median income (2010: 7). Already, transit serves many of the city's existing lower-income neighborhoods, offering residents regional access but increasing their vulnerability to displacement over time. (2010: 8). Furthermore, 22.4 percent of jobs in Los Angeles County are connected to transit (2010: 8).

The report stresses that since contracts on over 20,000 units of affordable housing will expire by 2014, housing preservation will be a key component of station area planning. Another means of protecting affordability is to proactively implement development plans for small parcel sizes near some transit stations. The chart below identifies different TOD strategies that relate to several topics (for example, Housing Affordability and Economic Development) that came about as a result of this project.

4. Preservation in Transit-Oriented Districts: A Study on the Need, Priorities, and Tools in Protecting Assisted and Unassisted Housing in the City of Los Angeles. May 2012. Prepared for the Los Angeles Housing Department. Prepared by: Reconnecting America.

For this study, four existing transit-oriented districts were selected as areas of focus for preservation activities over five years. The areas were chosen based on several factors:

- Median Household Income
- Percent of Renter-Occupied Households

- Potential Change in Market Strength Resulting from:
    - Proximity to Major Job Centers
    - Areas with Lower Transportation Costs
    - Rising Property Values
    - Transit Access to Downtown Los Angeles and Westwood Resulting from Measure R Investments
    - Historic Neighborhood Character (age of buildings)
- Vulnerability of Housing Stock:
    - Concentration of Income-Restricted, At-Risk Units
    - Concentration of Larger Buildings Subject to the Rent Stabilization Ordinance
    - Concentration of Smaller Buildings Subject to the Rent Stabilization Ordinance

The station area clusters chosen were along the Red Line, Purple Line, Venice Blvd. Central L.A Rapid Bus corridor (North of I-10), and Expo Line. The areas chosen exhibited a high confluence of vulnerability factors.

The study suggests that if transit investments manage to reduce congestion to major transit-oriented job centers like Downtown Los Angeles or Westwood, then workers in these places must be able to reach them by transit. Thus, the report proposes a comprehensive TOD strategy that might include the following:

- Affordable housing preservation;
- Coordinated land use regulations that leverage new transit-oriented development (both market rate and affordable);
- Provision of other amenities such as parks, quality schools, fresh food, etc.;
- Making last mile connections and investing in supportive pedestrian, bicycle, parking improvements and land use planning efforts; and
- Coordinated workforce and economic development strategy that considers both business attraction and job training near transit.

Appendix E. Summary of Simulation Models of Gentrification

Authors	Model Structure[1]	Model Setting	Mechanisms	Findings
O'Sullivan (2002)	Cellular automata	London	This model is explicitly posed as a spatial instantiation of the "rent gap" theory of gentrification. Each iteration of the model consists of spatially linked properties (the "cells" of the model) passing among states of "not for sale," "for sale," "seeking tenants," and "rented." The rent gap is operationalized as the amount by which the "condition" value of a given property is less than the average condition of spatially linked properties. This gap helps determine the investment in upgrading a property, which in turn helps determine the property's state, as well as values for sale price, rent price, and "neighborhood status."	Posed as an exploratory analysis, model outcomes are shown for a sample run of 60 years, with the author tracking the proportion of properties in each of the four different states, as well as average values occupant income, physical condition of properties, and neighborhood status. The model is able to generate alternate periods of stability and instability in these measures, with neighborhood change dependent on the inclusion of a neighborhood status feedback mechanism.
Torrens and Nara (2007)	Cellular automata and agent-based hybrid	Salt Lake City	The interactive units in this model are of three types: spatially fixed markets and properties, and spatially mobile residents. Residents choose among markets (large aggregations of properties) and then choose among nested properties. The decision whether or not to move, and subsequently where to move, is based on the preferences and economic statuses of residents, as well as of properties of both broader markets and individual properties. Real estate prices are subsequently adjusted based on location-specific vacancy rates.	The authors track five primary market-level outcomes in their model: total household population, average property values, the average economic status of residents, residential turnover, and resident ethnic profile. These outcomes are presented for four different model runs: a status quo scenario; a demand-based gentrification scenario, in which additional high-income households are exogenously input to the model; a supply-based gentrification scenario, in which additional high-value properties are exogenously input; and a scenario combining demand and supply gentrifying pressures. The model, specified in an exploratory way, is able to produce varying gentrification dynamics under these different scenarios.

[1] Mode structure is split into three broad types. “Cellular automata” models consist of spatially fixed units. The characteristics of these units (or automata) evolve according to the attributes of other, neighboring automata. The potential states of the automata, their updating rules, and their geometries of influence are all potentially complex. “Agent-based” models, on the other hand, consist of spatially mobile agents situated within a fixed or evolving environment. The agents move according to decision procedures that can be based on both characteristics of the environment and of other agents. Characteristics of agents themselves may be static or may change over time, and their movement may alter relevant aspects of the environment. Finally, hybrid models contain elements of both cellular automata and agent-based models. These models contain spatially mobile agents, but they also contain spatially fixed cells that evolve according to the actions of mobile agents, as well as in response to the characteristics of other spatially fixed cells.

Authors	Model Structure[1]	Model Setting	Mechanisms	Findings
Jackson, Forest, and Sengupta (2008)	Agent-based	Boston	Four distinct types of mobile agents -- professionals, students, non-professionals, and elderly -- interact with a simulated urban landscape, with movement decisions governed by neighborhood preferences and abilities to pay that vary between agent types. Additionally, rents charged for simulated housing units increase according to the presence of professionals, and students transition over time to either professionals or non-professionals.	Measured outcomes of the gentrification model include the proportion of residents by type in the modeled neighborhoods, as well as the average land rents in these areas. Geographic trends are analyzed in terms of their qualitative similarity to results predicted by theory, and multiple test parameters are tweaked to validate the model's conformity to theoretical expectations.
Eckerd and Reames (2012)	Cellular automata and agent-based hybrid	Abstract grid	The authors posit a model that incorporates both a real estate market that governs the price of simulated plots of land, as well as a preference mechanism the governs the location decisions of residential agents. While the specifics of both of these mechanisms are left vague, the authors specify that residential agents are to be heterogeneous with respect to both income and race, and that these two dimensions of "socioeconomic status" are to drive the gentrifying dynamics.	The work presented by the authors is meant only to lay out the foundation for a gentrification simulation. Thus, the authors have no concrete results. They do, however, explicitly describe the process by which model results are to be compared with empirical observations to validate the model's structure, behavior, and policy implications.
Diappi and Bolchi (2013)	Cellular automata and agent-based hybrid	Milan	This model consists of investors, small owners, and tenants as "active" agents, and buildings as "passive" or spatially fixed agents. Within the model, investors decide whether to generate new developments and owners decide on their level of property upkeep based on property- and neighborhood-level characteristics (with investor decisions framed around the familiar rent gap theory). These supply decisions are additionally influenced by two exogenous factors: macroeconomic cycles, and an "Alonso curve" rent gradient falling outward from the city center. Tenants make locational decisions within the resulting real estate market based on their individual preferences and abilities to pay.	The model is first validated by reproducing the observed spatial patterns of rent in Milan as they evolved from 1993 to 2003. The authors next use the model to predict future rent levels with and without a series of planned large-scale development projects. Finally, the authors use model results to posit rent gap dynamics as a potential explanation for cyclicality observed in aggregate rent levels.

Appendix F: Census Tract Datasets

Two census tract-based time series were developed with data on housing and demographic characteristics of non-transit and transit neighborhoods (areas within a half-mile radius of a fixed-rail transit station). As discussed below, we intended to use the Neighborhood Change Database (2010) to reconcile tract boundaries from 1980 to 2010; however, significant errors were found, and we instead went with the Brown Longitudinal Tract Database. Below we discuss some of the methods used and challenges faced when processing the datasets for the two regions.

While the team's original plan was to use Geolytics Neighborhood Change Database (2010) (NCDB) for this task, a major problem was encountered with the reported population counts in the NCDB. The problem that the team noticed from the onset is that Geolytics data revealed dramatic population changes for a number of census tracts in Los Angeles County and in the Bay Area that appeared to be anomalous. Populations were allocated to census tracts that generally do not have population or very few people. Table F.1 lists the tracts where the team spotted errors in the misallocation for Los Angeles. These were mainly the 9800 and 9990 tracts. The Bureau of Census provides the following definition for the tracts with code range in 9800s and 9900s:

> The code range in the 9800s is new for 2010 and is used to specifically identify special land-use census tracts; that is, census tracts defined to encompass a large area with little or no residential population with special characteristics, such as large parks or employment areas. The range of census tracts in the 9900s represents census tracts delineated specifically to cover large bodies of water. This is different from Census 2000 when water-only census tracts were assigned codes of all zeroes (000000); 000000 is no longer used as a census tract code for the 2010 Census (https://www.census.gov/geo/reference/gtc/gtc_ct.html).

Because of some of the inaccuracies in the NTDB, the team decided to use Brown University's Longitudinal Tract Data Base (LTDB) and its crosswalks to reconcile the changes in tract boundaries from earlier time period. The Longitudinal Tract Data Base provides a crosswalk that allows one to normalize census tract data from previous years (1970-2000) to 2010 census tract boundaries to maximize comparability across the study period. In addition, the LTDB also includes both a selection of short- (Full Count) and long-form (Sample Count) variables from the 1970-2000 Censuses that are already normalized to 2010 boundaries. For any additional variables not provided by the LTDB, we downloaded the original raw data (through FactFinder2 or Social Explorer) and used LTDB's crosswalk normalize to 2010 boundaries. The census tract data in the database were obtained from five sources: the Longitudinal Tract Data Base, the 1990 U.S. Decennial Census, the 2000 U.S. Decennial Census, the 2010 U.S. Decennial Census, and the 2009-2013 American Community Survey (ACS).

Table F.1: Total Population Counts

	Geolytics			*Decennial Census*
Census Tract	**1980**	**1990**	**2000**	**2010**
6037980001	1,308	1,702	1,879	0
6037980002	2,695	3,251	3,195	0
6037980003	619	805	668	2
6037980004	365	637	616	169
6037980005	3,327	3,434	3,490	0
6037980006	277	343	112	0
6037980007	904	1,221	794	0
6037980008	1,746	2,489	2,723	145
6037980009	8,659	9,035	8,875	14
6037980010	4,453	4,831	4,634	164
6037980013	12	13	16	59
6037980014	3,494	4,097	3,957	239
6037980015	4,858	5,956	5,191	554
6037980018	70	89	91	1
6037980019	7,801	7,667	8,128	173
6037980020	2,072	2,393	2,372	0
6037980021	3,366	5,273	6,025	33
6037980022	3,815	3,642	3,622	4
6037980023	1,753	2,315	2,592	8
6037980024	5,167	5,151	5,253	186
6037980025	2,614	2,639	2,837	0
6037980026	3,957	4,019	5,214	20
6037980028	2,029	2,380	2,198	4
6037980030	2	2	2	0
6037980031	7,719	9,220	8,894	1,262
6037980033	138	4,704	24	61
6037990100	7,141	7,850	8,698	0
6037990200	81,334	81,046	78,104	0
6037990300	28,450	33,523	30,442	0

While we did our best to include variables that are consistent across all three time periods, we did encounter some inconsistencies in some key variables. One example is the data on mobility. For our analysis on neighborhood mobility, we relied on the 2009-13 ACS data on "Geographical Mobility by Selected Characteristics in the United States" to examine the demographic characteristics and socioeconomic status of those moving into TOD areas. The information is available for persons who moved within one year. Unfortunately, there are no comparable datasets in the 1990 and 2000 Decennial Censuses. What is available from the two Censuses is a table on "Year Householder Moved into Unit". The universe, which is the householder, is different from the ACS mobility table, which reports estimates for persons. Another difference between the two tables is the reported mobility period. The ACS table provides estimates for those who moved within the last year, while the 1990 and 2000 dataset on "Year Householder Moved into Unit" reports estimates for those who moved within a year and three months. Additionally, the "Year Householder Moved into Unit" variable does not provide in details key characteristics of the mover that are important to this research. This includes information on the mover's income, race, and education attainment level. The ACS 1-year mobility data provides this information.

Another major problem that we encountered was the household income brackets that were not inflation adjusted across data sets, thus creating "artificial" shifts in distribution by income. We were able to partially address this by using Social Explorer, which allowed us to adjust the income brackets for inflation, but we do not know the reasonableness of their estimated reallocation.

The team observed inaccuracies with the Geolytics NCDB data in the Bay Area similar to those in Los Angeles County. For certain tracts, especially those near water bodies, significant discrepancies

existed for population counts in the NCDB. For instance, in a census tract in the northern county of Marin that underwent changing tract boundaries between 2000 and 2010, the Geolytics database indicated a population spike from 281 in 2000 to 7809 in 2010 (Figure F.1). Through our interviews and contact with our partner CBO, we learned that few if any new units were added to the area during that decade, and barring the building of an entirely new community, a population growth of 2679% in an existing community seemed unbelievable.

After contacting Geolytics in search of an explanation or data fix and receiving little of either, we sought an alternative source of data in Brown University's Longitudinal Tract Database (LTDB). Despite using seemingly similar methods, LTDB showed a gradual population growth from 1980. We therefore contacted Brown University to better understand the source of this difference, and they suggested that Geolytics used a less robust methodology, involving analysis of the street grid among other, less transparent methods. Although the LTDB appeared more robust for this single tract, we began to question the reliability of either dataset. Following UCLA's methodology (Ong et al. 2014), we prepared a third dataset using block data from 1990 and 2000 and assigning it to 2010 tract boundaries – a methodology similar to those used by both Brown University and Geolytics.

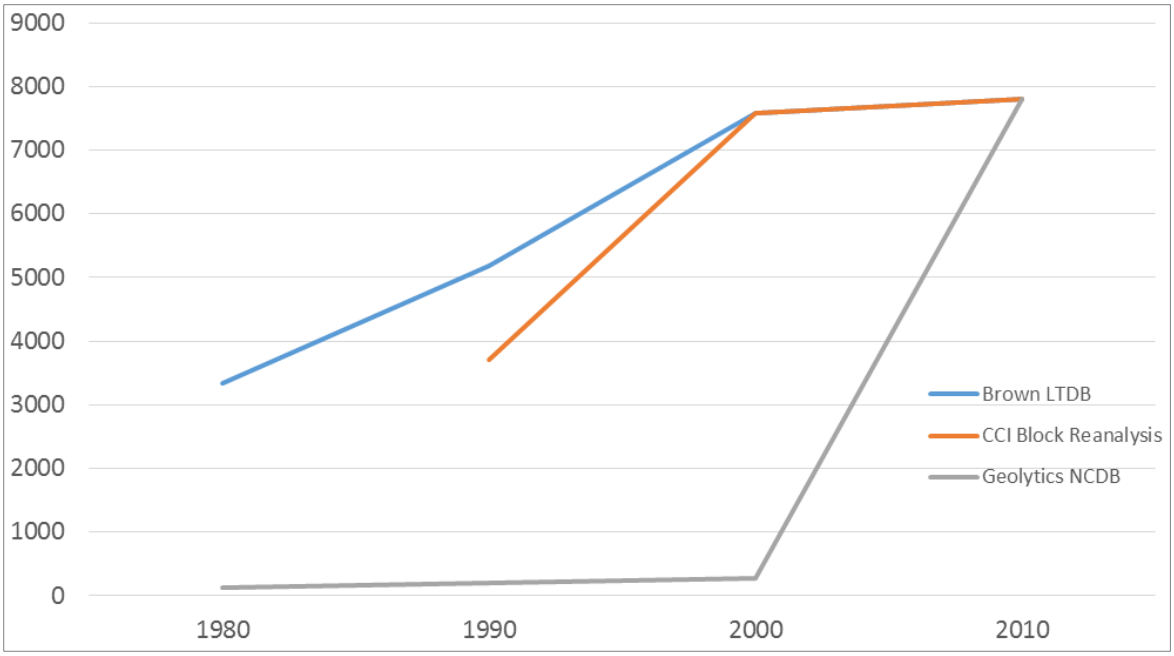


Figure F.1: Differences between Geolytics NCDB, Brown LTDB, and census block analysis for census Tract 1122.01, Marin County

When we compare the results from our analysis of block level population data, we find that Brown University's LTDB aligns well with our results for 2000, but not for 1990. In contrast, Geolytic's NCDB aligns better than Brown in 1990, but significantly worse in 2000 (Table F.2). As much of our analysis focuses on change since 2000, we chose to utilize the Brown LTDB dataset for the purposes of this research.

Table F.2: Correlation coefficients between Geolytics NCDB, Brown LTDB, and census block analysis for Bay Area tracts

	1990 Census Block Analysis	**2000 Census Block Analysis**
1990 Brown LTDB	0.696	-
1990 Geolytics NCDB	0.826	-
2000 Brown LTDB	-	0.993
2000 Geolytics NCDB	-	0.599

Appendix G: Parcel-Level Datasets

In an attempt to build a finer grain understanding of neighborhood change in the Bay Area and Los Angeles County, we set out to acquire datasets available at the parcel, rather than census tract, level. This involved purchasing Assessor and transaction data from Dataquick as well as acquiring data on subsidized housing from the U.S. Department of Housing and Urban Development (HUD) and the California Department of Housing and Community Development (HCD), and other data where available. One of the biggest limitations of this task was the uneven collection of data at the municipality level. Thus, while some cities have an abundance of fine-grain data (e.g., San Francisco), others collect very little or data is only available at the citywide level. Although this task originally envisioned acquiring housing discrimination complaints from the California Department of Fair Employment and Housing and with HUD, such data available to the public are only reported at the aggregated level (county or state), and the frequency is very low, limiting usefulness for this study. In addition to the assessor and subsidized housing data, we sought to acquire permits data, code violation data, and condo-conversion data to develop proxies for different types of displacement, as summarized in Table G.1, included in our original scope of work. Unfortunately, much of this data (especially permit and evictions data) was not actually available at the parcel level for our areas of analysis. The below sections detail the kind of data we were able to acquire, specifically paying attention to the assessor and transaction data.

Table G.3: Types of Displacement

Displacement Type	Sales	Permits-New	Permits-Rehab	Permits-Demo	Condo conversions	Code violations	Rent-Own conversions	Evictions	Subsidized housing
Economic	X	NA	NA						x
Physical	X			NA	x	NA	NA	x	x
Exclusionary	X	NA		NA	x		NA		x

NA = Indicates what is not available

G.1 Parcel Database for Los Angeles

The UCLA research team made several adjustments to Task 2H due to the unavailability of datasets in Los Angeles County. Numerous requests were made to obtain city data on building permits, demolitions, and code violations but the team was unsuccessful in acquiring these datasets. The fragmentation of Los Angeles County, which consists of a total of 89 different jurisdictions, made it difficult for the research team to track down all of the datasets.

Instead, the UCLA team had to rely on existing parcel datasets, which the team already has access to from other research projects. The UCLA team had access to a rich set of parcel data which goes as far back as 1999 and up to 2013. The parcel data was purchased from the Los Angeles County Assessor's office, which records data on parcel and structure characteristics as well as transaction information, including sale price and date of sale. Only the 2000, 2007 and 2013 parcel data were used for this project. Although not perfect, the Los Angeles County Assessor's parcel data was sufficiently complete to enable the team to leverage it in order to estimate the number of new construction projects, condo conversions, and properties that have gone through major renovations. Property sales data were derived from DataQuick (see description in Bay Area section below).

List of Substitutions
Permits-New ➔ Newly constructed building imputed from LA County Assessor dataset
Permits-Rehab ➔ Major renovations for single-family homes imputed from LA County Assessor dataset

Major Renovation/Improved Units

Our analysis of major renovations only looks at single-owner properties that were renovated between 2007 and 2012. The recording year was used as a proxy for the year the property was sold. We limit our sample to include properties that were sold in 2007 but remained with the same owner during the six-year period (2007-2012). To determine if the property was renovated, we looked at the changes in the property's improvement value between these two years. California's Prop 13 caps property taxes at 1% of the assessed value of a home at the time of purchase and prevents taxes from increasing more than 2% a year or more than the rate of inflation, whichever is less, unless there is a sale or major renovation. Anything beyond this would indicate some real improvement or renovation to the property.

For this study, a home is said to have been improved or experienced major renovation if it met the following criteria:

1. The percentage change in improvement value is greater than 10.7% (this is the rate of inflation between 2007 and 2012)
2. The amount in real dollar improvement is greater than or equal to $5,000 (improved value in 2012 less improved value in 2007 times 1.107)

We aggregated all properties that were identified as being improved or that experienced major renovation, up to the census tract level.

New Construction of Residential Units

The 2013 County Assessor Parcel data was used to estimate the number of new residential units. Parcels with the first character of the use code either zero or with use code ranging from 01 to 09 are classified as residential properties. Table G.2 provides a breakdown of the types of residential property and their use codes.

Table G.4: County Assessor Use Codes and Corresponding Residential Property Types

Use Code	Description
01	single-family residence (one unit)
02	two units
03	three units
04	four units
05	five or more units
06	modular home
07	mobile home
08	rooming house
09	mobile home park

Using the "Year Built" variable, we define units that were constructed between 2005 and 2013 as "new". Since the parcel data does not include a "number of total units" variable for multi-family properties, we had to estimate the number of units for each parcel classified as "Five or More Units". We did this by dividing the property's square footage by 900. The 900 square feet is the

average size for a multi-family unit in Los Angeles County. Table G.3 gives an example of our calculation. We aggregated all "new residential units" up to the tract level.

Table G.5: Estimating the Number of Units for Parcels Classified as 5 Units or More

AIN	Use Code	Yr. Built	Tract10	BG10	SQ.FT	Est. Units
XXXXXXXXXX	0501	2005	265510	1	77,329	85

Estimated # of Units = Building sq. ft. / 900
77,329/900 = 85 units

Condo Conversion

Our analysis of condo conversions identified apartment units that were converted to condos between 2003 and 2013. Since the parcel data does not contain a variable denoting when the property was converted, we had to estimate this by merging together the 2003 and 2013 parcel datasets using the property's Assessor Identification Number (AIN). Only parcels with the use code 10E (condo conversion) were kept in the dataset. If a parcel existed in 2013 but not in 2003 then we can assume that the conversion occurred between 2000 and 2013. If the parcel existed in both the 2000 and 2013 datasets then it is most likely that the conversion took place before the 2003 period. When a unit is converted from apartment to condo, it is given a new AIN. Prior to the conversion, the unit would not have had its own AIN, but instead the whole apartment structure itself would have had one unique AIN for the property.
Table G.4 provides a simple cross-tab between the 2007 and 2013 parcels. There were 47,919 parcels that were identified as condo conversion in 2007 and 52,890 in 2013. A total of 47,115 existed in both 2007 and 2013 parcel datasets which would indicate that the conversion took place prior to 2007. It is estimated that 4,971 units were converted between 2007 and 2013 (AIN contained in 2013 but not in 2007). The number of condo-converted units were aggregated up to the tract level.

Table G.6: Simple Cross-Tab of 2007 and 2013 Condo Conversion Data

	In_2013		Total
In_2007	**0 (No)**	**1 (Yes)**	
0 (No)	0	4,971	4,971
1 (Yes)	804	47,115	47,919

G.2 Parcel Database for the Bay Area

No consistent parcel level data was available for all Bay Area counties; therefore, the UC Berkeley team relied on the parcel data purchased from Dataquick for the construction of the database. A significant amount of data processing and cleaning was necessary to extract relevant indicators from this dataset. Data was purchased for current assessor data (equivalent to 2013), historical assessor data, which dates back to 2004, as well as transaction data, which dates back to 1988. From these datasets we intended to extract data on the frequency of sales and sales price of residential properties, land use changes including condominium conversions, new construction, and major renovations. Of this list, we were only able to extract the first two datasets, as the remaining indicators proved to be unreliable.

Transaction Data

After following the data cleaning procedures described in the Appendix to remove duplicates, outliers, non-monetary transactions, public agency sales (which could distort the calculation of sales values) among other cleaning procedures, we calculated residential sales price per square foot and then estimated the median sales price (and number of sales) per census tract. This data allows us to better understand the turnover and value appreciation by neighborhood.

Land Use Changes

For land use changes, we looked at the change in land use codes for each property between 2004 and 2013. The major limitation of this was that we were only able to match properties that did not change parcel numbers; this is a limitation because it is very common for parcel numbers to change, especially if any subdivision or parcel assembly has happened. In addition, Dataquick could not provide us with an algorithm for the changes in assessor numbers to match between years, as they argued that each County uses its own numbering system, which can change over time. Thus the land use change (including condominium conversions) was determined to be significantly underestimated from this technique. As an example, Table G.5 displays the counts of the total conversions between 2006 and 2011 (the last year for which we had reliable land use data). As a point of reference, there are approximately 2,206,509 parcels in the nine-county Bay Area. If this method of comparison were correct, land use changes would have only occurred on less than 2.5% of all parcels over a five-year period, which seems a bit low. Furthermore, when aggregating at the tract level for the purposes of modeling, these land use changes become virtually insignificant.

Table G.7: Land Use Changes between 2004 and 2013

From \ To	Agricultural	Commercial	Industrial	Residential	Miscellaneous	Vacant
Agricultural	X	71	37	689	125	383
Commercial	2	X	568	12,504	408	601
Industrial	36	567	X	1,117	154	310
Residential	335	1,175	78	X	641	2,851
Miscellaneous	282	6,279	214	1,839	X	1,248
Vacant	105	734	237	21,298	565	X

Similar results were found for condo conversions: according to this method only 6,143 parcels converted from other types of residential uses to condominiums. Based on the layouts of the current assessor data, we know that each condominium has a unique Assessor Parcel Number (APN), thus it is highly unlikely that this method of matching parcel numbers will give us an accurate portrayal of the total number of condominium conversions in the Bay Area.

New Construction

One method for calculating new construction from the parcel data is to use the field for "Year Built" by building and the number of residential units on site. However, the units in many cases are counted many times, especially in buildings of condominiums where each condominium has a unique parcel number. Thus when summed, for instance in a condo building of 20 units, the total would equal 400 units because total number of units is replicated each time. Number of units appears to be inaccurate even for non-condo buildings. For instance, in San Francisco, according to the Dataquick Assessor tables, there were 2,298 units developed over the period 2007-2013;

however, the City claims to have permitted 3,697 units, 1,606 were reported as having been built during that same time period in their Housing Element Annual Reports to HCD. When comparing data for San Francisco, where we have access to additional assessor data and land use data, the Dataquick assessor data claims that only 2,156 units were built during the 2007-2013-time period, whereas it appears that they permitted 16,826 units, and when we looked at assessor data that San Francisco Planning department cleaned, it appears that 7,545 residential units were developed during that time period. Because of these large discrepancies, we decided to abandon Dataquick as a source of data for new construction and instead rely on census data to estimate new units.

Major Renovations

Similar to the analysis described for the Los Angeles Region, the UC Berkeley team set out to analyze land-to-improvement values as a proxy for major renovations. Upon calculating and mapping these ratios for the Bay Area, however, it appeared that several counties applied a constant ratio for calculating improvement values. As illustrated in **Error! Reference source not found.**, virtually all of Alameda, Solano, and Sonoma counties have the same median improvement-to-land value for 2013 when estimated at the tract level. This led us to assume that the improvement value was not worth including in the analysis at the regional level.

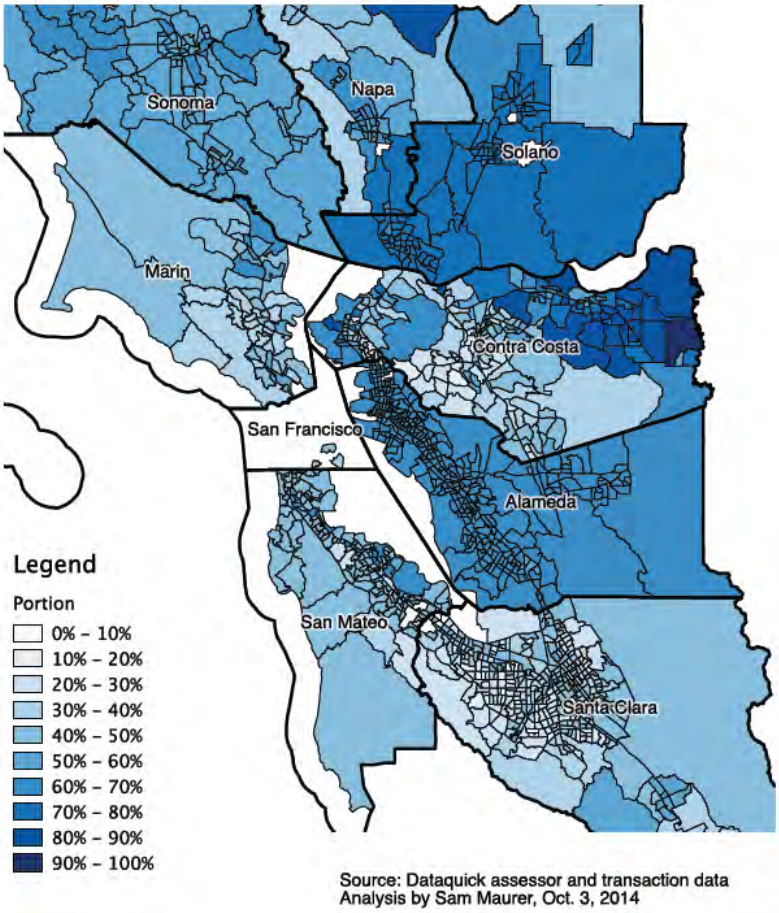


Figure G.1: Improvement to Land Value Ratio for 2013 in the Bay Area

Affordable Housing

We were able to obtain a detailed dataset on subsidized housing from the non-profit California Housing Partnership Corporation. This data was primarily derived from the U.S. Department of Housing and Urban Development Low-Income Housing Tax Credits (HUD LIHTC) datasets, but also contains buildings developed with other federal funding sources as well. This dataset allows us to calculate the number of subsidized housing units constructed by year and location, although it does exclude any units developed exclusively with funding (e.g., local redevelopment agency projects).

Parcel Data for San Francisco

Given the limited availability of parcel-level data at the regional scale, we sought to obtain more detailed data for the one county in the Bay Area that collects and makes public very detailed datasets: San Francisco County. For this county we were able to obtain the following datasets at the parcel/address level:

1. Fault and no-fault evictions since 1997
2. Below Market Rate units built under the City's Inclusionary Housing program since 1992
3. Housing permits for condominium conversions and for renovations since 1990
4. New housing construction from the local assessor/land use tables since 1990
5. Housing code violations since 2008

Appendix H. Data cleaning Protocol for DataQuick Assessor and Transaction Data

PART 1 – GENERAL FILTERS		
Issue	**Analysis**	**Final criteria (SQL syntax)**
Remove transactions from outside the 9-county San Francisco Bay Area		1. mm_fips_muni_code IN (1,13,41,55,75,81,85,95,97)
Remove transactions from prior to 1988 since the dataset is supposed to only go back to 1988 sales		2. (s.sr_date_transfer/10000) >= 1988
Remove non-residential transactions	• These represent less than 10% of state-wide transactions provided by Dataquick, and only 2.2% after applying the other data filters	3. SUBSTRING(a.use_code_std FROM 1 FOR 1) = 'R'
PART 2 – LINKING TRANSACTIONS TO ASSESSOR DATA		
Issue	**Analysis**	**Final criteria (SQL syntax)**
Basic identifiers have to be present in order for us to link transactions to census tracts	• Census tracts are listed in the assessor table but not in the transactions table, so we match transactions to assessor records using the property id • 8% of transactions have a missing or 0 property id, and 0.3% of current assessor records are missing a census tract • These transactions will disappear automatically from the final statistics, but it's probably best to explicitly remove them so they don't affect how we're judging the other data cleaning filters • There don't seem to be any zero values for the census tract	1. sr_property_id IS NOT null 2. sr_property_id > 0 3. sa_census_tract != '' (varying syntax due to integer vs. character data fields)
Historical assessor data is sporadically incomplete, so it's probably best to pull square footage and use codes from the current assessor table, even though they could have changed or the property may no longer exist	• Historical assessor data is missing for several entire counties in 2011 and 2012 • In general, the historical tables are also less complete than the current assessor table • When we match transactions to the next-year assessor tables, 1%–10% are missing, but when we match them to the current table, only < 1% are missing	1. sales.sr_property_id = assessor.sa_property_id for matching the square footage and use codes
Square footage and use codes have to be present in order to calculate final statistics	• After implementing the primary filters (arms-length, positive transfer value, property match in the assessor table), 3.5% of the Bay Area transactions have missing or zero square footage and < 1% are missing a use code • We'll proactively remove these from the "clean" data tables	1. sa_sqft IS NOT null 2. sa_sqft > 0 3. use_code_std != ''

PART 3 – PROPERTIES OF INDIVIDUAL TRANSACTIONS		
Issue	**Analysis**	**Final criteria (SQL syntax)**
Dataquick's arms-length flag may not be accurate, because it includes transactions with a transfer value of 0 and excludes some with a transfer value > 0	• Cross-tabulation of transfer value and arms-length flag: **(A)** 38% - value > 0 and arms-length **(B)** 48% - value = 0 and non-arms-length **(C)** 12% - value > 0 and non-arms-length **(D)** 2% - value = 0 and arms-length • Group D in particular calls Dataquick's methodology into question, but examples from Group C look ok (sales to trusts and other things we should be filtering out) • All in all, it seems best to remove transactions Dataquick classifies as non-arms-length rather than trying to catch all of them using other filters • We have to remove transactions with missing or 0 transfer values anyway, in order to calculate meaningful price statistics	1. sr_arms_length_flag = '1' 2. sr_val_transfer IS NOT null 3. sr_val_transfer > 0
Only include resale and subdivision transaction types	• For transactions with value > 0: 89% = R (resale) 10% = S (subdivision) 0.5% = C (construction) 0.5% = T (timeshare) none refinance, none missing	1. sr_tran_type = 'R' OR sr_tran_type = 'S'
Possibly should filter by transaction document type	• For transactions with value > 0: 46% = G (grant deed) 6% = U (trustees deed) 1% = Q (quitclaim) negligible H, W, T 47% missing • Too many missing values to use this field	1. NONE
Only include transactions representing full sale amount	• For transactions with value > 0: 79% = F (full) 3% = P (partial, excluding liens etc.) 4% other (C, U) 14% missing (data dictionary indicates missing = assumed full) • Overall, the data in this field doesn't seem reliable enough to use	1. NONE
Remove trust transactions that Dataquick misclassified as arms-length	• Pulled a sample of matching records and the filter works as expected	1. sr_buyer NOT ILIKE '% trust%' 2. sr_seller NOT ILIKE '% trust%' (case-insensitive pattern matching where % matches any string of zero or more characters)
Remove public agency transactions because they're often not at market prices	• Filter works as expected, with > 90% of the matches being public agencies • The false positives are entities with names like "First National Bank Daly City," but there doesn't seem be to any easy way to improve the pattern matching	1. As above, with "county," "city," "agency," "redevelopment"

PART 4 – SETS OF RELATED TRANSACTIONS		
Issue	**Analysis**	**Final criteria (SQL syntax)**
Sets of transactions involving the **same property id** on the same day often represent different parts of a single sale (refinance, multiple loans, trust transactions, one to many owners or vice versa, etc.)	• After applying all the prior filters, these duplicates represent about 1.0% of the remaining transactions (0.6% same price, 0.4% differing prices) • The same-price duplicates are *mostly* transactions involving intermediaries, and the differing-price duplicates are *mostly* multi-part transactions, but the patterns aren't consistent enough for us to get reliable prices from these records	1. After applying all the prior filters, group remaining transactions by sr_property_id and sr_date_transfer 2. Remove all these transactions
Sets of residential transactions on a single day with the **same document number but differing property id's** represent subdivision or condo building sales, which often have incorrect price or square footage data	• After applying all the prior filters, these duplicates represent about 1.2% of the remaining transactions • (We have to group transactions by county here because document numbers can repeat across jurisdictions) • Dataquick reps informed us that for residential condo and subdivision transactions involving multiple property id's, they record the total transaction price separately for each unit • This looks correct based on the data, but it's hard to be certain	1. After applying all the prior filters, group remaining residential transactions by mm_fips_muni_code, sr_doc_nbr_fmt, and sr_date_transfer 2. If the dollar amounts match, only keep one of the transactions, and calculate price per square foot as transaction price / total square footage 3. If the dollar amounts differ, calculate the price per square foot normally
PART 5 – PRICE OUTLIERS		
Issue	**Analysis**	**Final criteria (SQL syntax)**
Identify and filter out significant outliers in price per square foot, because these are likely to be errors that would bias aggregate calculations	• We adjust prices to 2010 dollars using national headline CPI for the calendar year of the transaction[2] • The residential price cutoffs work out to $1054 for Alameda, $794 for Contra Costa, $1788 for Marin, $1577 for Napa, $2014 for San Francisco, $1773 for San Mateo, $1354 for Santa Clara, $729 for Solano, and $1260 for Sonoma, in 2010 dollars	• After applying all prior filters, adjust the remaining prices for CPI inflation • Remove the top 0.1% of transactions by price per square foot, separately for each county

[2] http://www.bls.gov/data/inflation_calculator.htm

Appendix I. Sources and Definitions of Affordable Housing Data for Section 2E.2

In Los Angeles, we define affordable rental units as units with median gross rent of less than 80% of the county median; data comes from the 2000 Decennial census and the 2009-13 five-year ACS. For the Bay Area, we define these units as those where low-income households are paying less than 30% of their income on rent. Condo conversions include apartment units that have been converted to condos between 2003 and 2013. Data for Los Angeles comes from the Los Angeles County Assessor's office. Data on Section 8 units is derived from the U.S. Department of Housing and Urban Development's (HUD) Picture of Subsidized Households for years 2000 and 2013. Section 8 data from 2000 was adjusted to 2010 boundaries using Brown University's Longitudinal Tract Data Base's (LTDB) crosswalk. For Los Angeles, the LIHTC data comes from the California Tax Credit Allocation Committee (CTCAC). In the Bay Area, this data is derived from the California Housing Partnership Corporation that verified HUD and state Housing and Community Development (HCD) data and includes some non-LIHTC federally and state subsidized housing units (e.g., project-based Section 8). The placed-in-service variable was used to identify units constructed up to 2000 and 2014. Ellis Act evictions data, which primarily includes tenants evicted due to the conversion of rental units to condos, comes from the Los Angeles Housing Department and is only available for the City of Los Angeles. All units are normalized as fraction of the housing stock (divided by total housing units). The change represents the proportion after minus the proportion before.

Appendix J. Ground-Truthing Methodology for the SF Bay Area

Demographic and housing indicators associated with processes of residential displacement, and/or thought to influence susceptibility to such processes (Chapple 2009) were collected to each case study area. In addition to the secondary datasets, we used qualitative data that included archival research of newspaper articles, planning documents, and academic literature and interviews with community stakeholders based on questions regarding demographic, housing, and commercial change.

Blocks for the "groundtruthing" visual survey were selected by analyzing census Block data from 2000 and 2010 for demographic change, as well as data on sales, price increases, and new developments from 2010-2015 to determine property turnover and change. Eligible blocks were vetted with local stakeholders to narrow the candidates down to three to five that had experienced significant change over the past five to 10 years. The data gathered through this groundtruthing observation tool was subsequently compared to census figures and sales data from the county Assessor's Office to verify, at a high level, the stories the secondary data and stakeholder interviews are telling about change in these areas.

We next present the observation tool developed for this groundtruthing exercise followed by detailed descriptions of each case study groundtruthing neighborhood and the results from comparing field observations with secondary data and interviews.

WORKSHEET: Visual Demonstration of Neighborhood Change

Instructions: Physically walk predetermined neighborhood blocks and note evidence of deterioration or improvement using Section One. Parcel or building specific information should be collected in Section Two. Each block should named according to its main corridor (indicated on your map as the street with parcels on both sides). Bring a camera to take a photograph of each building.

**One whole worksheet should be completed for each block section*

Block Name: _____ **Observer:** _____

Physical Observation date and time : ____/____/_____ **Start** ___:___ **AM/PM** **End** ___:___ **AM/PM**

SECTION ONE: Block Overview and initial impressions

1. The primary land use for the block face is:
   - □ Residential
   - □ Commercial
   - □ Institutional (school, hospital, churches):
   - □ Industrial
   - □ Other: _____

2. Public investment + existing public infrastructure:
   - □ transit stops
   - □ municipal street lighting
   - □ on street residential permit parking
   - □ street furniture (including parklets)
   - □ bike racks
   - □ public trash cans
   - □ parking pay machines
   - □ newly paved streets
   - □ Other: _____

3. Describe any visible people, noting race or ethnicity, age, number, and activities they might be engaged in:_____

4. The # of signs discouraging disorder such as neighborhood watch, anti-littering/loitering/drug use/vandalism/graffiti: _____

5. Physical disorder such as garbage, litter, graffiti, or vandalism by degree of observations:

1	2	3	4	5
no disorder	very few signs of disorder	noticeable vandalism	mostly vandalized or littered	completely vandalized or littered

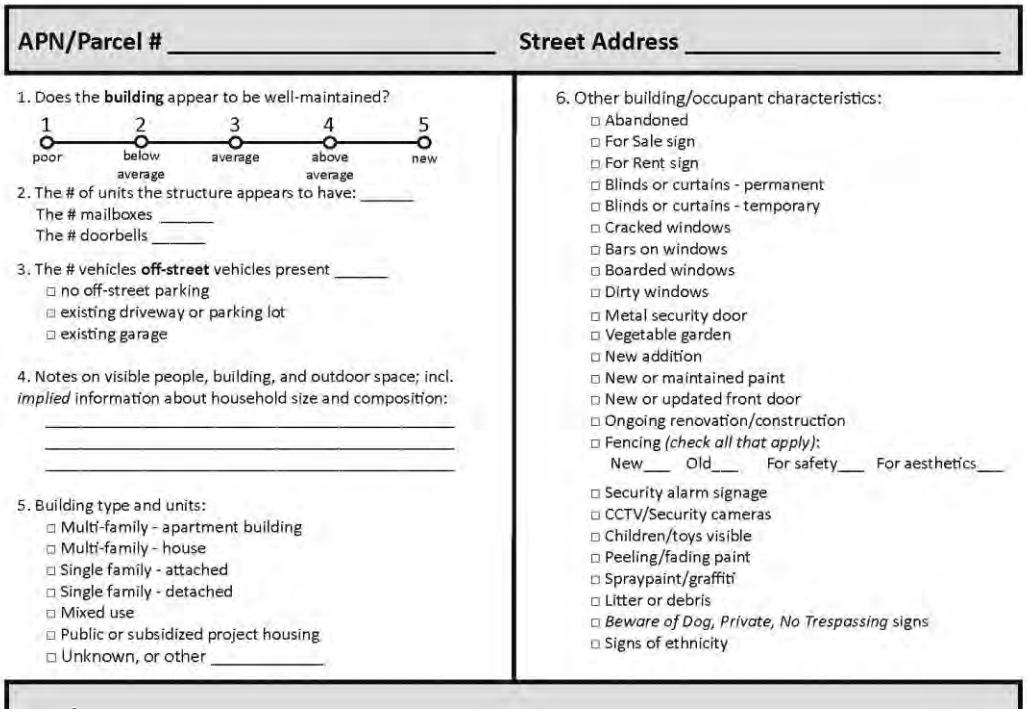
6. Please describe indicators of international or immigrant presence (note ethnicity, signs in a foreign language, or locally-owned foreign/ethnic business).

7. Additional notes on block overview: _____

SECTION TWO: Block/Parcel Data

**located on the following pages*

Using your pre-printed parcel map, carefully walk the block and record your observations for each building. Allow for ~1.5 hours of field time. Be sure to take a photograph of each building for comparison with past year data later.



APN/Parcel # _____ Street Address _____

1. Does the **building** appear to be well-maintained?

1 poor — 2 below average — 3 average — 4 above average — 5 new

2. The # of units the structure appears to have: _____
   The # mailboxes _____
   The # doorbells _____

3. The # vehicles **off-street** vehicles present _____
   - □ no off-street parking
   - □ existing driveway or parking lot
   - □ existing garage

4. Notes on visible people, building, and outdoor space; incl. *implied* information about household size and composition:
   _____
   _____
   _____

5. Building type and units:
   - □ Multi-family - apartment building
   - □ Multi-family - house
   - □ Single family - attached
   - □ Single family - detached
   - □ Mixed use
   - □ Public or subsidized project housing
   - □ Unknown, or other _____

6. Other building/occupant characteristics:
   - □ Abandoned
   - □ For Sale sign
   - □ For Rent sign
   - □ Blinds or curtains - permanent
   - □ Blinds or curtains - temporary
   - □ Cracked windows
   - □ Bars on windows
   - □ Boarded windows
   - □ Dirty windows
   - □ Metal security door
   - □ Vegetable garden
   - □ New addition
   - □ New or maintained paint
   - □ New or updated front door
   - □ Ongoing renovation/construction
   - □ Fencing *(check all that apply)*:
     New___ Old___ For safety___ For aesthetics___
   - □ Security alarm signage
   - □ CCTV/Security cameras
   - □ Children/toys visible
   - □ Peeling/fading paint
   - □ Spraypaint/graffiti
   - □ Litter or debris
   - □ *Beware of Dog, Private, No Trespassing* signs
   - □ Signs of ethnicity

East Palo Alto

East Palo Alto is a small city in San Mateo County located about halfway between San Jose and San Francisco. With a population of about 29,000, East Palo Alto is bordered by the affluent cities of Palo Alto and Menlo Park. A young city, it was incorporated in 1983.

From 1980-2010, the case study area[3] experienced several demographic changes:

- Population increased by 22%.
- Latinos increased from 14% to 63% of residents, while African-Americans decreased from 55% to 16% of residents.
- Housing cost burdens increased, from 25% of renters and 17% of owners being cost-burdened, to 51% and 49%, respectively.
- Overcrowding is a problem: 29% of housing units have more than one person per room.

East Palo Alto Ground-Truthing Results

On November, 14, 2014, two researchers from the UC Berkeley surveyed three blocks in the area: 2018, 4002, and 4003. On January 10, 2015, one of the same researchers, along with three community members, surveyed blocks 2002 and 5010.

At the parcel level, land use and number of units were very well-matched between assessor data and visual observation. The datasets also aligned in terms of level of investment and stability. One

[3] Defined as census tracts 6118, 6119, 6120, and 6121, which cover the city in its entirety and encompass a small area outside it, as well.

thing not captured by secondary data but clear from visual inspection was a perceived lack of safety on most of the blocks.

There is not much variance among the blocks. Most have some sign of change—either high percent have sold, high percent have changed tenure, or property values appear to be rising—and also have signs of potential stability such as permanent curtains in the windows or children's toys in the yard in addition to some signs of safety concerns.

Tables J.1-J.6 summarize secondary and ground-truthing data for the blocks; this data is analyzed below in the block-by-block comparisons.

Table J.1: Total Ground-Truthed Parcels for East Palo Alto

Block and Tract	# Parcels Ground-truthed
Block 2002, Tract 6119	38
Block 2018, Tract 6120	23
Block 4002, Tract 6121	8
Block 4003, Tract 6121	9
Block 5010, Tract 6121	21

Table J.2: Sales History and Assessed Value of Residential Parcels for East Palo Alto

Block	Median Year of Construction	Median Year of Last Sale	Percent Sold 2010-2014	Median Sale Price	Median Sale Price Per Square Foot	Assessed Value Per Square Foot (2013)
2002	1954	2006	28%	243,000	$162.00	$185.00
2018	1950	1999	33%	155,000	$179.00	$176.00
4002	1949	2010	88%	1,130,541	$318.00	$276.00
4003	1952	2010	82%	777,041	$375.00	$241.00
5010	1961	2010	68%	1,890,367	$360.00	$363.00
San Mateo County	1958	2001	16%[4]	$449,000	$168	$220

Source: Dataquick, 2014. These figures refer to all parcels in the area, including non-residential uses.

Table J.3: Assessor Data for East Palo Alto

Block	# Matched Parcels (2004-2014)	Average Change in Improvement to Land Ratio (2004-2014)	% Change Owner Occupancy (Rent to Own or Own to Rent, 2004-2014)	Average Change in Sq. ft. (2004-2014)
Block 2002	39	-11.7%	17.9%	1.8%
Block 2018	23	4.2%	21.7%	-2.2%
Block 4002	8	-30.3%	0.0%	1.7%
Block 4003	9	-49.1%	22.2%	2.4%
Block 5010	21	-36.7%	9.5%	2.4%

Source: Dataquick, 2014. These figures refer to all parcels in the area, including non-residential uses.

[4] Percent Sold 2010-2013.

Table J.4: Census Data 2000 – 2010, East Palo Alto

Block	Population Growth (% change)	Average Household Size (% change)	Percent Change in Percent White	Percent Change in Percent Black	Percent Change in Percent Hispanic	Percent Change in Percent Family Households	Percent Change in Percent Rental Units
East Palo Alto	39.%	-8.5%	1.8%	-9.0%	7.6%	-0.3%	8.6%
Block 2002	26.1%	0%	5%	-12%	14%	-5%	-20%

Source: Census, 2000-2010. Note: the missing blocks did not have consistent borders.

Table J.5: Census 2010 Demographics, East Palo Alto

Block	Population	Average Household Size	Percent White	Percent Black	Percent Hispanic	Percent Family Households	Percent Rental Units
2002	147	4.58	36%	18%	61%	82%	26%
2018	142	4.73	19%	6%	82%	90%	67%
4002	277	4.29	59%	8%	88%	73%	100%
4003	273	3.07	49%	5%	85%	62%	100%
5010	1434	2.92	36%	12%	68%	55%	100%

Source: Census, 2010.

Table J. 7: Summary of Parcel Matches and Primary Land Use, East Palo Alto

Block	Primary Land Use, based on Ground-truthing data	Percent Land Use Matched	Total Number of Units on Block		Percent of Parcels whose Number of Units match between Assessor Data and Visual Observation
			Assessor Data – Dataquick	*Visual Observation Ground-truthing*	
2002	Single-family residential	100%	39	44	100%
2018	Single-family residential	87%	28	34	96%
4002 & 4003	Multi-family residential	88%	200	155	94%
5010	Multi-family residential	90%	457	517	95%

Note: Percent Land Use Matched and Percent Units Matched take as their denominator only those parcels for which a land use or number of units was indicated by both assessor data and ground-truth data.

Comparison of East Palo Alto Data Analysis with Stakeholder Interviews

Aall of the case study tracts in East Palo Alto were lower-income; two were not losing low-income households, while two were had characteristic that were associated with gentrification and displacement outcomes identified in sections 2D and 2E, leading us to classify them as being at risk of gentrification and displacement.

Stakeholder interviews paint a slightly different picture. Of the three tracts east of Highway 101 (6118, 6119, 6120), stakeholder feedback indicates a greater risk than the secondary data presents of gentrification and displacement. There is concern, even with East Palo Alto's strong renter protections, that the foreclosure crisis—which affected the many single-family owner-occupied

homes—and pressures in the surrounding areas could lead to gentrification or displacement in these areas. Plus, these renter protections are weakened in these areas since much of the housing is single-family homes, to which rent control does not apply.

In terms of the tract west of Highway 101 (6121), stakeholders described many issues that make them view this area as undergoing displacement, in contrast to what the secondary data may lead us to believe. This neighborhood is known as the Westside. Figure J.1 shows that the area contains the majority of the city's multi-family rental housing stock. Over half of the city's rent-controlled units are located on the Westside, the majority of which are owned by a single landlord, Equity Residential (EQR). In recent years, conflicts between tenant protections and landlord interests on the Westside have been the focus of major attention from the city, and led to significant instability for Westside residents. In 2008, Page Mill Properties, the former owner of the multi-family housing stock now owned by EQR, was involved in approximately 11 lawsuits with the city.

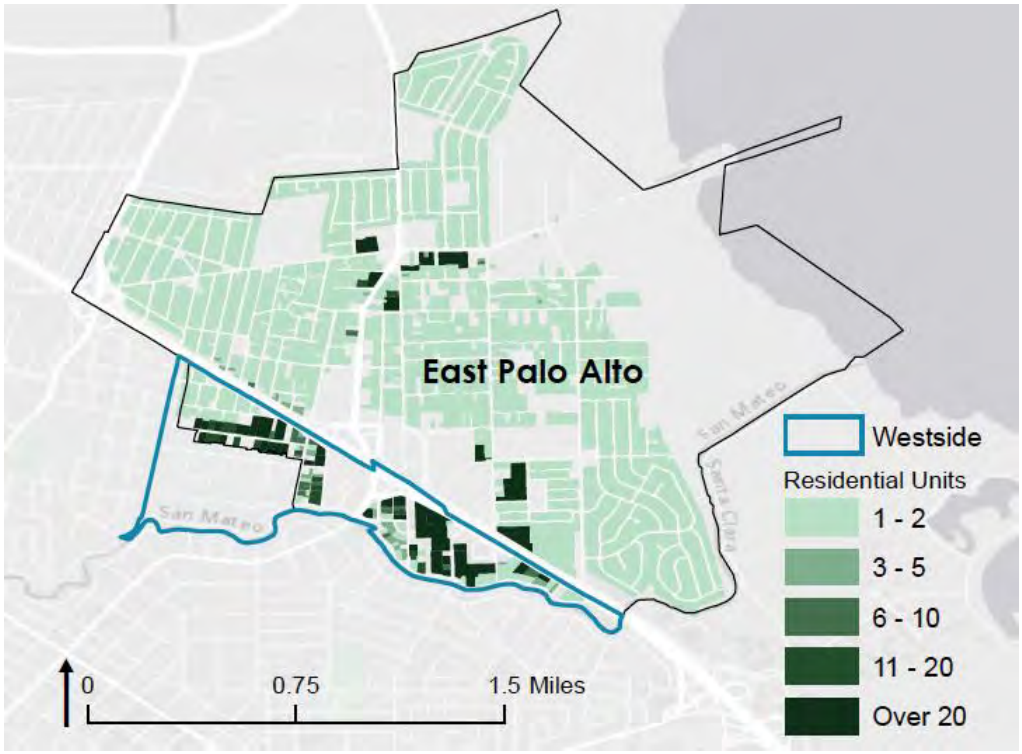


Figure J.1: Densities in East Palo Alto: Note the Westside Outlined in Blue

Just a year after Page Mill Properties began purchasing buildings in the Westside in 2006, tenants began complaining of harassment and steep rent hikes (Berstein-Wax 2010). In 2007 the company evicted 71 people. In 2008 another 99 people were evicted, an eviction rate 7.5 times greater than that of the rest of San Mateo County (Berstein-Wax 2009). When Page Mill defaulted on its loans and went into foreclosure in 2009, Wells Fargo took over the properties. The bank then sold the foreclosed portfolio to EQR, the largest publicly traded landlord in the United States, in December of 2011. After this acquisition, EQR now owns about half of the city's apartments, and two-thirds of its rent-controlled apartments and 15% of the total low-rent apartments in the County. The company issued 706 three-day eviction notices in the first six months of managing the apartments (LeVine 2014). Tenant organizers saw the excessive use of three-day notices as a form of harassment. It is

unclear however, how many of the eviction notices issued actually led to households leaving their apartments, and available sources of data are limited in this regard.

Direct evictions are also not the only pressure that residents of EQR apartments experience. The City of East Palo Alto was notified in 2013 that EQR was illegally painting curbs red in an effort to reduce parking around their buildings (Green 2013a). Advocates see this manipulation of parking supply, a precious commodity in East Palo Alto, as another form of harassment.

These issues in the Westside are not well-captured by secondary data. In this way, the ground-truthing exercise helps to illuminate other issues—either more recent than available data or just not captured in secondary data—that could be leading to displacement.

Conclusion

East Palo Alto is distinctive for its government's commitment to ensuring the city remains affordable to low-income households, and for a strong legacy of community organizing that holds the city accountable to that commitment. While demographic data on its own shows few signs of gentrification and displacement, the experience of residents, activists, and city staff on the ground, show that housing pressure is very real here. The city is home to many low-income households already burdened by their housing costs, a vulnerability that is compounded for the large number of undocumented immigrants believe to have established households here. With much of the city's rental housing owned by a single landlord, there are few alternatives for tenants facing evictions.

Marin City

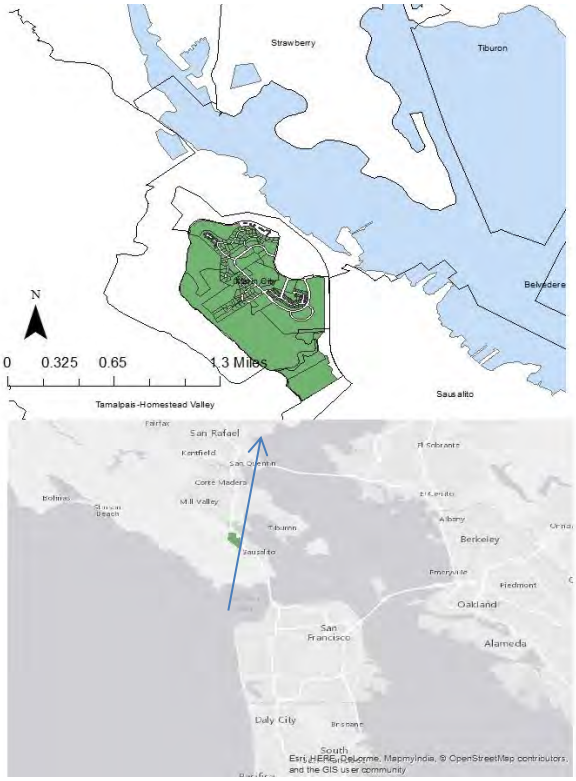


Figure J.2: Marin City Case Study Area (Census Tract 1290) in Green, with Vicinity Map

Marin City, located north of San Francisco in Marin County, is a small, historically African-American suburban community. It is a bounded by the affluent cities of Sausalito to the south and Mill Valley to the north, Highway 101 to the east and the hills of Marin County to the west (Figure J.2). The entire area is quite small—it is only 1.2 miles across. It hosts high-rise public housing, townhouses, single-family homes, and a shopping center, all with a suburban feel and views of the Bay. The area is also host to older homes occupied by a diverse population in the hills and a significant stock of subsidized housing—604 units. Nearly half of these are in a collection of high-rise buildings called Golden Gate Village, which feature great views out on to Richardson Bay, a small inlet of the San Francisco Bay.

Over the last 30 years, Marin City has experienced gradual change: population has grown, the proportion of African-Americans has decreased, and median income and educational attainment have increased. Yet even with these changes, other aspects of the community—like homeownership—have remained stable. While the area has been stable in its housing stock overall, it has experienced significant commercial displacement: for instance, a popular weekly flea market was discontinued in 1996 when a large shopping center was developed.

Marin City Ground-Truthing Results

On November 11, a researcher from UC Berkely performed the ground-truthing analysis in Marin City (see selected blocks, Figures J.3). The researcher walked the blocks there with a lifelong resident, and a former resident who directs a community organization.

The secondary data sets and ground-truthing data tell the same basic stories for each block. Parcels generally matched in terms of land uses and number of units, and the total number of units was fairly consistent across three data sources (Table J.7).

Finally, the quality and age of buildings were comparable between secondary sources and ground-truthing methods; however, safety perception and public investment cannot be ascertained from the secondary data sources; only from ground-truthing. Tables J.7-J.10 summarize the secondary and ground-truthing data that are used below in block-by-block comparisons.

Figure J.3: Map of Marin City with Three Ground-Truthing Blocks in Green

Note: All of the blocks fall in Marin County Census Tract 1290.

Table J.7: Parcel Mismatch among Datasets for Marin City

Block	# assessor parcels matched to ground-truth parcels, of total assessor parcels	# ground-truth parcels matched to assessor parcels, of total ground-truth parcels
1000	31 / 54	32 / 33
1004	38 / 50	38 / 49
1005	33 / 34	34 / 34

Table J.8: Sales History and Assessed Value of Residential Parcels in Marin City

Block	**Median Year of Construction**	**Median Year of Last Sale**	**Percent Sold 2010-2013**	**Median Sale Price**	**Median Sale Price Per Square Foot**	**Assessed Value Per Square Foot (2013)**
1000	1965	2005.5	30%	$396,000	$286	$219
1004	1997	2001.5	20%	$245,750	$163	$195
1005	1996	2000.5	26%	$229,000	$154	$197
Marin City	1979	2002.5	21%	$287,500	$207	$193
Marin County	1973	2003	22%	$552,000	$307	$258

Source: Dataquick, 2014

Table J.9: Indicators of Marin City Neighborhood Change: Census Data/Demographics, 2000-2010

Block	Population Change (Percentage Change)	Average Household Size (Percentage Change)	Change in Percent White[5]	Change in Percent Hispanic	Change in Percent Black	Change in Percent Family Households	Change in Percent Rental Units
1000	-24%	1%	55%	1085%	-33%	-11%	-5%
1004	62.6%	33%	407%	1715%	-71%	21%	-15%
1005	-85.7%	-15%	16%	-55%	-11%	3%	-74%
Marin City	-6%	Not Available	-25%	88%	0%	11%	17%
Marin County	2%	1%	-7%	40%	-7%	1%	3%

Note: Marin City is defined as Marin County Census Tract 1290. Source: US Decennial Census 2000, 2010

Table J.10 Summary of Parcel Matches and Primary Land Use in Marin City

Block	Primary Land Use, based on Ground-truthing data	Percent Land Use Matched	Total Number of Units on Block			Percent of Parcels whose Number of Units match between Assessor Data and Visual Observation
			Assessor Data – Dataquick	Visual Observation Ground-truthing	Census Data: Total Housing Units – 2010	
1000	Single-family residential	74%	81	71	87	65%
1004	Single-family residential	97%	105	104	133	95%
1005	Single-family residential	88%	32	34	33	100%

Note: Percent Land Use Matched and Percent Units Matched take as their denominator only those parcels for which a land use or number of units was indicated by both assessor data and ground-truth data.

Comparison of Marin City Data Analysis with Stakeholder Interviews

Marin City is a low-income tract that is not losing low-income households, nor does it have many risk factors for gentrification or displacement. The area's ability to preserve its low-income population is likely related to the significant public housing stock in the city, host to nearly a third of the city's residents, plus several other subsidized housing projects that bring the total number of subsidized units to 604—over half of the rental stock *(Department of Housing and Urban Development, 2014a).*

[5] Note: For the blocks, this figure refers to all whites of one race, including those that are Hispanic. For the Marin City and Marin County figures, it refers to Non-Hispanic whites. The "Percent Change" figures all compare percentages over time; for example, in Marin City, the percent Non-Hispanic white in 2000 was 34%, which decreased to 25% in 2010—a -25% change.

However, stakeholder interviews paint a different picture of the neighborhood. Residents are very concerned that the public housing, situated on a hill with views of Richardson Bay, will be demolished in favor of private development, according to a long-time community organizer in the neighborhood. Other residents, interviewed on the street in front of their homes, commented that the population has been remarkably stable in the last 10-15 years.

Conclusion

While there is some variation among the secondary datasets, ground-truthing, and stakeholder interviews, these data sources tell very similar stories about the neighborhood overall. Even where they diverge the most the two can be reconciled by saying that the neighborhood, though stable in recent years is vulnerable to displacement (captured in residents' concerns about losing public housing units).

The Mission District

The Mission District is located in the southeastern region of San Francisco and is home to almost 52,000 of San Francisco's approximately 818,000 residents. Since the 1950s, the neighborhood has been San Francisco's Latino enclave. From 1980 to 2013, a period that has included two tech booms, the cost of living and of housing has risen dramatically in the Mission, which led to the displacement of long-time residents. During this time, the Mission District lost much of its industrial sector (Casique 2013).

Since 1980, the area has seen significant shifts in racial composition (a decrease in Latinos and increase in whites), proportion of family households (decreased), educational attainment (toward more highly educated people), median income (increasing), and rents (increasing)—all indicative of gentrification.

New residents were—and are still—attracted to the amenities provided by higher density, the cultural richness of the neighborhood, and transit access. Multiple bus lines as well as two BART stations (16th Street and 24th Street Mission Station) service the neighborhood for an easy commute to the financial district. The neighborhood is also close to the freeway and Caltrain, which provide accessibility to the greater region, including Silicon Valley.

Mission District Ground-Truthing Results

On November 14, 2014, a researcher from UC Berkeley Center, a community organizer, and a consultant with deep knowledge of the area walked four blocks in the Mission District (Figure 2H.8). Tables J.11 and J.12 describe the blocks using census data: Blocks 3003 and 1004 stand out in terms of real estate transactions and sales prices, while Block 1007 has seen rapid gains in the white population, and all of the blocks have experienced declines in average block size.

Of the sample blocks' 193 parcels recorded in the assessor dataset, field researchers were able to match 73% of these parcels on the ground. Of parcels for which the land use was indicated in assessor data and verifiable through ground-truthing, 87% matched. The total number of units on the four blocks ranged from 319 according to assessor data, to 421 according to ground-truthing, to 431 according to the Census.

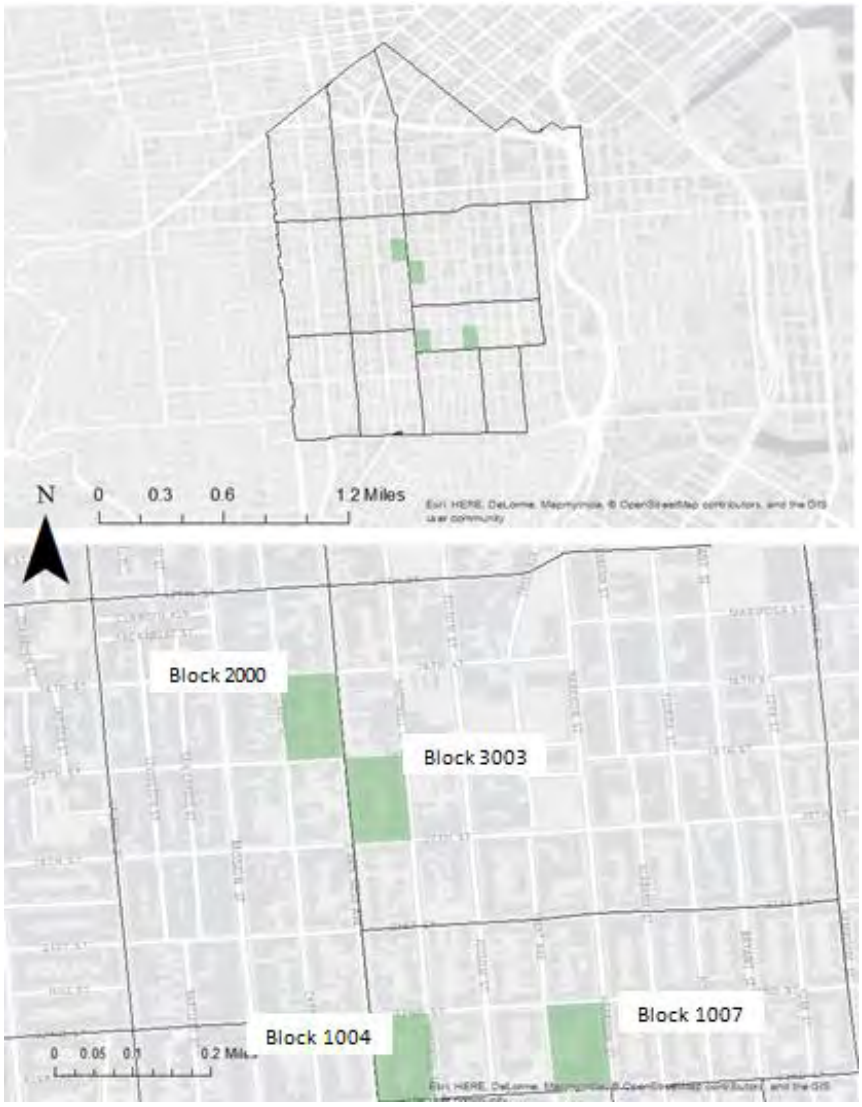


Figure J.4: Map of Mission District, with census tracts,and Four Ground-Truthing Blocks in Green

Table J.11 Sales History and Assessed Value of Residential Parcels in the Mission District

Block	Median Year of Construction	Median Year of Last Sale	Percent Sold 2010-2014	Median Sale Price	Median Sale Price Per Square Foot	Assessed Value Per Square Foot (2013)
3003	1985	2005	29%	$578,500	$491	$465
2000	1903	1999	19%	$697,500	$256	$205
1007	1933	2004	23%	$925,000	$216	$161
1004[6]	1904.5	2007.5	42%	$785,000	$366	$221
Mission	1912	2004	20%	$585,000	$314	$235
SF	1932	2003	21%	$520,000	$337	$277

Source: Dataquick, 2014. These figures refer to all parcels in the area, including non-residential uses.

[6] Assessed value would likely be higher if the assessor data included new condominium buildings on the block.

Table J.12 Indicators of Neighborhood Change: Census Data/Demographics in the Mission District *(Percentage Change From 2000–2010)*

Block	Population	White Population	Asian Population	Hispanic Population	Average Household Size	Family Households
3003	-5%	14%	-22%	-11%	-13%	-12%
2000	-7%	-9%	-12%	-25%	-19%	-12%
1007	81%	111%	1 to 8 residents	-28%	-46%	7%
1004	-11%	19%	21%	-30%	-15%	-26%
Mission	-5%	16%	7%	-21%	Not available	40%
SF	4%	-2%	12%	11%	-2%	4%

Source: Decennial Census 2000 and 2010, accessed through NHGIS.

For each block, the total number of units based on three different datasets vary widely, as do the listed number of units for each parcel. Land uses, on the other hand, match fairly well on each block. These results suggest that some error may exist in either the census or assessor's reported count of housing units and unit type, likely due to rapid or un-permitted changes to parcels. However, even with these discrepancies, the ground-truthing exercise confirmed the overall story of this neighborhood as one that has experienced and is still undergoing major gentrification and displacement.

Broadly, the secondary datasets and ground-truthing data paint similar pictures of change on these four blocks. Where the assessor data is ambiguous or reveals a mix of forces, as with Block 1004, so does the ground-truthing data. On one block (3003), the data sets align in terms of the broad story, but the ground-truthing takes the narrative deeper and reveals significant public investment and continued concerns about safety.

Block 1007 provides a cautionary example. On this block, the assessor dataset was missing a large number of parcels, most of them in two new condominium buildings. Without ground-truthing the block, we would have missed the major impact these buildings have on the feel of the street, and their implications for gentrification in the area. The block is a good example of a place in transition: running through its center is a relic of the area's former industrial character, in the form of a warehouse and some older, poorly-maintained buildings; yet, at the same time, there are several better-maintained homes, two new high-priced condominium buildings, and a new, well-used and well-maintained park.

In terms of comparing datasets, unmatched parcels were a concern for three of four blocks; the number of units recorded per parcel usually did not match (Table J.13). This could be related to the high incidence of condominiums, and the rapid change in the area. On the other hand, when it came to land uses, there were consistent matches between ground-truthing and assessor data.

Table J.13: Parcel Mismatch among Datasets in the Mission District

Block and Census Tract	# assessor parcels matched to ground-truth parcels, of total assessor parcels	# ground-truth parcels matched to assessor parcels, of total ground-truth parcels
Block 3003, Tract 228.01	65 / 81	66 / 70
Block 2000, Tract 208	26 / 55	28 / 31
Block 1007, Tract 228.03	12 / 16	12 / 87
Block 1004, Tract 228.03	37 / 41	39 / 39

Most of the mismatch is not significant enough to skew results; however, three areas of discrepancy are significant. On Block 3003, 15 of the parcels in the assessor data did not appear in the ground-truthing geographic dataset. On Block 2000, 29 of the 55 parcels in the assessor data did not appear in the geographic data set. Finally, on Block 1007, almost all of the parcels from the geographic dataset did not appear in the assessor data. This is primarily the result of the Dataquick data missing over 40 parcels for one building (3000 23rd St.). Although it has many parcels, Dataquick lists it as having only one, with the use listed as an apartment building. Likewise for another building (2652 Harrison St.), while it has 20 parcels/units (condominiums, in this case), according to the geographic ground-truthing data, Dataquick lists it as a single parcel. This is almost definitely a glitch in the data or possibly a condo-conversion process that happened after 2013.

For two variables—land use and number of units—comparisons are made on a parcel-by-parcel basis; only parcels that appear in both datasets are used for this comparison (Table J.14).

Table J.14: Summary of Parcel Matches and Primary Land Use in the Mission District

Block	Primary Land Use, based on Observations	Percent Land Use Matched between observation & Assessor	Total Number of Units on Block			Percent of Parcels whose Number of Units match between Assessor Data and Visual Observation*
			Assessor Data – Dataquick	Visual Observation Ground-truthing	Census Data: Total Housing Units-2010	
3003	Residential: 50% condo, 21% multi-family	87%	81	134	121	44%
2000	Residential: 42% multi-family, rest condo and single-family	96%	100	85	121	38%
1007	Residential: condo, multi-family	71% (denominator is 7)	32	96	78	38% (denominator is 12)
1004	Residential: 45% multi-family, 38% condo	86%	106	106	111	32%

**Note: Percent Land Use Matched and Percent Units Matched take as their denominator only those parcels for which a land use or number of units was indicated by both assessor data and ground-truth data.*

The uses on the blocks vary: former industrial sites share the block with new condominium developments; unmaintained townhouses sit next to recently-renovated townhouses with expensive improvements; expensive cafes and grocery stores have opened next to long-time, low-cost diners.

All four blocks are mostly residential, with a mix of single-family homes, multi-family rental buildings, and condominium buildings, which are usually newer. There are a few non-residential uses on each block, including some light industry, stores, offices, and one church. Most structures are older, though there are some very new buildings. The neighborhood is diverse in terms of socioeconomic status (judging by the range of businesses) and race (judging by the signs in Spanish posted in a laundromat and observations of pedestrians).

Conclusion

Stakeholder interviews, secondary data sources, and visual observations of the Mission are all aligned in telling the same story of a neighborhood experiencing ongoing change of gentrification that began nearly two decades ago. Advocates in the community discussed the historical and ongoing influx of new residents and displacement of low-income people, as well as extensive community organizing and resistance in the face of such changes. Where the datasets diverge is in the number of units in each parcel and on each block (though land uses match well between visual observation and assessor data); even this divergence is consistent with what we know about the Mission: it has experienced rapid change that secondary data has not picked up yet.

Appendix K. Los Angeles Ground-Truthing Neighborhoods

Table K.1 provides a profile of the three case study areas, and how they compare with the TOD and County averages.

Table K.1: Profiles of Case Study Areas in Los Angeles Ground-Truthing

	Chinatown	Hollywood/Western	103rd/Watts Towers	All TOD average	County average
Income (2013)	34,088	45,600	40,376	51,471	81,416
Change in income 90-2013	-14%	-10%	13%	9%	-5%
Change in income 00-2013	-13%	-1%	-9%	7%	-6%
Change in income 90-00	-1%	-9%	24%	2%	1%
Largest race/ethnic group	Asian	White	Hispanic	Hispanic	Hispanic
Not Hispanic White (NHW)	9%	48%	1%	15%	28%
% point change in NHW	1%	-1%	0%	-3%	-13%
# HH	2,700	9,937	2,894	4,329	N/A
% HH with Child	29%	19%	56%	30%	37%
% Renter	93%	94%	63%	81%	53%
% Moderately Burdened (30%-50%)	26%	22%	25%	27%	26%
% Severely Burdened (50%+)	27%	37%	42%	31%	30%
Ellis Act Evictions 2007-2014	4	6	0	11	
Condo Conversions	0	11	0	44	
Jobs/Housing Balance	3.45	0.78	0.53	3.76	
# Businesses	1,101	1,338	266	1,536	
# Churches	18	19	28	20	
# HS Nonprofits	13	13	11	13	
Yearly Station Traffic Volume (All Boardings and Alightings)	1,119,344	3,327,704	1,178,918	2,723,794	
SNAP	Yes	Yes	Draft		

Source: Tabulated by authors from the 1990 and 2000 Decennial Censuses and the 2009-2013 American Community Survey; NCCS database on non-profits; Longitudinal Employment-Household Dynamics (LEHD) datasets; and data on ridership from Metro.

Chinatown (Gold Line)

The Chinatown Metro rail station is an elevated light-rail stop located at North Spring Street and College Street in the Chinatown neighborhood of downtown Los Angeles. The station opened in 2003 as an eastern extension of the Gold Line, connecting Pasadena, Downtown Los Angeles, and East Los Angeles. The Chinatown neighborhood is the result of the construction of the nearby Union Station in the 1930s, which forced residents to migrate north from what was originally considered Old Chinatown to the current location of New Chinatown. Confined in an ethnic enclave by legislation and racial backlash, many Chinese merchants developed family-owned, self-sustaining

"mom and pap" stores to survive within their community. Today, many small businesses and local merchant shops in Los Angeles Chinatown continue to thrive catering to the shopping needs of local residents but also as tourist destinations for many visitors.

Although Chinatown today is characterized as a multiethnic neighborhood, it is still majority Asian. Other ethnic groups whose members live there include Latinos, blacks, and whites. Nearly all the households (93%) are renters, with about 53% experiencing rent burden. The median household income in 2013 was a little more than $34,000.

Our model identifies this area as having a high potential for gentrification. In addition, community groups believe that the area is at "high risk" of gentrification as they see the neighborhood experiencing a wider transformation, including the loss of traditional businesses[7], and the offering of new housing options, public services, and activities that are inconsistent with the historical identity of this neighborhood. While the area is changing, it is not clear if the TOD is driving the changes. So far, there are few formal venues for CBOs to directly influence TOD planning and efforts in Chinatown.

Hollywood Blvd./Western Blvd. (Red Line)

The Hollywood Blvd./Western Blvd. Metro rail station is a heavy-rail subway station located in East Hollywood situated below grade. It opened in 1999. It is the only heavy-rail line in the case study areas and the one with the highest ridership. Hollywood/Western has one ground level entrance/exit with two subterranean levels. The station does not offer parking. The Hollywood/Western neighborhood is one of the most densely populated areas in the city and is located in the central region of Los Angeles. Beginning in the 1960s, many immigrants from around the world —East Asia, Latin America, the former Soviet Union, and the Middle East—settled there and formed communities. Each community continues to leave its mark on this neighborhood. Whites still make the largest racial group in the study neighborhood. East Hollywood was affected by the 1992 Los Angeles Riots and also sustained significant damage in the 1994 Northridge earthquake.[8].

Ninety-four percent of the residents here are renters in multi-family buildings. A high percentage of renters (about 59%) are burdened by the cost of housing, with renters spending at least 30% of their income on rent. The median household income in 2013 was $45,600, about 55% of the county's average.

The area is also known for the Barnsdall Art Park and Los Angeles Community College, and is considered one of Los Angeles' largest hospital districts. Model results indicate that this area has a high potential for gentrification. The Hollywood/Western TOD is also part of the Vermont/Western Transit Oriented District Specific Plan (SNAP), implemented two years after the station opened. The SNAP offers a formal mechanism for community engagement and a means for CBOs to influence development.

103rd St./Watts Tower (Blue Line)

[7] The 2013 State of Los Angeles Chinatown report provides insight into job concerns and is available at http://www.aasc.ucla.edu/research/pdfs/statect.pdf. Numerous news articles also document changes in the area; for instance, see: http://www.ladowntownnews.com/news/with-jia-chinatown-gets-a-million-apartment-complex/article_9fc95a96-a0d4-11e3-b308-0019bb2963f4.html

[8] East Hollywood Neighborhood Council. (2015). The history of East Hollywood. Retrieved May 3, 2015, from http://www.easthollywood.net/history.

The 103rd St./Watts Tower Metro rail station is a light-rail station located at grade level at the intersection of 103rd St and Grandee Ave. in Watts in South Los Angeles. The station opened in 1990 and is the oldest of the case studies. The Watts area is a largely-residential commuter district, about 13 miles south of the downtown central business district and away from other large employment areas. Annexed by the City of Los Angeles in 1926, the area gained an African-American majority in the 1940s as a result of the Great Migration. The neighborhood suffered through the Watts uprisings in 1965, and a wave of gang-related violence arose in the following decade that lasted until the early 2000s, but has since subsided (Empower LA 2015). Presently, the area has a Latino majority (74%), with African-Americans retaining a significant minority at 25%.

Though the area has the lowest percentage of renters relative to the other case studies (at about 63%), it also has the greatest share of burdened renters (at 67%). The median income was $40,376 in 2013, less than half of the county average (at $81,416). Additionally, 103rd St./Watts has a low job-to-housing balance at only 0.53 jobs per resident employees. This means that residents in Watts commute outside of Watts to work, and that the area is more residential than commercial.

For years a disinvested and poor African-American neighborhood, Watts has experienced significant demographic transition in the last decades and is now predominately Latino. The gentrification model shows this area as undergoing little change. There has been an ongoing desire to promote local economic development by the public and private sector in the wider South Los Angeles area.[9]

[9] The 2014 Watts Community Studio report provides insight into priorities of residents and public officials. See http://wattscommunitystudio.files.wordpress.com/2014/01/wcs-final-report.pdf. Talks of private investment include the opening of local eateries, among other activities. For instance, see: http://la.eater.com/2015/1/20/7861851/roy-choi-locol-opening-watts-south-la-twitter

Appendix L. Detailed Ground-Truthing Methodology for Los Angeles

Street and Census Blocks

Census blocks were selected by their proximity to the rail station regardless of land use or transaction activity. The boundaries for most census blocks coincided with street block segments. The groundtruthing exercise involved walking through the case study neighborhoods and documenting visual observations on each block. Researchers photographed each block and parcel of interest to supplement the findings.

Block-level evaluations aimed to capture indicators of gentrification on the street blocks surrounding the Metro rail stations. Surveyors assessed each block for:
Observable land use (e.g., single-family residential, commercial retail, institutional)
Visible public infrastructure (e.g., pedestrian lighting, bus shelters, bike infrastructure)
Characteristics of individuals and the observed level of diversity present on the block (e.g., age, race, gender)

- Physical disorder (e.g., graffiti, litter, neighborhood watch signs)
- Indicators of ethnic commercial presence (e.g., signs, goods, businesses)
- Signs of commercial gentrification (e.g., upscale coffee shops, yoga studios and other upscale recreational facilities, recent renovations)
- Signs of residential gentrification (e.g., new construction, recent renovations, upscale landscaping)

Indicators of commercial gentrification surveyed included specialty, high-end, or boutique stores and restaurants. Signs of residential gentrification included new construction, conspicuous or recent renovation of buildings (such as new paint, doors, windows, or patios), upscale landscaping or xeriscaping, and the presence of luxury or "green" vehicles parked in the driveway or on the street. The team selected these indicators after consulting with the UCLA research team and UC Berkeley research team that completed prior groundtruthing at San Francisco Bay Area transit stations.

Parcels

We identified parcels located on blocks with high rates of property activity compared to the nearby blocks. Using County Assessor data from DataQuick, we mapped parcels with new construction, renovation, or sales to single-family homes, multifamily buildings, and commercial properties between 2008 and 2013. We then identified the average number of parcels per block that experienced transactions during the five-year period. Any block within a half-mile radius of the station that exhibited a higher-than-average rate of property activity was included in the sample. For example, if the average number of parcels experiencing change in a station area was 15%, then any block in which more than 15% of parcels experienced change and which are fully within the half-mile boundary were included in the groundtruthing sample. Within each selected block, we visited parcels which met the described criteria to perform parcel-level inventory of building characteristics. This visual analysis included descriptions of:

- Building type (e.g., single-family, multi-family, strip mall)

- Building signs and markings (e.g., for sale, for rent, eviction notices)
- Occupancy status (e.g., occupied, not occupied, unable to judge)
- Building characteristics (e.g., newly constructed, older building and renovated, older building and not renovated)
- Overall building appearance (e.g. below average, average, above average)
- Physical appearance relative to its surroundings (e.g., roughly consistent, out of place and higher-end, out of place and lower-end)
- Physical signs of residential/commercial gentrification (e.g., new construction, recent renovations, upscale landscaping)

The instrument also accounted for signs of commercial gentrification, which include new construction, notable renovation, upscale landscaping, and upscale store frontage. Photographs supplemented these written observations. The instruments are included in Appendix II. The following survey documents are found in the appendices:

- Groundtruthing instruction sheet
- Block groundtruthing form
- Residential parcel groundtruthing form
- Commercial parcel groundtruthing form
- UCLA consent letter

Challenges

The research team experienced a number of challenges, including surveyor subjectivity, inconsistent numbers of cases between study areas, and sampling limitations. While in the field, it was difficult to consistently evaluate whether or not a building or parcel condition could be objectively considered as average, slightly below average, or slightly above average. Furthermore, working with a team of researchers increases the chance of discrepancy. To overcome this challenge, we beta-tested the instrument and at least two researchers groundtruthed each neighborhood to ensure consistency and to identify inconsistencies. In designing the survey, the research team expected observations of residents to be useful in observing changes to the neighborhood; however, the researchers observed very few residents, particularly in residential neighborhoods. For this reason, this study is complemented by Census data and surveys of transit and business users.

In conducting parcel-level analysis, researchers visited parcels that had been sold or substantially rehabilitated in the past five years, as determined by sales records, permits, and visual observations during fieldwork. The number of property sales varied dramatically between case study neighborhoods. In areas with relatively few transactions the research team selected any parcel that met the parcel selection criteria. Nonetheless, at least fifteen parcels are included for each station area, providing a sufficient sample to evaluate trends.

Estimated Units

Another challenge is that the Assessor's parcel data has incomplete information on the number of units in a given parcel. We complemented the Assessor information by using the land-use code to estimate the number of units. A single family residence was counted as one unit. We then identified condo units and constructed the number units for these using the second character of the property use code. We followed a similar process for multi-family units as we did for condos. We also estimated the number of estimate the number of units for parcels with use code 05 (five or more units) by dividing the building's square foot by 900 (900 is the average square feet per unit in LA). We compared the estimated numbers to those reported by DataQuick, which also has missing information on unit counts. The results are similar. See Figure L.1 below.

As the number of housing units in a TOD area increase, so does the discrepancy between census housing units and parcel estimates. One reason may be temporal, that is inconsistencies in year for the various datasets. We also use an average size of a unit across all areas to estimate the number of units for a given parcel; however, certain neighborhoods may have homes with significantly greater or smaller area footprint.

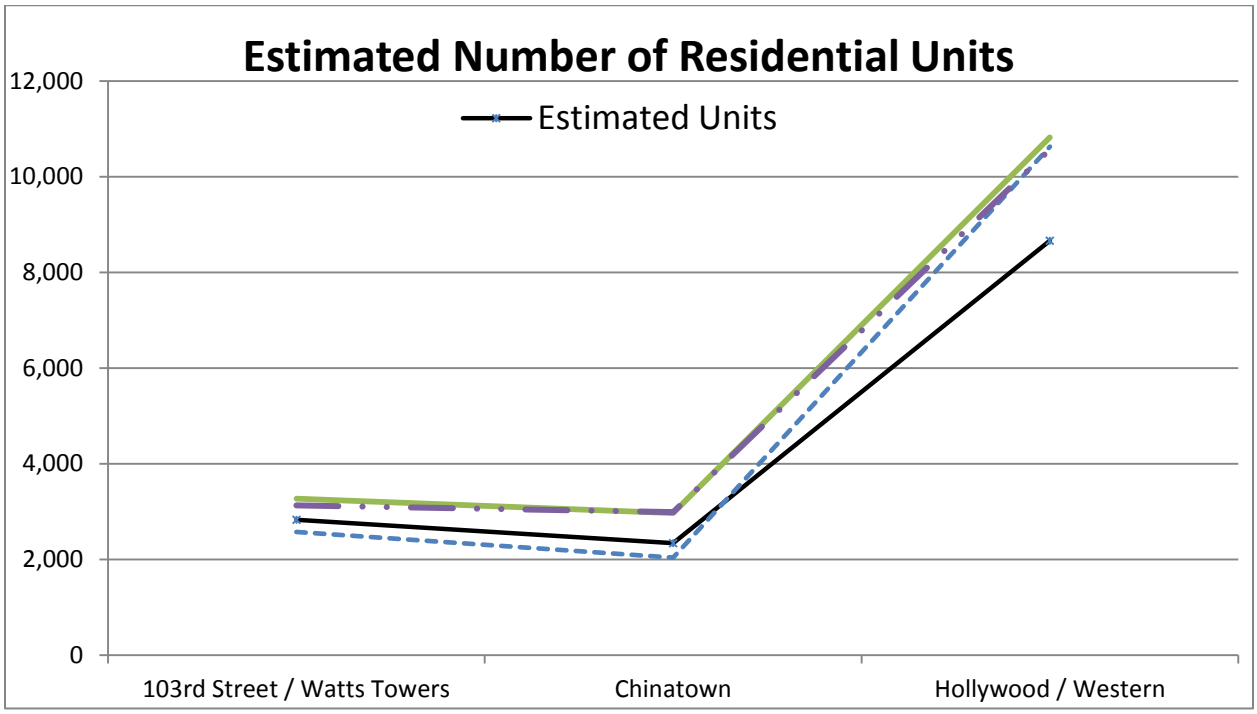


Figure L.1: Comparison of Estimated Units with Different Data Sources

Appendix M. Survey Instruments in Los Angeles

Groundtruthing Instruction Sheet

UCLA TOD Project*

Visual Observations of Neighborhood Change and Gentrification

MATERIALS:
Camera
Smartphone with a compass
UCLA informational letter
Clipboard and pen(s)
Name badge with UCLA logo
Parcel map with directions on where to survey

DRESS CODE: Please dress appropriately for conducting fieldwork as you are representing UCLA.

UCLA gear (no headgear including beanies, hats, visors, etc.) is optional
No shorts or short skirts
No offensive graphics or words
Comfortable shoes for long periods of walking and standing

INTRODUCTION: The purpose of this "groundtruthing" instrument is to gauge whether there are visual signs of neighborhood change that indicate gentrification. Some of the observations are subjective; therefore, it is important to go through training prior to conducting fieldwork.

Provide the following information to any person who asks about your observation activity:

"I am a graduate student in UCLA's Urban Planning program. I am conducting a visual inventory of this neighborhood as a part of a project to study changes and development around transit stations. The information will be used to inform public agencies, community groups and other interested parties about these changes with the goal of enhancing neighborhood quality and ensuring that all stakeholders benefit."

Please note that there are **three distinct forms** to note your observations (street segments, and residential parcels and commercial parcels).

INSTRUCTIONS:

Physically walk predetermined neighborhood blocks and note evidence of gentrification and improvement relative to other uses using **Section One**. Parcel or building specific information should be collected in **Section Two**. Each block should be named according to its main corridor (indicated on your map as the street with parcels on both sides).

Bring a **camera** (could use your smart phone camera if it produces decent images). **Code each block** and each parcel on the map with its own unique number, and include these numbers on the worksheets that you fill out. **Using compass** on smartphone, stand perpendicular to street segment and note the direction of the street (north, south, east or west).

One whole worksheet should be completed for each block section

Allow for ~1.5 hours of field time.

SECTION ONE: STREET SEGMENT OBSERVATIONS
The purpose of the street segment observations is to assess the characteristics and appearances of street segments. If possible, take photographs relevant to gentrification (e.g., images of older and more established buildings, businesses, and residents; images of newer buildings, businesses, and residents); list addresses for possible later comparison with historical images from Google Street View.

SECTION TWO: PARCEL OBSERVATIONS
The purpose of the parcel observations is to assess the characteristics and appearances of parcels. Using your pre-printed parcel map, carefully walk the block and record your observations for each assigned parcel and building. Use the appropriate from (residential and commercial). Be sure to take a photograph of the assigned buildings.

* Developed by Paul Ong with Silvia Jimenez, Anastasia Loukaitou-Sideris, Karolina Gorska and students from the 2015 Urban Planning Comprehensive Project for the study *"Developing a New Methodology for Analyzing Potential Displacement."*

Block Groundtruthing Form

Block Name/Number: _____ Direction:_____ Parcel Number: _____Location: _____

Observer:_____ Physical Observation Date:_____Start Time ____:____ AM/PM End Time ____:____ AM/PM

SECTION ONE: STREET SEGMENT OBSERVATIONS

1. Rough proportion of block face is (10% increments):

□ Single Family Residential ___%
□ Multifamily Residential ___%
□ Retail ___%
□ Commercial (Office Building) ___# ___%
□ Institutional (school, hospital, religious): ___# ___%
□ Industrial ___%
□ Mixed use ___%
□ Vacancies:_____ ___%
Other: _____

2. Existing public infrastructure:

□ Bus stop shelter
□ Pedestrian street lights
□ On-street residential permit parking
□ Street furniture (e.g. benches, parklets)
□ Bike infrastructure (racks, lanes, etc)
□ Public trash cans
□ Parking meters
□ Newly paved streets and sidewalks, traffic calming
□ Other: _____

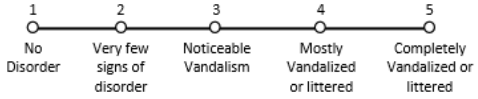
3. Describe any visible people

□ How busy_____
□ Dominant activity _____
□ Dominant ethnicity_____
□ Dominant age group_____
□ Dominant gender _____
□ Dominant life style _____
□ Other: _____

4. Extent of visual social diversity (low, medium, high)

□ Race/ethnicity_____
□ Socioeconomic class _____
□ Age _____
□ Gender _____
□ Social grouping (family, couples, friends, alone)
_____
□ Other: _____

5. Physical disorder such as garbage, litter, graffiti, or vandalism by degree of observations (circle 1-5):



6. Signage discouraging/controlling disorder

□ Neighborhood watch
□ Anti-littering/graffiti
□ Anti-loitering/drug use/vandalism
□ Anti-trespassing
□ Other:_____

Prevalence: □ Rare □ Few □ Noticeable

7. Describe indicators of ethnic commercial presence:

□ Non-English language signs
□ Signs of ethnic business
□ Signs of ethnic goods
□ Signs of ethnic institutions (school, hospital, churches):
□ Other: _____

Prevalence: □ Rare □ Few □ Noticeable

8. Signs of commercial gentrification (trendy, high-end or upscale, boutique)

□ Specialty coffee shops, bars, restaurants
□ Boutique stores
□ Yoga studios and similar recreational facilities
□ High-end grocery stores (e.g., Whole Foods, TJ)
□ Artsy spaces:
□ Other:_____

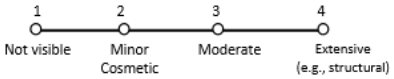
Prevalence: □ Rare □ Few □ Noticeable

9. Diversity of commercial activities

□ Predominantly older, well-established stores
□ Small majority of older, well-established stores
□ about an equal number of older and newer stores
□ Small majority of newer stores catering to gentrifiers
□ Predominantly newer stores catering to gentrifiers
Comments: _____

10. Physical signs of residential gentrification

□ New construction
□ Recent renovation to unit(s)

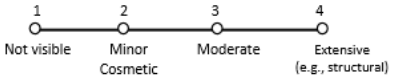


□ Upscale landscaping (e.g., fencing)
□ Upscale /luxury and "green" vehicles
□ Other: _____

Prevalence: □ Rare □ Few □ Noticeable

11. Physical signs of commercial gentrification

□ New construction
□ Recent renovation to unit(s)



□ Upscale/trendy landscaping (e.g., patio furniture, plant type)
□ Upscale/trendy store front
□ Upscale/trendy signage, ads, displays
□ Other:_____

Prevalence: □ Rare □ Few □ Noticeable

12. Describe public art and aesthetics:_____
_____

14. Additional notes on block overview (e.g., small dogs, dog waster bags): _____
_____

Residential Parcel Groundtruthing Form

Observer:_____ Physical Observation Date: _____ Start Time ____:____ AM/PM Station:_____

SECTION TWO: RESIDENTIAL PARCEL OBSERVATIONS

APN/Parcel #_____Street Address_____

1. Building type and units:
   - ☐ Single family ☐ 2-4 multifamily
   - ☐ Non-residential ☐ 5 or more multifamily
   - ☐ Unable to judge: _____
2. Occupancy status
   - ☐ Occupied
   - ☐ Partially occupied: _____
   - ☐ Not occupied:
     Signs of abandoned: ☐ Yes ☐ No
   - ☐ Unable to judge: _____
3. Building signs and markings
   - ☐ For sale signs:_____
   - ☐ For rent signs:_____
   - ☐ Eviction notices:_____
   - ☐ Other (explain): _____
4. Building characteristics
   - ☐ Newly constructed
   - ☐ Older building:
     - ☐ Renovated ☐ Not renovated
     - ☐ Ongoing renovation
5. Overall building appearance

   1 poor — 2 below average — 3 average — 4 above average — 5 new
6. Physical Signs of Residential Gentrification
   - ☐ New construction
   - ☐ Recent renovation to unit(s)

     1 Not visible — 2 Minor Cosmetic — 3 Moderate — 4 Extensive (e.g., structural)
   - ☐ Upscale/trendy landscaping (e.g., fencing, plant types)
   - ☐ Upscale/luxury and "green" vehicles
   - ☐ Other: _____

   Prevalence: ☐ Rare ☐ Few ☐ Noticeable
7. Building appearance relative to surroundings
   - ☐ Roughly consistent
   - ☐ Out of place, higher-end
   - ☐ Out of place, lower-end
   - ☐ Unable to judge:_____
8. Notes on building and outdoor space:_____
   _____
   _____
9. Photo number(s) or range:_____
   _____

APN/Parcel #_____Street Address_____

1. Building type and units:
   - ☐ Single family ☐ 2-4 multifamily
   - ☐ Non-residential ☐ 5 or more multifamily
   - ☐ Unable to judge: _____
2. Occupancy status
   - ☐ Occupied
   - ☐ Partially occupied: _____
   - ☐ Not occupied:
     Signs of abandoned: ☐ Yes ☐ No
   - ☐ Unable to judge: _____
3. Building signs and markings
   - ☐ For sale signs:_____
   - ☐ For rent signs:_____
   - ☐ Eviction notices:_____
   - ☐ Other (explain): _____
4. Building characteristics
   - ☐ Newly constructed
   - ☐ Older building:
     - ☐ Renovated ☐ Not renovated
     - ☐ Ongoing renovation
5. Overall building appearance

   1 poor — 2 below average — 3 average — 4 above average — 5 new
6. Physical Signs of Residential Gentrification
   - ☐ New construction
   - ☐ Recent renovation to unit(s)

     1 Not visible — 2 Minor Cosmetic — 3 Moderate — 4 Extensive (e.g., structural)
   - ☐ Upscale/ trendy landscaping (e.g., fencing, plant type)
   - ☐ Upscale/luxury and "green" vehicles
   - ☐ Other:_____

   Prevalence: ☐ Rare ☐ Few ☐ Noticeable
7. Building appearance relative to surroundings
   - ☐ Roughly consistent
   - ☐ Out of place, higher-end
   - ☐ Out of place, lower-end
   - ☐ Unable to judge:_____
8. Notes on building and outdoor space:_____
   _____
   _____
9. Photo number(s) or range:_____
   _____

Commercial Parcel Groundtruthing Form

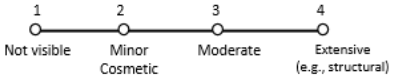
Observer:_____ Physical Observation Date: _____ Start Time ____:____ AM/PM Station:_____

SECTION TWO: COMMERCIAL PARCEL OBSERVATIONS

APN/Parcel #_____Street Address_____

1. Building type and units:
   - ☐ Multi-story ___# stories
   - ☐ Stand-alone
   - ☐ Strip mall
   - ☐ Unable to judge: _____
2. Building Use (e.g., office, retail, minimart):_____
   _____
3. Occupancy status
   - ☐ Occupied
   - ☐ Partially occupied: _____
   - ☐ Not occupied:
     Signs of abandoned: ☐ Yes ☐ No
   - ☐ Unable to judge: _____
4. Building signs and markings
   - ☐ Property "For sale" signs:_____
   - ☐ Property "For rent" signs:_____
   - ☐ Eviction notices:_____
   - ☐ Upscale/trendy signage, ads, displays
   - ☐ Other (explain): _____
5. Building characteristics
   - ☐ Newly constructed
   - ☐ Older building:
     - ☐ Renovated ☐ Not renovated
     - ☐ Ongoing renovation
6. Overall building appearance

7. Physical Signs of Commercial Gentrification
   - ☐ New construction
   - ☐ Recent renovation to unit(s)



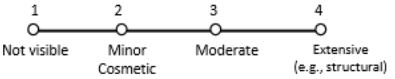
   - ☐ Upscale/trendy landscaping (e.g., patio furniture, plant types)
   - ☐ Upscale/trendy store front
   - ☐ Other:_____

   Prevalence: ☐ Rare ☐ Few ☐ Noticeable
8. Building appearance relative to surroundings
   - ☐ Roughly consistent
   - ☐ Out of place, higher-end
   - ☐ Out of place, lower-end
   - ☐ Unable to judge:_____
9. Notes on building and outdoor space:_____
   _____
10. Photo number(s) or range:_____

APN/Parcel #_____Street Address_____

1. Building type and units:
   - ☐ Multi-story ___# stories
   - ☐ Stand-alone
   - ☐ Strip mall
   - ☐ Unable to judge: _____
2. Building Use (e.g., office, retail, minimart):_____
   _____
3. Occupancy status
   - ☐ Occupied
   - ☐ Partially occupied: _____
   - ☐ Not occupied:
     Signs of abandoned: ☐ Yes ☐ No
   - ☐ Unable to judge: _____
4. Building signs and markings
   - ☐ Property "For sale" signs:_____
   - ☐ Property "For rent" signs:_____
   - ☐ Eviction notices:_____
   - ☐ Upscale/trendy signage, ads, displays
   - ☐ Other (explain): _____
5. Building characteristics
   - ☐ Newly constructed
   - ☐ Older building:
     - ☐ Renovated ☐ Not renovated
     - ☐ Ongoing renovation
6. Overall building appearance

7. Physical Signs of Commercial Gentrification
   - ☐ New construction
   - ☐ Recent renovation to unit(s)



   - ☐ Upscale/trendy landscaping (e.g., patio furniture, plant types)
   - ☐ Upscale/trendy store front
   - ☐ Other:_____

   Prevalence: ☐ Rare ☐ Few ☐ Noticeable
8. Building appearance relative to surroundings
   - ☐ Roughly consistent
   - ☐ Out of place, higher-end
   - ☐ Out of place, lower-end
   - ☐ Unable to judge:_____
9. Notes on building and outdoor space:_____
   _____
10. Photo number(s) or range:_____

UCLA Consent Letter

UNIVERSITY OF CALIFORNIA, LOS ANGELES

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CENTER FOR THE STUDY OF INEQUALITY
LUSKIN SCHOOL OF PUBLIC AFFAIRS
6368 PUBLIC AFFAIRS BUILDING
BOX 951656
LOS ANGELES, CALIFORNIA 90095-1656

15 March 2015

To Whom It May Concern,

Students at the UCLA Center for the Study of Inequality are conducting a visual inventory of this neighborhood as part of their Urban Planning Master's Program comprehensive research project. This project examines changes and developments around transit stations in the Los Angeles area. The information will be used to inform public agencies, community groups and other interested parties about these changes and developments. The goal of the study is to enhance neighborhood quality and ensure that all stakeholders benefit from transit development.

If you have questions about the credentials of the student, please contact the UCLA Department of Urban Planning at the Luskin School of Public Affairs at: 3250 Public Affairs Building, Box 951656, Los Angeles, CA 90095. Or alternatively, questions can be answered over the phone at (310) 825-4025.

If you have questions about the project, please contact me at 818-270-0497.

Thank you.

Sincerely yours,

Silvia Jiménez
Assistant Director,
Center for the Study of Inequality

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Table M.1: Block Segment Observations for Case Study Areas

	Chinatown	Hollywood/ Western	103rd Street / Watts Towers
Total Block Segments	21	20	31
Land Uses			
Single Family	1%	4%	40%
Multifamily	6%	51%	31%
Retail	30%	12%	8%
Commercial	4%	2%	1%
Institutional	13%	2%	13%
Industrial	3%	0%	0%
Mixed-Use	21%	9%	0%
Vacant	21%	12%	6%
Other (e.g., park)	0%	9%	0%
Total	100%	101%	100%
Public infrastructure			
Bus Stop Shelter	5%	5%	16%
Ped. Street Lights	48%	20%	23%
Residential permit parking	10%	0%	0%
Street Furniture	43%	10%	16%
Bike Infra	5%	25%	19%
Public Trash Cans	43%	15%	10%
Parking Meters	38%	50%	0%
Street Improvements	14%	15%	42%
Visible People			
Busy	0%	10%	6%
Moderately busy	38%	35%	16%
Not busy	62%	50%	61%
Ethnicity	Asian, Latino, White	White, Latino, Black, Asian	Black, Latino
Physical Disorder			
Overall Rating	2.28	2.05	2.25
Neighborhood watch	0%	5%	6%
Anti-littering/graffiti	0%	5%	16%
Anti-loitering/drug use	0%	10%	3%
Anti-trespassing	10%	30%	39%
Other Signage	19%	30%	42%
Other Notes			
Ethnic Commercial Presence			
Non-English signs	67%	25%	10%
Ethnic businesses	52%	25%	10%
Ethnic goods	48%	15%	0%
Ethnic Institutions	14%	5%	0%

	Chinatown	Hollywood/ Western	103rd Street / Watts Towers
Commercial Gentrification			
Specialty food shops	5%	5%	0%
Boutique stores	0%	0%	0%
Yoga studios	0%	5%	0%
High end grocery stores	0%	0%	0%
Artsy spaces	0%	0%	0%
Other Notes	N/A		
Diversity of Commercial Activity	1.4	2.4	1.7
Physical Signs of Commercial Gentrification			
New Construction	5%	15%	6%
Recent Renovation to Units	81%	15%	6%
Scale 1-4	1.3	2.3	1.8
Upscale Landscaping	5%	5%	32%
Upscale/Green Vehicles	10%	0%	13%
Physical Signs of Residential Gentrification			
New Construction	5%	20%	9%
Recent Renovation to Units	57%	40%	84%
Scale 1-4	1.3	2.5	1.8
Upscale Landscaping	5%	50%	43%
Upscale/Green Vehicles	10%	35%	17%
Public Art/Aesthetics	Chinese themed decor, plazas and pedestrian street (blocked off to cars)	Poster billboards, mural on warehouse, Armenian genocide mural	Nice mural on corner or Wilmington& 103rd, public murals, trees

Table M.2: Commercial Parcels Observations for Case Study Areas

	Chinatown	Hollywood/ Western	103rd Street / Watts Towers
Commercial Parcels	7	2	3
Building Density			
Multistory Buildings	42.86%	100.00%	0.00%
Number of Stories	2	N/A	N/A
Standalone Building	14.29%	0.00%	100.00%
Strip mall	0.00%	0.00%	0.00%
Unable to Judge	14.29%	0.00%	0.00%
Building Use	N/A	N/A	N/A
Occupancy Status			
Occupied	85.71%	100.00%	33.33%
Partially Occupied	0.00%	0.00%	0.00%
Not Occupied	14.29%	0.00%	33.33%
Unable to Judge	0.00%	0.00%	33.33%
Signage Presence			
For sale signs	0.00%	0.00%	0.00%
For rent signs	0.00%	0.00%	0.00%
Eviction Notices	0.00%	0.00%	0.00%
Upscale signage	0.00%	50.00%	0.00%
Other	N/A	N/A	N/A
Building Improvements			
Newly Constructed	28.57%	100.00%	0.00%
Older Building	0.714285714	0.00%	100.00%
Renovated	0	0.00%	0.00%
Not Renovated	0.714285714	0.00%	100.00%
Ongoing Renovations	N/A	N/A	N/A
Exterior Appearance			
Overall Appearance	3.17	3.26	2.00
Recent Renovations (1-4)	7	2	1
Upscale Landscaping	0.00%	100.00%	0%
Upscale Vehicles	0.00%	50.00%	0%
Appearance in Neighborhood Context			
Out of place, higher	14.29%	100.00%	0.00%
Out of place, lower	0.00%	0.00%	33.33%
Roughly the same	71.43%	0.00%	66.67%
Unable to Judge	14.29%	0.00%	0.00%

Table M.3: Residential Parcels Observations for Case Study Areas

	Chinatown	Hollywood/ Western	103rd Street / Watts Towers
Residential Parcels	17	23	46
Land Use			
Single Family	47%	9%	72%
2-4 MF	29%	0%	28%
5+ MF	24%	87%	0%
Vacant Lot	0%	4%	0%
	100%	100%	100%
Occupancy Status			
Occupied	94%	87%	96%
Partially Occupied	0%	9%	2%
Not Occupied	0%	4%	2%
Unable to Judge	6%	0%	0%
	100%	100%	100%
Signage Presence			
For sale	0%	0%	2%
For rent	0%	4%	7%
Eviction Notices	0%	0%	0%
Newly constructed	0%	0%	0%
Other Signs	0%	0%	0%
Building Improvements			
Newly Constructed	65%	9%	24%
Older Building	35%	87%	76%
Renovated	24%	57%	30%
Not Renovated	12%	26%	46%
Ongoing Renovations	0%	4%	0%
	100%	100%	100%
Exterior Appearance			
Overall Appearance	3.647058824	3.260869565	3.413043478
Recent Renovations (1-4)	1.235294118	1.913043478	1.5
Upscale Landscaping	24%	43%	11%
Upscale Vehicles	0%	4%	0%
Appearance in Neighborhood Context			
Out of place, higher	6%	26%	22%
Out of place, lower	0%	9%	4%
Roughly the same	88%	61%	74%
Unable to Judge	0%	0%	0%

Appendix N. Interview Protocol for Los Angeles

The following section outlines the key questions used for this study, an outline to the interview approach, and information about the interviewed organizations and agencies. The research team also identified best practices for collaboration between CBOs and government agencies to minimize negative externalities. Results are presented as part of the 2015 UCLA Master's in Urban and Regional Planning Comprehensive Project.[10]

Our intended interviewee for each CBO was the executive director or a CBO employee with specific experience or insight in the TOD process. The interviewees had to have worked for the CBO for a significant length of time or participated in multiple organizing campaigns. Table N.1 includes more information about the organizations that were interviewed.

Public agencies were the second group of organizations selected for this research study. For the purposes of our study, we limited the selection to public agencies that are involved in local or regional land use and transportation planning in Los Angeles. Additionally, the public agencies must have worked on projects related to TOD, from development planning to construction of the actual transit infrastructure. We excluded the Los Angeles Department of Transportation (LADOT) because our secondary research found that it has not been active in TOD, despite providing other transit services for much of the study area. Table N.2 identifies the 4 public agencies that were identified for interviews specifically in the study areas. Since these agencies are large organizations that have various missions across the LA region, we selected interviewees from multiple departments to collect insight from different perspectives.

Table N.1: Interviewed CBOs

Organization	Area Served	Year Est.	Approx. Annual Expenditures
Strategic Action for a Just Economy (SAJE)	South Los Angeles	1996	$900,000 (2013)
Southeast Asian Community Alliance (SEACA)	Chinatown/Lincoln Heights	2002	N/A
Chinatown Community for Equitable Development (CCED)	Chinatown	2012	N/A
Thai Community Dev. Center	Thai Town / East Hollywood	1994	$635,000 (2012)
Watts Community Studio	Watts / South Los Angeles	2011	N/A
Trust for Public Land	Greater Los Angeles Area/ National	1972	$141 Million (2013)
LA Voice	Greater Los Angeles Area	2000	N/A

[10] The 2015 Comprehensive Project, "Oriented for Whom? The Impacts of TOD on Six Los Angeles Neighborhoods," is available online at: http://luskin.ucla.edu/content/comprehensive-project

Table N.2: Public Agency Interviews

Agency	Division Interviewed	No. of Interviewees	Area Served
Los Angeles County Metropolitan Transit Authority (LA Metro)	Joint Development Program	1	County of Los Angeles
City of Los Angeles	Department of planning	5	City of Los Angeles
City of Los Angeles	City Council District 13	1	City of Los Angeles
City of Los Angeles	Neighborhood Councils	2	City of Los Angeles

Strategic Actions for a Just Economy (SAJE)

SAJE is a community organizing and advocacy organization working on behalf of the current residents of South LA, particularly in the Figueroa Corridor. SAJE provides legal support to distressed renters, helps establish land trusts, and works to find positive solutions to conflicts between institutions and low-income city residents. SAJE works in partnership with other organizations to ensure that the fate of city neighborhoods is decided by those who live there, and accomplishes this in ways that are replicable and sustainable (Strategic Actions For a Just Economy 2015).

South East Asian Community Alliance (SEACA)

Launched in 2002, SEACA was founded on the principle of inclusion, and from the beginning, has been guided by a belief that individuals can improve and build power in their own communities. The organization was started due to a lack of resources targeting the needs of Southeast Asians. SEACA began as a youth leadership program and over the years have expanded programs to include youth organizing, creative arts and self-expression, and most recently, health and community building through food and gardening (SEACA 2015).

Thai Community Development Center (Thai CDC)

Thai CDC was established to begin addressing the health and human service needs of the Thai population living in Los Angeles. Thai CDC offers a broad range of services, including health and human services, legal services, senior services, and youth services. Since its establishment in 1994, Thai CDC has addressed the multifaceted needs of Thai immigrants in the Southern California region, who, at an estimated population of 100,000 are considered the largest number of Thais living abroad (Thai CDC, 2015).

Watts Community Studio

The Watts Community Studio is a research project supported by the City of Los Angeles' Council District 15 Office of Joe Buscaino. The project goal is to inform local planning and economic development policy by surveying the business owners and residents of Watts in order to find out what problems most concern the community and determine how the Council District can support positive change. In addition to surveys, WCS also aims to increase collaboration and organization between small businesses, community-based organizations and faith-based organizations by conducting focus groups (WCS 2015).

Chinatown Community for Equitable Development (CCED)

Chinatown Community for Equitable Development (CCED) is a multiethnic coalition that was founded in May 2012 (Nguyen 2014). CCED was founded to advocate for Chinatown's small businesses whose tenure and survival was threatened by the development of the Chinatown Wal-Mart. The organization's larger goals include preserving the cultural integrity and character of the neighborhood and advocating for the rights of long term residents to live and work in the area. While Chinatown has changed due to light rail expansion and the increased development interest it prompted, residents can be assured that CCED will provide them a voice in the development process.

Trust for Public Land

Trust for Public Land works to create greenspace in cities across the nation. The organization's Los Angeles office recently worked with the City and Watts community residents to transform an abandoned lot near the Metro Blue Line into community serving park space (Trust for Public Land, personal communication April 6, 2015). Development interest spurred by TOD can provide increased community amenities like greenspace in urban neighborhoods. The Trust for Public Land's efforts show that community driven advocacy can create these improvements in underinvested neighborhoods that need them most.

LA Voice

LA Voice was founded in the year 2000 and organizes to increase leadership capacity in Los Angeles working class communities (LA Voice). The organization is involved in a number of issues including housing and workers rights in rapidly changing Los Angeles neighborhoods (LA Voice, personal communication, April 10, 2015). The organization has also conducted community visioning exercises around Metro owned properties near the Metro Red Line. The organization's advocacy work has amplified the voices of low income residents so development and neighborhood improvements benefit all residents.

Key Interview Questions
<u>How has Transit Oriented Development (TOD) impacted the study areas?</u>

We asked questions about how TOD had impacted the study areas in question. Before proceeding to other interview questions, it was important to understand what changes due to TOD that the interviewees identified. This line of question provides an opportunity to better understand community experience through the eyes of those who live and work in the area. Assessing the perceived impacts on each study area enabled the team to compare the effects of TOD across geographic areas.
<u>How effective have local communities been in controlling the outcomes of TOD?</u>

The next set of questions pertains to how CBOs and agencies have influenced the outcomes of TOD in a geographic area. Our interview team was looking for both concrete examples of successful and unsuccessful campaigns or strategies to influence the results of TOD, as well as general issues that had arisen in specific areas that were experiencing TOD growth. In the end, the responses to this line of questioning form the basis for a set of recommendations to address ongoing concerns in the TOD process.
<u>What is the relationship between CBOs and governmental agencies in the TOD process?</u>

A key focus of study for the project is the amount of community input in the development of Metro's rail system. Ideally, there would be a high level of collaboration and coordination between the governmental agencies overseeing the construction of transit lines (and the subsequent urban growth patterns) and the local communities that experience these impacts. The research team was interested in understanding the degree of coordination (if any) between government agencies charged with the development of transit and the communities that they are ostensibly there to serve.

What more can be done to allow station area residents and community groups to influence the TOD process from conception, design, and realization?

Finally, our team was interested in what were the internal and external factors, such as staff availability or professional relationships that limited the effectiveness of CBOs and governmental agencies in impacting the TOD process. Governmental agencies are primarily responsible for the design and implementation of a transit system; CBOs can work through the public process or informal channels to minimize undesirable outcomes in the development.

Appendix O. Detailed Assessments for LA Ground-Truthing Case Studies

Chinatown Detailed Assessment

For the Chinatown case study, we surveyed 21 street block segments along the streets of Hill, Broadway, Spring, Alameda, Alpine, College, Llewellyn, Gin Ling, Mei Ling, and Sun Mun within the quarter-mile buffer from the station, and Grand and Cesar Chavez within the half-mile buffer (See Figure O.1). Additionally, we sampled 19 residential parcels and seven commercial parcels. Parcels observed included parcels on Stadium, Coronel, Bernard, Hill, Broadway, Yale, and Alpine (See Figure O.2). As mentioned above, our observed parcels had a 95% match with the assessor data in residential land use.

Our observations captured relatively little commercial change and only very early signs of residential gentrification. Most of the blocks surveyed were predominantly commercial, many (about 30%) with retail or mixed-use (about 21%). There was no new commercial construction visible in the surveyed blocks. About 80% of the commercial blocks had recent renovations; however, most of the renovations were minor. Only two blocks had signs of upscale landscaping, while we noticed "green" or upscale vehicles only in one block. We only observed one commercial "For Lease" sign. Similarly, in the seven commercial parcels surveyed, the buildings appeared as "average" while five parcels did not show any renovation, although two had newly constructed properties.

Chinatown, additionally, had the highest concentration of ethnic commercial presence of all the case study areas. About 50% of the blocks had indicators showing ethnic business and goods, and over 65% of commercial blocks (or 14 blocks) had non-English signs. Chinatown's commercial presence was comprised of primarily older, established businesses with very few indications of commercial gentrification (no new boutique stores, yoga studios, high-end grocery stores, artsy spaces, or the like). Over 70% of the commercial parcels surveyed appeared roughly the same in appearance to the surrounding neighborhood context, and none had upscale signage that looked out of place (e.g., appeals to a certain lifestyle or type of shopper). However, the area had the highest presence of specialty food shops of the case study areas, possibly targeting visitors and tourists.

Our observations differ from those of representatives from CBOs, who expressed concerns that a growing number of new neighborhood businesses are not catering to the needs of long-term Chinatown residents, such as culturally appropriate retail that meets the needs of the elderly, affordable food and retail, and in some cases, jobs. Representatives from CBOs indicated that new development and incoming retailers like Starbucks and Walmart are instead catering to new residents or more affluent commuters (Southeast Asian Community Alliance, SEACA, personal communication, February 4, 2015).

According to CBO representatives interviewed, business turnover and displacement has also led some long-term residents to leave their homes because they no longer feel a cultural and economic connection to Chinatown (SEACA, personal communication, February 4, 2015). With the increase in new development, the businesses that provide goods, services, and even jobs are getting displaced (SEACA, personal communication, February 4, 2015).

Our observations did capture some signs of residential gentrification, which coincided with CBO concerns and the findings of our gentrification model. We observed one block with new residential construction, one block that had properties with upscale landscaping, and two blocks that had upscale or green vehicles parked on the street (See Table AI.2 in Appendix I). About 57% of the surveyed blocks had residential renovations, which were mostly minor. These low numbers and percentages, however, are due to the fact that most blocks surveyed were commercial rather than residential – with the residential blocks surveyed being mostly along Grand and Cesar Chavez – since residential land uses were uncommon in the areas immediately adjacent to the Metro rail station.

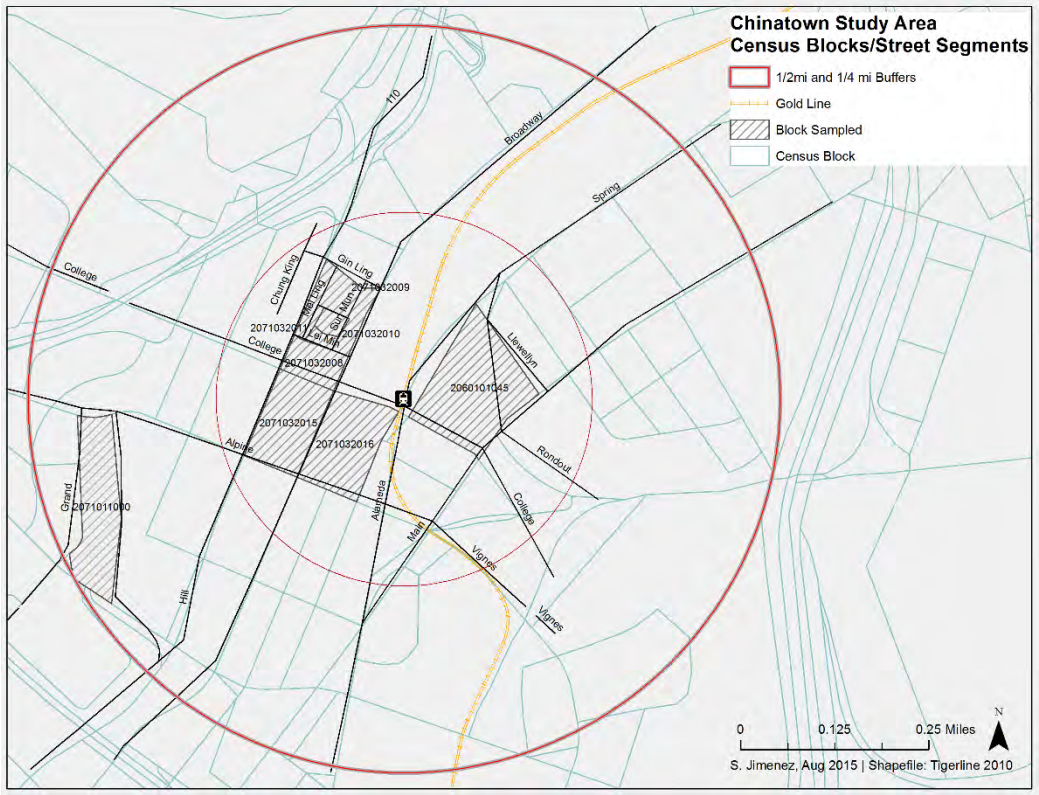

Figure O.1: Blocks Surveyed for Chinatown Study Area

Of the residential parcels surveyed, eight were single-family, five were multi-family with less than five units, and four were multi-family with five or more units. Chinatown also had the highest prevalence of new construction on residential parcels. About 65% of the surveyed residential parcels appeared to have new construction, over twice the percentage for Watts and seven times the percentage for Hollywood, which may be attributed to Chinatown's proximity to Downtown. This may indicate a quickly growing residential segment of the Chinatown area. Additionally, about one-fourth of residential parcels surveyed had upscale landscaping and one-fourth were newly renovated.

Figure O.2: Parcels Surveyed for Chinatown Study Area

A total of eight blocks had parking meters, two had residential permit parking, while three blocks had street or sidewalk improvements. Bus stop shelters and bike infrastructure were present on one bock. Additionally, way finding signage and Chinatown banners were common. Chinese architecture, arches, and street art were also present. Although over 60% of the blocks observed did not have much pedestrian traffic, our observations captured a diverse population in the area, which included not only Asians but also Latinos and non-Hispanic whites.

In the recent decades, Chinatown has experienced change along the outskirts of the half-mile radius around the station, but not close to the station where most of the commercial parcels exist. Our observations captured some of the residential changes that have occurred along the outskirts. However, due to limited parcel sampling and the fact that some new developments are only forthcoming, we failed to pick up some of the changes that many community groups see and fear – such as the Grand Plaza development on Cesar Chavez Avenue or the newly proposed College Station development. Given the high number of renters in the area, CBOs worry that real estate speculation may force long-term, low-income renters out of the neighborhood.

Some affordable housing units are also threatened; Chinatown has had affordable senior housing since the 1980s but many of the affordable units have expired or are set to expire (Chinatown Community for Equitable Development, personal communication, April 15, 2015). As a result, according to CBO representatives, some affordable senior units are converting into market-rate units. This conversion is often initiated by landlords, who turn over the building and ask for higher rents when the affordability requirements expire. CBOs are concerned with how the conversion of affordable units into market-rate units may displace Chinatown's long-term residents. They believe that real estate developers see an opportunity to attract higher returns on their developments,

which may have negative effects for a neighborhood like Chinatown that has many low-income residents.

Strong relationships between CBOs and public agencies in TOD areas are necessary to develop plans and polices to encourage development that provides community benefits through equity provisions. In the Chinatown area, this discussion is mostly happening through the city planning department's Cornfield Arroyo Seco Specific Plan (CASP), which includes density bonuses to encourage the development of affordable housing units.

Hollywood/Western Detailed Assessment

For the Hollywood/Western area, we surveyed 20 block segments, which included blocks along Hollywood, Western, Saint Andrews, Serrano, Carlton, Russell, and Harvard within the quarter-mile buffer from the station, and streets such as Sunset, Kingsley, and Winona within the half-mile buffer (See Figure O.3). Additionally, we sampled 46 residential parcels and two commercial parcels. Parcels observed were on Hobart, Sunset, Loma Linda, Serrano, Carlton, Harold, Harvard, Garfield, Oxford, Gramercy, and Western (See Figure O.4). Our observed parcels in this neighborhood had a 93% match with assessor data in residential land use.

Our gentrification model shows that only the area southwest of the Metro station appears to have gentrified in the last decade, while the area to the southeast has undergone little development or change. Further, no tracts north of the Metro station appear to be eligible for gentrification. Our ground-truthing observations, however, capture more signs of gentrification than those shown in the model.

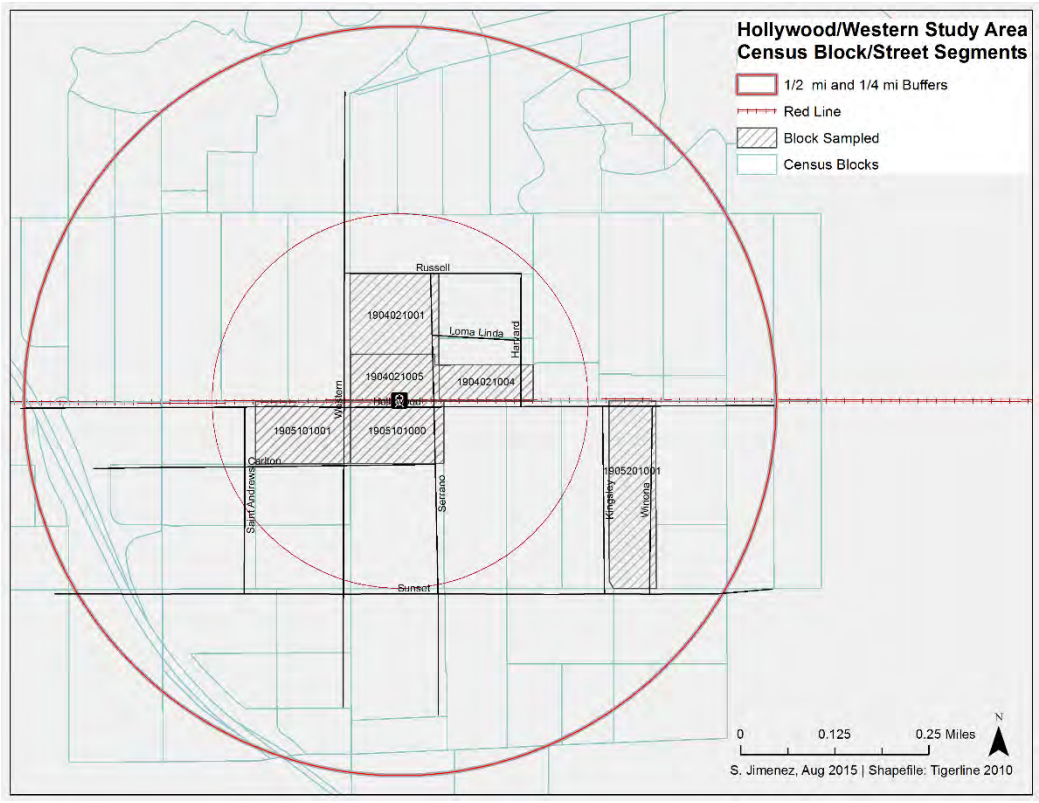

Figure O.3: Blocks Surveyed for Hollywood/Western Study Area

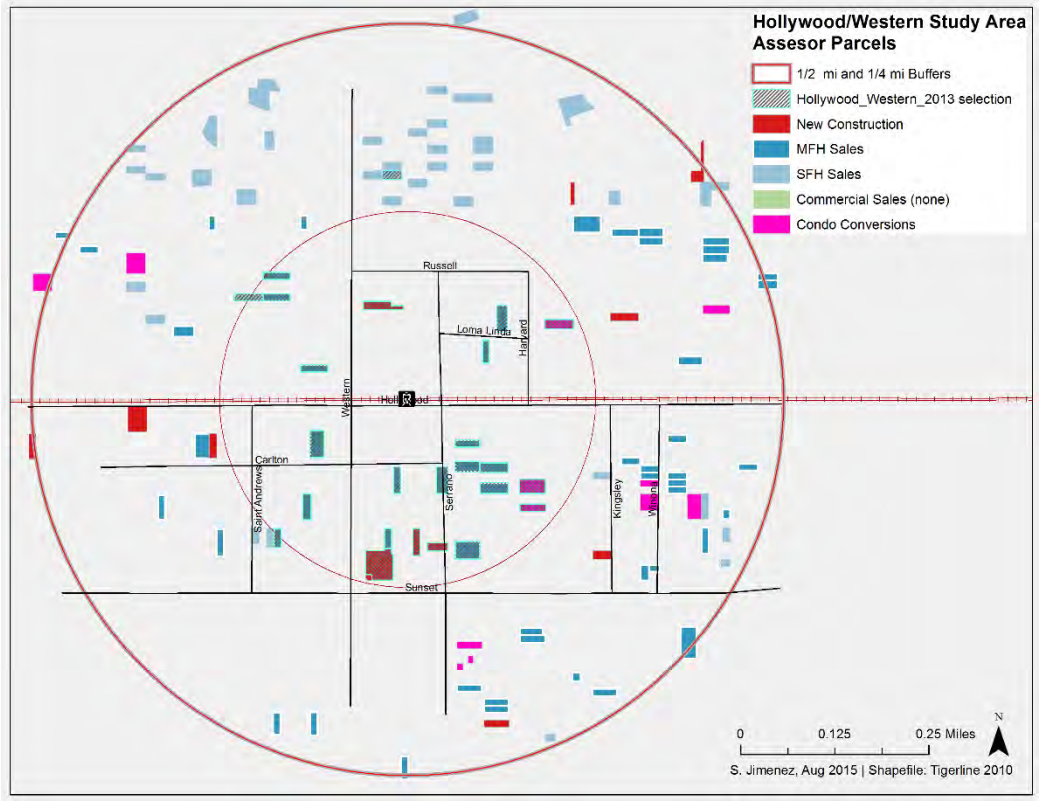

Figure O.4: Parcels Surveyed for Hollywood/Western Study Area

Hollywood/Western showed clear signs of late-stage commercial and residential gentrification. Surrounding the station itself are primarily commercial businesses, mostly retail or mixed-use. Although Hollywood/Western is still dominated by small, older, well-established stores, it also has indications of commercial gentrification. This area had the highest percentage of new construction in the commercial block surveyed – about 15%. About 15% of the surveyed blocks had minor or moderate renovations, while only one block had properties with some upscale landscaping (patio furniture, plants, and decorative fencing).

The two commercial parcels observed had both multi-story new constructions, making them out of context from the surrounding parcels. Additionally, one block had a yoga studio and one a specialty food shop, and one multi-story use building housed a Starbucks, a Crossfit specialty gym, and many brand-named retail stores, indicating some stereotypical signs of gentrification. One-fourth of the blocks surveyed having some non-English signs and ethnic businesses. These included mostly signs in Thai, which is expected, given the presence of Thai Town. Yet, upon one visit, the Thai restaurants seemed to cater towards a diverse and younger crowd. One block also housed an ethnic institution (a Korean church). Block segment observations also indicated signs of ethnic presence such as posters, a painted utility box, and a mural commemorating the Armenian genocide.

Additionally, Hollywood/Western showed multiple signs of residential gentrification. About 20% of the blocks surveyed had new construction, which is the highest amongst the case study areas, and about 40% showed signs of moderate renovation. Half of the blocks observed had upscale landscaping, the most amongst the case studies, and 35% had upscale or green vehicles. Moreover, many blocks had signs indicating territoriality – six blocks had anti-trespassing signs, while six

other blocks had other signage such as “Property closed to the public”, “Security camera”, or “Reserved parking.”

Of the residential buildings, 9% were new, 27% renovated, and 36% with ongoing renovations. The vast majority were ranked as average (61%), or above average (22%). Only two (9%) buildings were lower end and out of place relative to the neighborhood scale and character. Many of the residential blocks also had “for rent” signs, including one that “Welcomed Section 8.”

Hollywood/Western has less public infrastructure than Chinatown, but the highest percentage for bike infrastructure (25% or 4 blocks). Hollywood/Western had more pedestrian activity than the other case-study neighborhoods. About 10% of blocks were perceived as busy in terms of pedestrian traffic, while 35% were moderately busy. Whites, Latinos, blacks, and Asians were all observed walking or biking in the area.

Representatives of community-based groups interviewed noted the residential gentrification that the area is experiencing. One organizer estimated that 30 percent of a Hollywood church congregation has moved to San Fernando Valley because of rising rents in Hollywood (LA Voice, personal communication, April 10, 2015).

The Hollywood/Western TOD area has a high potential for gentrification. However, the gentrification impact may be moderated by community and CBO intervention and the implementation of the Vermont/Western Transit Oriented District SNAP adopted in 2001. The plan mandates equitable development through its community benefit elements. For example, SNAP’s child care facility component requires mixed-use or commercial projects with 100,000 square feet or more of nonresidential floor area to include childcare facilities to accommodate the needs of employees.

Thai Community Development Center (Thai CDC) and East Hollywood Neighborhood Council, along with Metro are trying to form a partnership to create a small business incubator near the Hollywood/Western Station (personal communication, March 9, 2015). However, where CBOs are not actively involved in neighborhood councils, there is potential that they may be left out of the planning process.

103rd St./ Watts Towers Detailed Assessment

For 103rd St./Watts Towers, we surveyed about 31 block segments, which included blocks on Century, 103rd St,104th, 105th, Compton, Grandee, Graham, Beach, Holmes, Kimberly, Bandera, Wilmington, Anzac, Grape, and Hickory (Figure O.5). Additionally, we sampled 46 residential parcels and three commercial parcels (Figure O.6). The observed parcels had 89% match with assessor data in residential land use.

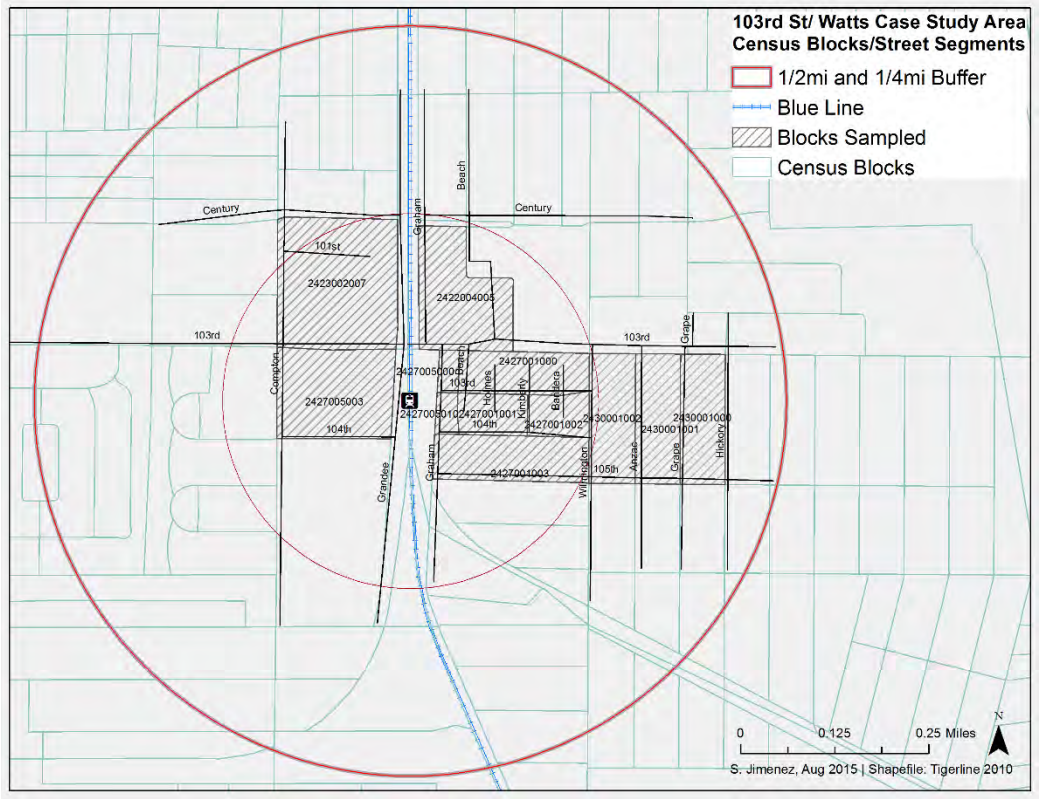

Figure O.5: Blocks Surveyed for 103rd St./Watts Towers Study Area

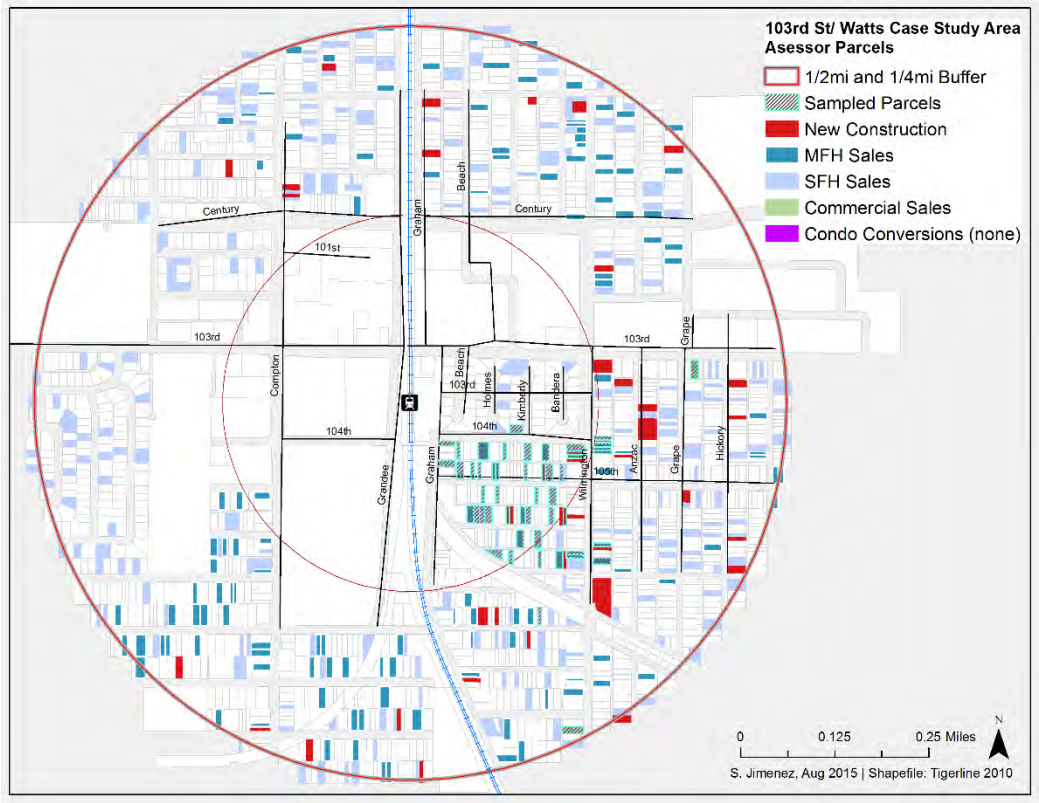

Figure O.6: Parcels Surveyed for 103rd St/Watts Towers Study Area

Our model of gentrification shows that although 103rd St./Watts is eligible for gentrification in that it is a disadvantaged disinvested neighborhood, the area has little signs of development in the last decades. Our ground-truthing observations are consistent with this finding.

Although the oldest of the Metro rail stations in our study, it showed very few signs of commercial gentrification. Only about 6% of the surveyed block segments showed signs of new commercial construction with mostly minor, cosmetic renovations. The few newly constructed commercial properties housed mostly small mom-and-pop stores. There was only one block dominated by commercial and retail uses, the Martin Luther King Shopping Center; most of the businesses there appeared to cater to a lower-income demographic. Examples of retail establishments include Food 4 Less, Popeye's, Burger King, and small hair salons. Only one block had upscale landscaping or green vehicles (See Table AI.1 in Appendix I).

While commercial land uses were infrequently observed in Watts; we noticed a significant institutional presence, making up about 13% of the total observed land uses in the surveyed blocks. The largest institution is the Watts Health Center. Additionally, the surveyed area included the St. Lawrence of Brindisi Elementary School and St. Lawrence of Brindisi Church.

Residential development, on the other hand, did show some moderate signs of gentrification. A large proportion of the blocks surveyed were residential, about 40% single-family and 31% multi-family. About 9% of the blocks appeared to have new residential construction, mostly along Wilmington. Renovated homes were present on about 84% of the surveyed blocks. However, many renovations seemed to be minor and solely cosmetic. While there appears to have recently been a high amount of transactional activity in residential parcels, a change in ownership has only occasionally resulted in the improvement of a parcel's appearance.

Of the residential parcels, about 71% were single-family and the rest were multi-family containing between two and four units. In total, approximately a quarter of the residential units appeared to be newly constructed, and more than a third were either in the process of renovation or appeared to have been recently renovated. Additionally, roughly a fifth of the units appeared to be significantly more upscale than their surrounding units, while only two units were significantly downscale compared to their neighbors.

The 103rdSt./Watts Station had the most security signage compared to the other case study areas. Of the 31 blocks, two had neighborhood watch signs, five had anti-littering or graffiti signage, 12 had anti-trespassing signage, and 13 had other types of signs, such as "no parking," "security surveillance," and "beware of dog." Several houses also had bars on the windows, while the majority of houses had high fences or gates. The prominence of these characteristics indicated the need or desire for more safety in the area.

In regards to public infrastructure, seven blocks had pedestrian streetlights, six blocks had bike infrastructures, five blocks had bus stop shelters and street infrastructure, and three blocks had public trashcans. Thirteen of the blocks surveyed (42%) had sidewalk improvements. Trees and public murals were also present. However, the neighborhood also had signs of disorder such as alleyways and vacant lands serving as dumping grounds.

Our observations and model results echo the experience of community groups in the Watts neighborhood – confirming the lack of noticeable changes near the 103rd St./Watts Towers metro station. Not captured by the physical observations of the community or by the gentrification model,

however, is the day-to-day experience of some Watts residents. South Los Angeles CBOs have discussed many instances of illegal evictions and slum conditions in South Los Angeles (personal communication, April 16, 2015).

Since the area is gentrification-eligible but does not yet show major evidence of gentrification, proactive community-public partnerships, if formed early, may help prevent future displacement and achieve a more equitable development model. As TOD plans are developed for the area, community benefits should also be put in place through equity provisions. For example, one tool for potential collaboration is the Jordan Downs Urban Village Specific Plan, which has the goal to create high-quality transit areas, protect community resources, and provide equitable economic opportunities.[11] The Jordan Downs Urban Village Specific Plan aims to improve connectivity for the aging Jordan Downs public housing project, which is located a half-mile west of the rail station. This plan has the potential to transform Jordan Downs into a mixed-income development (City of Los Angeles, 2012).

[11] The specific plan is available online at: http://cityplanning.lacity.org/staffrpt/initialrpts/CPC-2010-31.pdf

Appendix P. Bay Area UrbanSim Models as Used in Plan Bay Area

This Appendix describes each of the models used in the Bay Area application of UrbanSim for the PlanBayArea project, and is intended as a more detailed reference for the base implementation for the current project. The changes in the preceding sections were applied to an updated version of the models as described below.

The sequence of the presentation of the models is organized approximately in the order of their execution within each simulated year, but in some cases they are grouped for clarity of exposition. All of the models operate as microsimulation models that update the state of individual agents and objects: households, businesses, parcels and buildings. The state of the simulation is updated by each model, and results are stored in annual steps from the base year of 2010 that the model uses as its initial conditions, to the end year of 2040 for each scenario that is simulated.

Business Transition Model

Objective

The Business Transition Model predicts new establishments being created within or moved to the region by businesses, or the loss of establishments in the region - either through closure of a business or relocation out of the region.

Employment is classified by the user into employment sectors based on aggregations of Standard Industrial Classification (SIC) codes, or more recently, North American Industry Classification (NAICS) codes. Typically sectors are defined based on the local economic structure. Aggregate forecasts of economic activity and sectoral employment are exogenous to UrbanSim, and are used as inputs to the model. The base year UrbanSim employment data for the MTC application were obtained from ABAG. The employment sectors adopted for this application are shown in Table AL.1. The Business Transition Model integrates exogenous forecasts of aggregate employment by sector with the UrbanSim database by computing the sectoral growth or decline from the preceding year, and either removing establishments from the database in sectors that are declining, or queuing establishments to be placed in the Business Location Choice Model for sectors that experience growth. If the user supplies only total employment control totals, rather than totals by sector, the sectoral distribution is assumed consistent with the current sectoral distribution. In cases of employment loss, the probability that an establishment will be removed is assumed proportional to the spatial distribution of establishments in the sector. The establishments that are removed vacate the space they were occupying, and this space becomes available to the pool of vacant space for other establishments to occupy in the location component of the model. This procedure keeps the accounting of land, structures, and occupants up to date. New establishments are not immediately assigned a location. Instead, new establishments are added to the database and assigned a null location, to be resolved by the Business Location Choice Model.

Algorithm

The model compares the total number of jobs by sector in the establishments table at the beginning of a simulation year, to the total number of jobs by sector specified by the user in the annual employment control totals for that year. If the control total value is higher, the model adds the

necessary number of establishments to the establishments table by sampling existing establishments of the same sector and duplicating them until enough jobs have been added. If the control totals indicate a declining job count for a sector then the appropriate number of establishments in the data are selected at random and removed. The role of this model is to keep the number of jobs in the establishments data in the simulation synchronized with aggregate expectations of employment in the region. In most current applications, control totals are separately specified for each sector and split by a proportion that is assumed to be home-based employment vs non-home-based employment. These two are handled by different model groups in the establishment location choice model.

Table P.1: Employment Sectors

Sector ID	Sector Description
1	Professional services
2	Finance, insurance, and real estate
3	Business services
4	Agriculture
5	Natural resources
6	Arts and recreation
7	Government
8	Other education
9	Logistics
10	Eating and drinking
11	Regional retail
12	Social services
13	Leasing
14	Heavy manufacturing
15	Health
16	Local retail
17	Transportation
18	Higher education
19	Utilities
20	Construction
21	Biotechnology
22	Light manufacturing
23	Information
24	Hotel
25	Tech manufacturing
26	Personal services
27	K-12 education
28	Unclassified

Configuration

The configuration of the Business Transition Model in the parcel model system is summarized in the following table:

Table P.2: Configuration of Business Transition Model

Element	Setting
Agent	Establishments
Dataset	Establishments
Model Structure	Rule Based

Data

The following tables are used in the Business Transition Model in the parcel version of UrbanSim.

Table P.3: Data Used by Business Transition Model

Table Name	Brief Description
annual_business_control_totals	Annual aggregate control totals for employment by sector
jobs	jobs (synthesized from ABAG zonal employment by sector)

Household Transition Model

Objective

The Household Transition Model (HTM) predicts new households migrating into the region, or the loss of households emigrating from the region.

The Household Transition Model accounts for changes in the distribution of households by type over time, using an algorithm analogous to that used in the Business Transition Model. In reality, these changes result from a complex set of social and demographic changes that include aging, household formation, divorce and household dissolution, mortality, birth of children, migration into and from the region, changes in household size, and changes in income, among others. The data (and theory) required to represent all of these components and their interactions adequately are complex, and although these behaviors have been recently implemented in UrbanSim they were not available for use within the time constraints of this project. In this application, the Household Transition Model, like the Business Transition Model described above, uses external control totals of population and households by type (the latter only if available) to provide a mechanism for the user to approximate the net results of these changes. Analysis by the user of local demographic trends may inform the construction of control totals with distributions of household size, age of head, and income. If only total population is provided in the control totals, the model assumes that the distribution of households by type remains static.

As in the business transition case, newly created households are added to a list of movers that will be located to submarkets by the Household Location Choice Model. Household removals, on the other hand, are accounted for by this model by removing those households from the housing stock,

and by properly accounting for the vacancies created by their departure. The household transition model is analogous in form to the business transition model described above. The primary household attributes stored on the household table in the database are shown in Table P.4. Income and persons are the most commonly used attributes to include in the control totals in order to be able to set household targets for income and household size distribution in future years.

Table P.4: Household Attributes

Characteristic	Description
Tenure	Rent or Own
Building Type	Single Family Detached, Single Family Duplex, Apartment, Townhouse, Group Quarters
Income	Annual Household Income
Persons	Total Persons in Household
Children	Number of Children (under 18) in Household
Race	Race of Head of Household
Workers	Number or Workers in Household
Vehicles	Number of Vehicles

Algorithm

The model compares the total number of households (by type) in the households table at the beginning of a simulation year, to the total number of households (by type) specified by the user in the annual household control totals for that year. If the control total value is higher, the model adds the necessary number of households to the household table by sampling existing households (of the same type) and duplicating them. If the control totals indicate a declining household count (by type) then the appropriate number of households in the data are selected at random and removed. The role of this model is to keep the household data in the simulation synchronized with aggregate expectations of population and households. Note that the model can be configured by the user's choice of specification of the annual control totals. If no household characteristics are included in the control totals, then the synchronization is done for the total number of households. Otherwise it is done by the categories present in the control totals.

Configuration

The configuration of the HTM in the parcel model system is summarized in the following table:

Table P.5: Configuration of Household Transition Model

Element	Setting
Agent	Household
Dataset	Household
Model Structure	Rule Based

Data

The following tables are used by the Household Transition Model in the parcel version of UrbanSim.

Table P.6: Data Used by Household Transition Model

Table Name	Brief Description
annual_household_control_totals	Annual aggregate control totals for households, optionally by type
households	Synthesized households
persons	Synthesized persons

Business Relocation Model

Objective

The Business Relocation Model predicts the relocation of establishments within the region each simulation year.

Employment relocation and location choices are made by firms. In the current version of UrbanSim, we use establishments as the units of analysis (specific sites/branches of a firm). The Business Relocation Model predicts the probability that establishments of each type will move from their current location or stay during a particular year. Similar to the economic transition model when handling job losses in declining sectors, the model assumes that the probability of moving varies by sector but not spatial characteristics. All placement of establishments is managed through the business location choice model.

As in the case of job losses predicted in the economic transition component, the application of this model requires subtracting jobs by sector from the buildings they currently occupy, and the updating of the accounting to make this space available as vacant space. These counts will be added to the unallocated new jobs by sector calculated in the economic transition model. The combination of new and moving jobs serve as a pool to be located in the employment location choice model. Vacancy of nonresidential space will be updated, making space available for allocation in the employment location choice model.

Since it is possible that the relative attractiveness of commercial space in other locations when compared with an establishment's current location may influence its decision to move, an alternative structure for the mobility model could use the marginal choice in a nested logit model with a conditional choice of location. In this way, the model would use information about the relative utility of alternative locations compared to the utility of the current location in predicting whether jobs will move. While this might be more theoretically appealing than the specification given, it is generally not supported by the data available for calibration. Instead, the mobility decision is treated as an independent choice, and the probabilities estimated by annual mobility rates directly observed over a recent period for each sector.

Algorithm

The Business Relocation Model is implemented as a cross-classification rate-based model, with a probability of moving by employment sector applied to each establishment, each simulation year. For example, if an establishment is in the retail sector, their probability of moving would be looked up by finding the retail sector entry in the annual_business_relocation_rates table. Let's assume the rate in the table is .25. This means there is a 25% chance the job will move in any given year, and 75% chance they will not move in that year. The model uses Monte Carlo Sampling to determine the outcome. It works by drawing a random number (from the uniform distribution, between 0 and 1), and comparing that random draw to the probability of moving for each household. So with our example establishment's probability of 0.75 that they will stay, if we draw a random number with a value higher than 0.75, we will predict that the job will move in that year.

The outcome of the model is implemented as follows. If an establishment is determined to be a mover because the random draw is greater than (1 - their move probability), then they are moved out of their current location. In practical terms, their building_id, which identifies where they are located, is simply reset to a null value. They remain in the jobs table but temporarily have no assignment to a location.

In the current application of the model in the Bay Area, the relocation rates for establishments was assumed to be zero, due to a combination of data limitations and time constraints to calibrate the model with non-zero relocation rates. This makes the location choices of businesses fixed once the establishment is assigned to a location.

Configuration

The configuration of the BRM is summarized in the following table:

Table P.7: Configuration of Business Relocation Model

Element	Setting
Agent	Establishment
Dataset	Establishment
Model Structure	Cross-classification rate-based Model

Data

The following tables are used in the Business Relocation Choice model:

Table P.8: Data Used by Employment Relocation Model

Table Name	Brief Description
annual_business_relocation_rates	Annual relocation rates for establishments by sector
establishments	establishments

Household Relocation Model

Objective

The Household Relocation Model predicts the relocation of households within the region each simulation year.

The Household Relocation Model is similar in form to the Employment Relocation Model described above. The same algorithm is used, but with rates or coefficients applicable to each household type. For households, mobility probabilities are based on the synthetic population from the MTC Travel Model. This reflects differential mobility rates for renters and owners, and households at different life stages.

Application of the Household Relocation Model requires subtracting mover households by type from the housing stock by building, and adding them to the pool of new households by type estimated in the Demographic Transition Model. The combination of new and moving households serves as a population of households to be located by the Household Location Choice Model. Housing vacancy is updated as movers are subtracted, making the housing available for occupation in the household location and housing type choice model.

An alternative approach configuration is to structure this as a choice model, and specify and estimate it using a combination of household and location characteristics. This could be linked with the location choice model, as a nested logit model. This was not possible to implement in this application due to limitations in the available household travel survey, which did not contain information on relocation of households from their previous residence to their current location.

Algorithm

The Household Relocation Model is implemented as a cross-classification rate-based model, with a probability of moving by age and income category applied to each household in the synthetic population, each simulation year. For example, if a household has head of age 31 and an income of 47,500, their probability of moving would be looked up by finding the interval within the age and income classes in the annual_household_relocation_rates table. Let's assume the rate in the table is .25. This means there is a 25% chance the household will move in any given year, and 75% chance they will not move in that year. The model uses Monte Carlo Sampling to determine the outcome. It works by drawing a random number (from the uniform distribution, between 0 and 1), and comparing that random draw to the probability of moving for each household. So with our example household's probability of 0.75 that they will stay, if we draw a random number with a value higher than 0.75, we will predict that the household will move in that year. The outcome of the model is implemented as follows. If a household is determined to be a mover because the random draw is greater than (1 - their move probability), then they are moved out of their current location. In practical terms, their building_id, which identifies where they are located, is simply reset to a null value. They remain in the household table but do not have a location.

Configuration

The configuration of the HRM is summarized in the following table:

Table P.9: Configuration of Household Relocation Model

Element	Setting
Agent	Household
Dataset	Household
Model Structure	Cross-classification rate-based Model

Data

The following tables are used in this model.

Table P.10: Data Used by Household Relocation Model

Table Name	Brief Description
annual_household_relocation_rates	Annual relocation rates for households by type
households	Synthesized households

Household Tenure Choice Model

Objective

The Household Tenure Choice Model predicts whether each household chooses to rent or own a housing unit each simulation year.

Algorithm

The Household Tenure Choice Model is structured as a choice model using a binary logit specification, and uses a combination of household characteristics to predict the relative probability of owning vs renting. A tenure outcome is predicted using Monte Carlo sampling as described previously, comparing a value drawn randomly from a uniform distribution to the probability of owning predicted by the binary logit model in order to assign a tenure status. Once a tenure is assigned, the household is active only in that side of the housing market: if they are determined to be a renter, then in the Household Location Choice Model they only consider rental housing units to locate in. Similarly for owner households, they only look at properties that are available for sale as owner-occupied units.

Configuration

The configuration of the HTCM is summarized in the following table:

Table P.11: Configuration of Household Tenure Choice Model

Element	Setting
Agent	Household
Dataset	Household
Model Structure	Binary Logit Model

Data

The following tables are used in this model.

Table P.12: Data Used by Household Tenure Choice Model

Table Name	Brief Description
households	Synthesized households

Business Location Choice Model

Objective

The Business Location Choice Model predicts the location choices of new or relocating establishments.

In this model, we predict the probability that an establishment that is either new (from the Business Transition Model), or has moved within the region (from the Business Relocation Model), will be located in a particular employment submarket. Submarkets are used as the basic geographic unit of analysis in the current model implementation. Each business has an attribute of space it needs based on the employment within the establishment, and this provides a simple accounting framework for space utilization within submarkets. The number of locations available for an establishment to locate within a submarket will depend mainly on the total square footage of nonresidential floorspace in buildings within the submarket, and on the density of the use of space (square feet per employee).

The model is specified as a multinomial logit model, with separate equations estimated for each employment sector. For both the business location and household location models, we take the stock of available space as fixed in the short run of the intra-year period of the simulation, and assume that locators are price takers. That is, a single locating establishment or household does not have enough market power to influence the transaction price, and must accept the current market price as given. However, the price is iteratively adjusted to account for market equilibrating tendencies as the aggregated demand across all agents increases in some submarkets and decreases in others. This topic is described in a later section on market price equilibration.

The variables included in the business location choice model are drawn from the literature in urban economics. We expect that accessibility to population, particularly high-income population, increases bids for retail and service businesses. We also expect that two forms of agglomeration economies influence location choices: localization economies and inter-industry linkages.

Localization economies represent positive externalities associated with locations that have other firms in the same industry nearby. The basis for the attraction may be some combination of a shared skilled labor pool, comparison shopping in the case of retail, co-location at a site with highly desirable characteristics, or other factors that cause the costs of production to decline as greater concentration of businesses in the industry occurs. The classic example of localization economies is Silicon Valley. Inter-industry linkages refer to agglomeration economies associated with location at a site that has greater access to businesses in strategically related, but different, industries. Examples include manufacturers locating near concentrations of suppliers in different industries, or distribution companies locating where they can readily service retail outlets.

One complication in measuring localization economies and inter-industry linkages is determining the relevant distance for agglomeration economies to influence location choices. At one level, agglomeration economies are likely to affect business location choices between states, or between metropolitan areas within a state. Within a single metropolitan area, we are concerned more with agglomeration economies at a scale relevant to the formation of employment centers. The influence of proximity to related employment may be measured using two scales: a regional scale effect using zone-to-zone accessibilities from the travel model, or highly localized accessibilities using queries of the area immediately around the given parcel. Most of the spatial queries used in the model are of the latter type, because the regional accessibility variables tend to be very highly correlated, and because agglomerations are expected to be very localized.

Age of buildings is included in the model to estimate the influence of age depreciation of commercial buildings, with the expectation that businesses prefer newer buildings and discount their bids for older ones. This reflects the deterioration of older buildings, changing architecture, and preferences, as is the case in residential housing. There is the possibility that significant renovation will make the actual year built less relevant, and we would expect that this would dampen the coefficient for age depreciation. We do not at this point attempt to model maintenance and renovation investments and the quality of buildings.

Density, the inverse of lot size, is included in the location choice model. We expect businesses, like households, to reveal different preferences for land based on their production functions and the role of amenities such as green space and parking area. As manufacturing production continues to shift to more horizontal, land-intensive technology, we expect the discounting for density to be relatively high. Retail, with its concentration in shopping strips and malls, still requires substantial surface land for parking, and is likely to discount bids less for density. We expect service firms to discount for density the least, since in the traditional urban economics models of bid-rent, service firms generally outbid other firms for sites with higher accessibility, land cost, and density.

We might expect that certain sectors, particularly retail, show some preference for locations near a major highway, and are willing to bid higher for those locations. Distance to a highway is measured in meters, using grid spatial queries. We also test for the residual influence of the classic monocentric model, measured by travel time to the CBD, after controlling for population access and agglomeration economies. We expect that, for most regions, the CBD accessibility influence will be insignificant or the reverse of that in the traditional monocentric model, after accounting for these other effects.

Estimation of the parameters of the model is based on a geocoded establishment file (matched to the parcel file to link employment by type to land use by type). A sample of geocoded establishments in each sector is used to estimate the coefficients of the location choice model. As

with the Household Location Choice Model, the application of the model produces demand by each employment type for building locations.

The independent variables used in the business location choice model can be grouped into the categories of real estate characteristics, regional accessibility, and urban-design scale effects as shown below:

- Real Estate Characteristics
  - Prices
  - Development type (land use mix, density)
- Regional accessibility
  - Access to population
  - Travel time to CBD, airport
- Urban design-scale
  - Proximity to highway, arterials
- Local agglomeration economies within and between sectors: center formation

Algorithm

Jobs to be located by this model are those that were added by the EmploymentTransitionModel or predicted to move by the EmploymentRelocationModel. The model selects all those jobs with no location, and identifies all available, vacant nonresidential space within the simulation year. Since the choice sets are generally too large, normally random sampling of alternatives is used to construct plausible sized choice sets. It then uses a Multinomial Logit Model structure to generate location choice probabilities across the choice set for each locating job. The location probabilities are used with Monte Carlo Sampling to make a determination for each job regarding which of the available locations they will choose. Once a job has chosen a location, that location is committed to the job (like a lease or purchase contract) and the space becomes unavailable for any other locating jobs, until such time as the occupying job is predicted to move.
In the current application, the Business Location Choice Model is run iteratively with a price adjustment component, to reflect a short-term price equilibration process.

Configuration

The configuration of the BLCM in the parcel model system is summarized in the following table:

Table P.13: Configuration of Bmployment Location Choice Model

Element	Setting
Agent	Establishment
Location Set	Employment submarkets - which are defined by jurisdiction, building type, and transit proximity.
Dependent Variable	Location of each establishment: employment_submarket_id
Model Type	Multinomial Logit Model
Estimation Method	Maximum Likelihood
Submodels	Sector - separate models are specified for groups of jobs by employment sector
Independent Variables	Attributes of submarkets: Price, density, accessibility, composition of households and employment

Data

The following tables are used by the Business Location Choice Model:

Table P.14: Data Used by Business Location Choice Model

Table Name	Brief Description
establishment	Establishments table with an inventory of employment
employment_sectors	Employment sectors, defined using NAICS or SIC classifications of industry
buildings	Buildings from which available non-residential sqft are evaluated for location
zones	Zones are used to compute density, social composition, and accessibility variables
travel_data	Skims from the travel model are used to compute accessibility variables

Household Location Choice Model

Objective

The Household Location Choice Model (HLCM) predicts the location choices of new or relocating renter and owner households.

In this model, as in the employment location model, we predict the probability that a household that is either new (from the transition component), or has decided to move within the region (from the household relocation model) and has determined whether to rent or own a unit (from the household tenure choice model), will choose a particular location defined by a residential submarket. As before, the form of the model is specified as multinomial logit, with random sampling of alternatives from the universe of submarkets with vacant housing.

For both the household location and business location models, we take the stock of available space as fixed in the short run of the intra-year period of the simulation, and assume that locators are price takers. That is, a single locating household does not have enough market power to influence the transaction price (or rent), and must accept the current market price as given. However, the price (or rent) is iteratively adjusted to account for market equilibrating tendencies as the aggregated demand across all agents increases in some submarkets and decreases in others. This topic is described in a later section on market price equilibration.

The model architecture allows location choice models to be estimated for households stratified by income level, the presence or absence of children, and other life cycle characteristics. Alternatively, these effects can be included in a single model estimation through interactions of the household characteristics with the characteristics of the alternative locations. The current implementation is based on the latter but is general enough to accommodate stratified estimation, for example by household income.

For the Bay Area application of the model, households are stratified by 4 income categories cross-classified with house- hold size of 1, 2, 3 or more. Income and household size provide a strong basis

for differentiating among consumers with substantially different preferences and trade-offs in location choices.

We further differentiate households by their tenure choice, given the importance of this distinction for understanding the impacts of housing prices and rents on location choices. Predictions of tenure for each household are made by the Household Tenure Choice Model, discussed in Section 4.5.

The variables used in the model are drawn from the literature in urban economics, urban geography, and urban sociology. An initial feature of the model specification is the incorporation of the classical urban economic trade-off between transportation and land cost. This has been generalized to account not only for travel time to the classical monocentric center, the CBD, but also to more generalized access to employment opportunities and to shopping. These accessibilities to work and shopping are measured by weighting the opportunities at each destination zone with a composite utility of travel across all modes to the destination, based on the logsum from the mode choice travel model.

These measures of accessibility should negate the traditional pull of the CBD, and, for some population segments, potentially reverse it. In addition to these accessibility variables, we include in the model a net building density, to measure the input-substitution effect of land and capital. To the extent that land near high accessibility locations is bid up in price, we should expect that builders will substitute capital for land and build at higher densities. Consumers for whom land is a more important amenity will choose larger lot housing with less accessibility, and the converse should hold for households that value accessibility more than land, such as higher income childless households.

The age of housing is considered for two reasons. First, we should expect that housing depreciates with age, since the expected life of a building is finite, and a consistent stream of maintenance investments are required to slow the deterioration of the structure once it is built. Second, due to changing architectural styles, amenities, and tastes, we should expect that the wealthiest households prefer newer housing, all else being equal. The exception to this pattern is likely to be older, architecturally interesting, high quality housing in historically wealthy neighborhoods. The preference for these alternatives are accommodated through a combination of nonlinear or dummy variable treatment for this type of housing and neighborhood.

A related hypothesis from urban economics is that, since housing is considered a normal good, it has a positive income elasticity of demand. This implies that as incomes rise, households will spend a portion of the gains in income to purchase housing that is more expensive, and that provides more amenities (structural and neighborhood) than their prior dwelling. A similar hypothesis is articulated in urban sociology in which upward social mobility is associated with spatial proximity to higher status households. Both of these hypotheses predict that households of any given income level prefer, all else being equal, to locate in neighborhoods that have higher average incomes. (UrbanSim does not attempt to operationalize the concepts of social status or social assimilation, but does consider income in the location choice.)

The age hypothesis and the two income-related hypotheses are consistent with the housing filtering model, which explains the dynamic of new housing construction for wealthy households that sets in motion a chain of vacancies. The vacancy chain causes households to move into higher status neighborhoods than the ones they leave, and housing units to be successively occupied by lower and lower status occupants. At the end of the vacancy chain, in the least desirable housing stock and the least desirable neighborhoods, there can be insufficient demand to sustain the housing stock

and vacancies go unsatisfied, leading ultimately to housing abandonment. We include in the model an age depreciation variable, along with a neighborhood income composition set of variables, to collectively test the housing filtering and related hypotheses.

One of the features that households prefer is a compatible land use mix within the neighborhood. It is likely that residential land use, as a proxy for land uses that are compatible with residential use, positively influences housing bids. On the other hand, industrial land use, as a proxy for less desirable land use characteristics, would lower bids.

The model parameters are estimated using a random sample of alternative locations, which has been shown to provide consistent estimates of the coefficients. In application for forecasting, each locating household is modeled individually, and a sample of alternative cell locations is generated in proportion to the available (vacant) housing. Monte carlo simulation is used to select the specific alternative to be assigned to the household, and vacant and occupied housing units are updated in the cell.

The independent variables can be organized into the three categories of housing characteristics, regional accessibility, and urban-design scale effects as shown below.

- Housing Characteristics
    - Prices (interacted with income)
    - Development types (density, land use mix)
    - Housing age
- Regional accessibility
    - Job accessibility by auto-ownership group
    - Travel time to CBD and airport
- Urban design-scale (local accessibility)
    - Neighborhood land use mix and density
    - Neighborhood Employment

Algorithm

Households to be located by this model are those that were added by the HouseholdTransition-Model or predicted to move by the HouseholdRelocationModel. The model selects all those households of a specified tenure status (renter or owner) that need to find a housing unit, and identifies all available, vacant housing units within the simulation year that are of the appropriate tenure. Since the choice sets are generally too large, normally random sampling of alternatives is used to construct plausible sized choice sets. It then uses a Multinomial Logit Model structure to generate location choice probabilities across the choice set for each household. The location probabilities are used with Monte Carlo Sampling to make a determination for each household regarding which of the available locations they will choose. Once a household has chosen a location, that location is committed to the household (like a rental contract or closing on a purchase of a house) and the residential unit becomes unavailable for any other households, until such time as the occupying household is predicted to move.

Configuration

The configuration of the Household Location Choice Model is summarized in the following table:

Table P.15: Configuration of Household Location Choice Model

Element	Setting
Agent	Job
Location Set	Residential submarkets - which are defined by building type, school district, tenure, and transit proximity
Dependent Variable	Location of each household: submarket_id
Model Type	Multinomial Logit Model
Estimation Method	Maximum Likelihood
Submodels	Separate models can be specified for groups of households
Independent Variables	Attributes of households interacted with attributes of submarkets

Data

The following tables are used by the Household Location Choice Model.

Table P.16: Data Used by Household Location Choice Model

Table Name	Brief Description
households	Synthetic households table
buildings	Buildings from which available residential units are evaluated for location
zones	Zones are used to compute density, social composition, and accessibility variables
travel_data	Skims from the travel model are used to compute accessibility variables

Real Estate Price Model

Objective

The Real Estate Price Model (REPM) predicts the price per unit of each building. For residential units, the sale price is estimated for owner units, and the rent is estimated for rental units.
UrbanSim uses real estate prices as the indicator of the match between demand and supply of land at different locations and with different land use types, and of the relative market valuations for attributes of housing, nonresidential space, and location. This role is important to the rationing of land and buildings to consumers based on preferences and ability to pay, as a reflection of the operation of actual real estate markets. Since prices enter the location choice utility functions for jobs and households, an adjustment in prices will alter location preferences. All else being equal, this will in turn cause higher price alternatives to become more likely to be chosen by occupants who have lower price elasticity of demand. Similarly, any adjustment in land prices alters the preferences of developers to build new construction by type of space, and the density of the construction.

We make the following assumptions:

1. Households, businesses, and developers are all price-takers individually, and market adjustments are made by the market in response to aggregate demand and supply relationships.
2. Location preferences and demand-supply imbalances are capitalized into land values. Building value reflects building replacement costs only, and can include variations in development costs due to terrain, environmental constraints or development policy.

Following on these assumptions and the best available theory regarding real estate price formation, we begin with a reduced-form hedonic regression model to establish the initial price and rent estimates based on structural and locational attributes, and combine this with a second step that incorporates short-term (within a year) market equilibrating tendencies.

Hedonic Price Regression

Real estate prices are modeled using a hedonic regression of the log-transformed property value per square foot on attributes of the parcel and its environment, including land use mix, density of development, proximity of highways and other infrastructure, land use plan or zoning constraints, and neighborhood effects. The hedonic regression may be estimated from sales transactions if there are sufficient transactions on all property types, and if there is sufficient information on the lot and its location. An alternative is to use tax assessor records on land values, which are part of the database typically assembled to implement the model. Although assessor records may contain biases in their assessment, they do provide virtually complete coverage of the land (with notable exceptions and gaps for exempt or publicly owned property).

The hedonic regression equation encapsulates interactions between market demand and supply, revealing an envelope of implicit valuations for location and structural characteristics. Prices are updated by UrbanSim annually, after all construction and market activity is completed. These end of year prices are then used as the values of reference for market activities in the subsequent year.
The independent variables influencing land prices can be organized into site characteristics, regional accessibility, and urban-design scale effects, as shown below:

- Site characteristics Development type
    - Land use plan
    - Environmental constraints
- Regional accessibility
    - Access to population and employment
- Urban design-scale
    - Land use mix and density
    - Proximity to highway and arterials

Algorithm

The Real Estate Price Model uses a hedonic regression structure, which is a multiple regression, estimated using Ordinary Least Squares (OLS), normally with the price specified as a log of price.

Configuration

The configuration of the REPM in the parcel model system is summarized in the following table:

Table P.17: Configuration of Real Estate Price Model

Element	Setting
Dataset	Buildings
Dependent Variable	Log of Price Per Unit (per housing unit for residential, per square foot for non-residential buildings)
Model Type	Regression
Submodels	Separate models are specified for each type of building
Independent Variables	Constant, and attributes of building: density, accessibility, zonal composition of households and employment

Data

These tables are used by the Real Estate Price Model:

Table P.18: Data Used by Real Estate Price Model

Table Name	Brief Description
buildings	Individual buildings located on parcels (can be many per parcel)
residential_units	Individual residential units located within a building
zones	Zones used in the travel model, for accessibility and density variables
travel_data	Zone-to-zone skims from the travel model, for accessibility variables
households	Household data, for socioeconomic and density variables
jobs	Employment data, for accessibility and density variables

Market Price Equilibration

Once initial market prices are estimated within a simulation year...

Real Estate Developer Model

Objective

The Real Estate Developer Model simulates the location, type and density of real estate development, conversion and re-development events at the level of specific parcels. The design draws partly on the parcel-level real estate development model created for the Puget Sound, which generates development proposals based on pre-defined templates. It generalizes the concept of templates to allow the developer model to configure multiple parameters of development projects in order to maximize profitability of development outcomes, subject to local physical, regulatory and market contexts.

Algorithm

This model is a process for evaluating a proforma for each building type allowed by zoning which should indicate the profitability of a development given a set of inputs which specify the context described above.

The proforma can be conceptualized as a spreadsheet implemented in Python code which performs cash flow analysis with standard financial discounting of cash flows. In this case, the developer model optimizes the building form so that it creates the building type and size which result in the greatest profitability (NPV) for each parcel.
The term developer model usually refers to this "outer loop" which optimizes the building form while the "pro forma" actually computes profitability based on cash flows given a specific set of inputs.

The code for the developer model is found in urbansim_parcel/proposal. developer_model.py is the controlling func- tion for this module - bform.py stores the building form currently used, profroma.py does the cash flow accounting, and devmdl_optimize.py performs the optimization.

Below is the complete set of inputs - the first section is the set of modeled inputs (i.e. output from another model) and the second section are exogenous inputs which are basic attributes of the parcel. The output of the model is simple: a single net present value and the building type and size of the building which results in the specified optimized NPV.

For this application, the developer model runs each simulated year on all empty parcels, on all parcels within a PDA, on parcels within 800m of Caltrain and BART, and a sampled portion of the other parcels to capture redevelopment of parcels.

For redevelopment, demolition cost is computed through one of the following: the value of residential owner housing, a simple multiplier for residential rental housing, the price estimated for nonresidential sqft, and a land price based on the value of nearby building prices.

Policies enter the developer model by the zoning (primarily by allowed FAR and building types), and also with a parcel subsidy/fee that is specified for each parcel.

The Role of Accessibility

Accessibility is a very important influence in urban space, and it similarly plays an important role in UrbanSim. Almost all models in UrbanSim consider the effects of accessibility. But unlike the monocentric or spatial interaction models, in which the choice of workplace is exogenous and residential locations are chosen principally on the basis of commute to the city center or to a predetermined workplace, we deal with accessibility in a more general framework. Accessibility is considered a normal good, like other positive attributes of housing, which consumers place a positive economic value on. We therefore expect that consumers value access to workplaces and shopping opportunities, among the many other attributes they consider in their housing preferences. However, not all households respond to accessibility in the same way. Retired persons would be less influenced by accessibility to job opportunities than would working age households, for instance.

We operationalize the concept of accessibility for a given location as the distribution of opportunities weighted by the travel impedance, or alternatively the utility of travel to those destinations. A number of alternative accessibility measures have been developed in UrbanSim. The utility of travel is measured as the composite utility across all modes of travel for each zone pair, obtained as the logsum of the mode choice for each origin-destination pair. We will evaluate alternative accessibility measures during model estimation and make a final decision on which measures to use based on those results.

The accessibility model reads the logsum matrix from the travel model and the land use distribution for a given year, and creates accessibility indices for use in the household and business location choice models. The general framework is to summarize the accessibility from each zone to various activities for which accessibility is considered important in household or business location choice.

Since UrbanSim operates annually, but travel model updates are likely to be executed for two to three of the years within the forecasting horizon, travel utilities remain constant from one travel model run until they are replaced by the next travel model result. Although travel utilities remain constant, the activity distribution in these accessibility indices is updated annually, so that the accessibility indices change from one year to the next to reflect the evolving spatial distribution of activities.

Table P.19: Data Used by Real Estate Developer Model

Variable Name	Brief Description
PRICES	
single family	Price estimate for single-family housing
multi family	Price estimate for multi-family housing
rent single family	Rent estimate for single-family housing
rent multi family	Rent estimate for multi-family housing
office	Rent estimate for the office building type
retail	Rent estimate for the retail building type
industrial	Rent estimate for the industrial building type
ABSORPTION	
sales absorption	The absorption rate for sales units by building type
sales vacancy	The vacancy rate for sales units by building type
rent absorption	The absorption rate for rental units by building type
rent vacancy rates	The vacancy rate for rental units by building type
SIZES	
average lot size	Typical lot size in the zone for this parcel
sf unit size	Typical single-family unit size in the zone for this parcel
mf unit size	Typical multi-family unit size in the zone for this parcel
ZONING	
building types	Allowable building types for this parcel
FAR	Floor area ratio allowed for this parcel
height	Height limits for this parcel
max_dua	Max dwelling units for this parcel
POLICIES	
ISR	Whether to apply indirect source rule. ISR subsidies are user-specified
unit subsidy	User-specified per-unit subsidies
per sqft subsidy	User-specified per-unit subsidies for non-residential square feet

User-Specified Events

Given our current understanding, no model will be able to simulate accurately the timing, location and nature of major events such as a major corporate relocation into or out of a metropolitan area, or a major development project such as a regional shopping mall. In addition, major policy events, such as a change in the land use plan or in an Urban Growth Boundary, are outside the range of predictions of our simulation. (At least in its current form, UrbanSim is intended as a tool to aid planning and civic deliberation, not as a tool to model the behavior of voters or governments. We want it to be used to say "if you adopt the following policy, here are the likely consequences," but not to say "UrbanSim predicts that in 5 years the county will adopt the following policy.")

However, planners and decision-makers often have information about precisely these kinds of major events, and there is a need to integrate such information into the use of the model system. It is useful, for example, to explore the potential effects of a planned corporate relocation by introducing user-specified events to reflect the construction of the corporate building, and the relocation into the region (and to the specific site) of a substantial number of jobs, and examine the cumulative or secondary effects of the relocation on further residential and employment location and real estate development choices. Inability to represent such events, in the presence of knowledge about developments that may be 'in the pipeline,' amounts to less than full use of the available information about the future, and could undermine the validity and credibility of the planning process. For these reasons, support for three kinds of events has been incorporated into the system: development events, employment events, and policy events.

Appendix Q. SCAG PECAS Estimated Aggregated TOD Impacts

Overall Consumer Surplus Measures

The integration of economic modelling with random utility modelling in the PECAS formulation allows the calculation of composite utility measures that are consistent with Consumer Surplus (Producer Surplus) measures, which is the difference of the willingness to pay to the actual price paid for commodities. If a household pays $1000 per month for their housing, while it is affordable and willing to pay $1500, the household gains a surplus of $500. These measures take into account households' and industries' tradeoffs between transportation, space/housing, technology/lifestyle, with error terms representing the advantages of variety and choice options (the *raison d'être* of large cities), with endogenous prices serving to balance supply and demand spatially.

In many modelling frameworks, the competing metrics of transportation services, land affordability, access to services and labor force mobility must be tabulated separately, and combined with care not to double-count into a measure of overall scenario performance. The PECAS AA module is designed to contain a complete representation of the spatial economy within a consistent theoretical framework, and, therefore, the relative tradeoffs between different elements of travel, location, land use, etc., are included in PECAS. This ability to combine the analysis is relevant in this study since gains in one dimension (e.g. better transit service) can be analyzed together with losses in other dimensions (e.g. less affordable housing). See (J.E. Abraham and Hunt 2007) for a detailed description of the comprehensive presentation of the economic system and its use for scenario comparison.

Benefits are calculated by comparing the SCAG PECAS version of "with" the estimated TOD-related parameters, *SD10*, against the *SDBU*, the version "without" parameters. The gains in consumer surplus due to the calibrated change in TOD desirability are shown in Table Q.1. The observed target displacement of low income households, changes in median income, and changes in rent in around TOD zones was achieved through changes in TOD attractiveness that caused a general increase in welfare of all types of households in the model. This is further investigated spatially in the following sections.

Net Rent Change

The AA module in PECAS is comprehensive in that it represents all of the transactions that occur in the economy, with both parties of a transaction - buyer and seller - represented. However, the landlords (and other property owners), and developers, are not represented in the AA module since they are normally modelled behaviorally in the SD module. When rents increase, there is a dis-benefit to the payers of rent (tenants), but it is a benefit to the receivers of rent (landlords or profits for developers).

The benefit to landlords/developers is calculated separately, as the net change in rent received, and is shown in Table Q.1 and Figure Q.1, separated into the housing types in the model. A decrease in the total rent charged for low density (single family) housing is apparent, and there is an increase in the rent charged for high-rise space.

The total benefit is $1.647 billion, and it does not include any rent leakage to absentee landlords. In other words, the owner-occupied dwellings are represented as if they are rented to the owner household, so increases in owner-occupied home value are included as a mitigating dis-benefit in the consumer surplus measures of Table Q.1, and a corresponding benefit.

Table Q.1: Annual Gains and Losses due to Displacement

Activity		Consumer surplus change	Benefit per Household
Households	INC0010 2 or less	$184.9 M	$260
	INC0010 3 or more	$39.8 M	$342
	INC1025 2 or less	$131.6 M	$272
	INC1025 3 or more	$110.1 M	$307
	INC2550 2 or less	$220.4 M	$285
	INC2550 3 or more	$236.1 M	$300
	INC5075 2 or less	$135.2 M	$321
	INC5075 3 or more	$177.8 M	$341
	INC75100 2 or less	$72.7 M	$372
	INC75100 3 or more	$119.0 M	$387
	INC100150 2 or less	$69.5 M	$306
	INC100150 3 or more	$115.2 M	$352
	INC150m 2 or less	$67.4 M	$272
	INC150m 3 or more	$81.7 M	$286
Business	Office	$1.4 M	
	Other	$9.5 M	
	Goods	$20.5 M	
	Services	$30.4 M	
	Exporters	-$0.2 M	
	Importers	-$27.8 M	

Table Q. 2: Aggregate Rent Change

Space types	Rent Change
VL Luxury	-6.6 M
VL Economy	-1.5 M
L Luxury	-111.2 M
L Economy	-78.5 M
MD Separate Entrance	-1.3 M
MD Shared Entrance	-0.5 M
Higher Density	-0.8 M
High-rise	41.3 M
Urban MH	11.1 M

Figure Q.1: Aggregate Rent Change (visual representation of previous table)

Benefits Categorized by Commodity

A portion of the consumer surplus measures from the previous section is due to the changes of interaction between buyers and sellers. In the PECAS AA, the most frequently updated choice in its calculation process is the economic interactions between buyers and sellers, with one party usually travelling (e.g. to work, to school) and paying the transport cost. Figure Q shows the benefits and dis-benefits due to transactions. It is shown that much of the benefit is due to lower prices paid for low density single family dwellings (ResType3 and ResType4).

Notably, there are dis-benefits due to the transport costs of acquiring some household services including Retail, Restaurant, Personal Services, Education and Amusements. It is worth noting that *the zone-to-zone costs of transportation* were not changed in this analysis, and the same zone-to-zone travel time and cost matrix was used, while the attractiveness of TODs was instead simulated via a change in zonal attractiveness. Therefore, increases in transportation costs in Figure Q represent further distances travelled to certain types of personal services when households cluster closer to TODs. The current availability of retail service type space in TOD zones does not seem to be adequate to allow services to also cluster in TODs. It is important to allow for the development of non-residential space in adequate quantity to allow services to follow changes in household locations.

Spatial Benefit Measures

The impact of displacement on low income groups can better be understood through spatial maps. Figure Q.2 shows the benefit measures for the lowest income households. The outline color of the zone shows the downtown TOD and non-downtown TOD zones, while the interior coloring of the zones shows the estimated aggregate benefits for the household category.

Low income households are seen to be receiving benefits in the non-downtown TODs, with a substantially smaller negative impact in the downtown TODs. Outside of the TODs, low income households are receiving a small benefit.

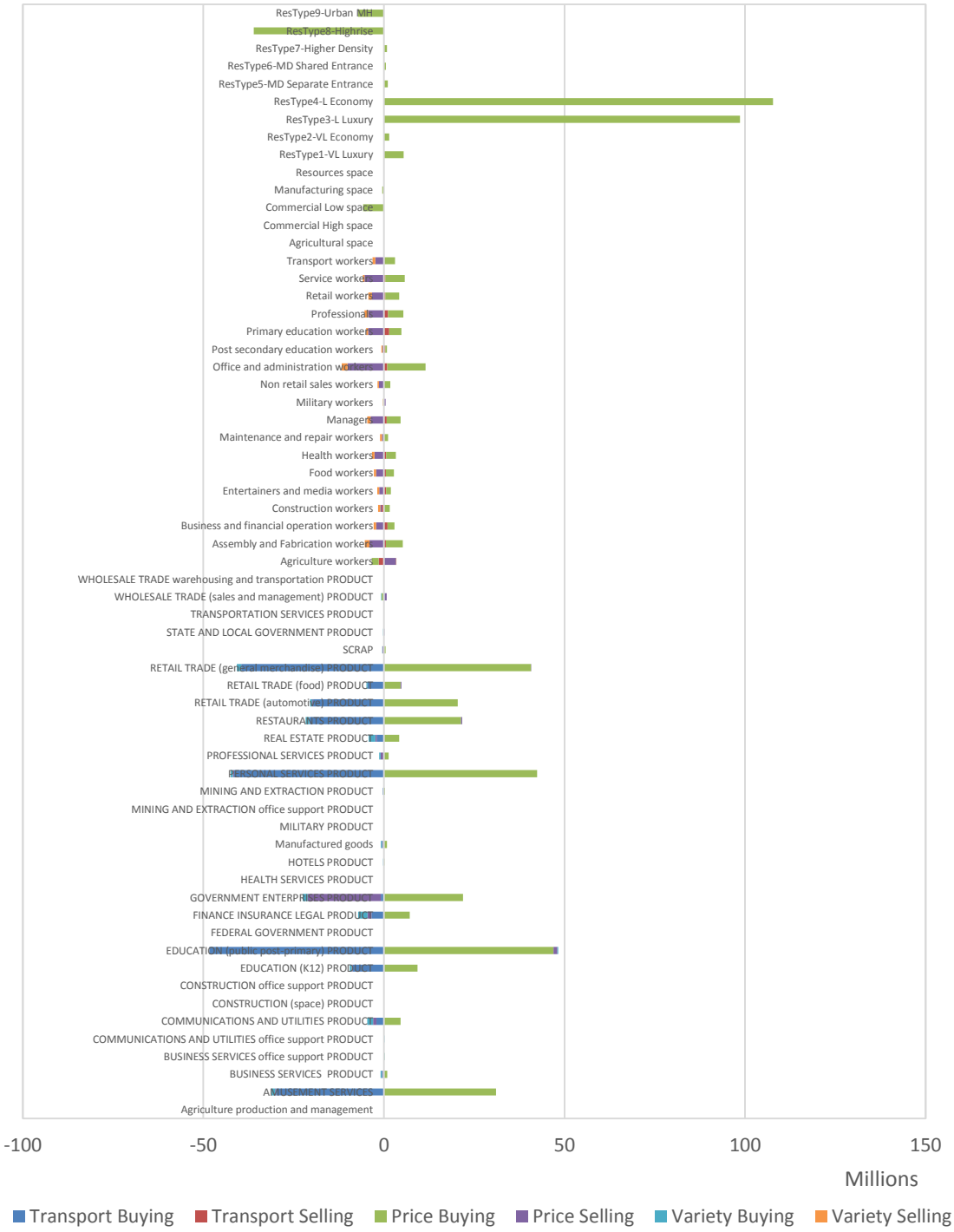

Figure Q.2: Benefits and Dis-benefits Due to Transactions

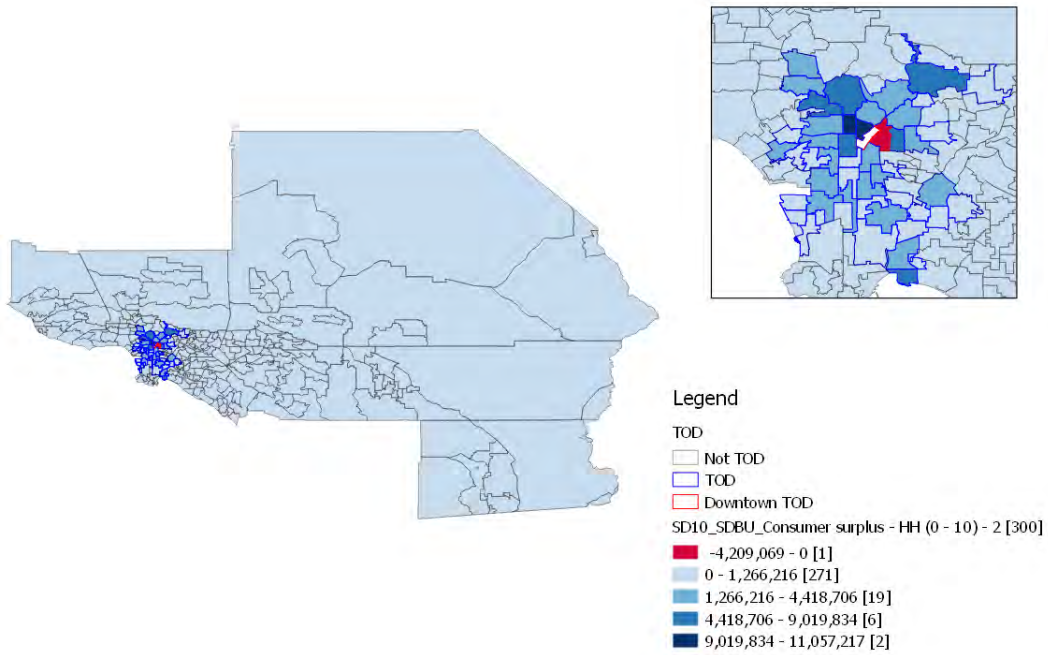

Figure Q.2: Benefit measures for Households with $0 - $10k income and 2 or less

Figure Q.4 shows the aggregate benefits to households in the 100-150k income group of size 3 or more. The aggregate benefits are smaller relative to that of the low income group and much of the benefit occurs in suburban zones. Even though the portion of wealthy people increases in the TOD zones in the scenario, these larger households (many with children) in the second highest income category are not generating most of their benefits from TOD zones. Rather, their benefits are predominantly due to effects in non-TOD zones, for instance slightly lower rents in the rest of the region could be benefitting these wealthier suburban households.

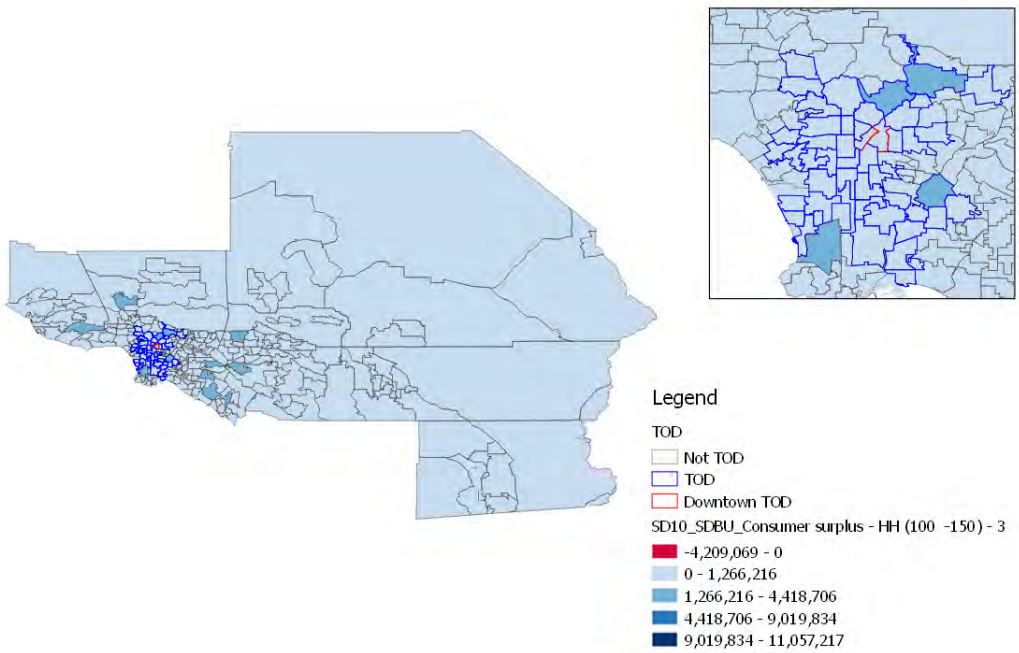

Figure Q.4: Benefits to households in $100K - $150k income and 3 or more

Housing Consumption Changes

The PECAS model represents housing choices, with flexibility in choice of dwelling type, the quantity of housing (measured in square feet) and the location of housing. Figure shows the changes in the amount of housing in square feet consumed by each household category with the scenario, in the TOD zones. There is an increase in space use associated with higher numbers of households in the TOD zones, with most of the increased use occurring in the Low Density Economy category (ResType4).

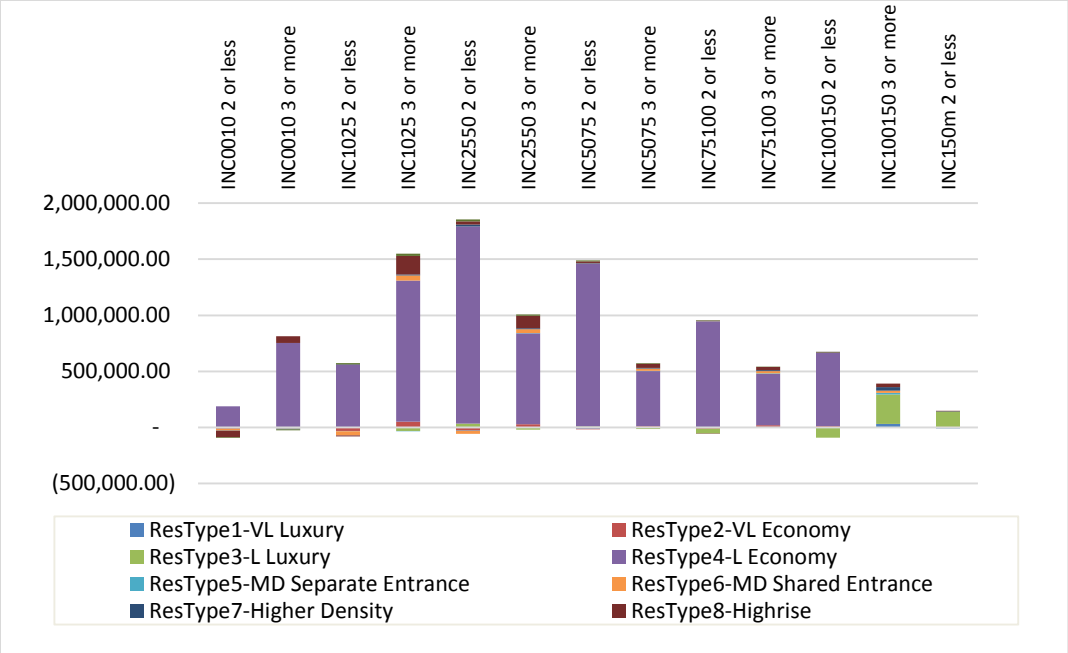

Figure Q.5: Change in Consumption of Housing in TOD zones (sq. ft.)

Figure shows the region-wide change in housing consumption. The lower income categories of households end up using less space overall, since they squeeze into the single family dwelling space dominant around the TOD zones. The higher income households use more space overall. The pattern of changes in high-rise space consumption indicates a displacement, with higher income households consuming more high-rise space, and thus lower income households consuming less space per household.

Figure shows the number of households in each space type in the TOD zones in each scenario, and Figure shows its changes. Households are moving predominantly into low density economy space and high-rise dwellings in these zones. This is a partial reflection of the existing housing stock in these zones. Households who prefer to move into TOD zones in the SD10 scenario will consume the existing types of space in TOD zones, which are predominantly low density (single family) "economy" dwellings.

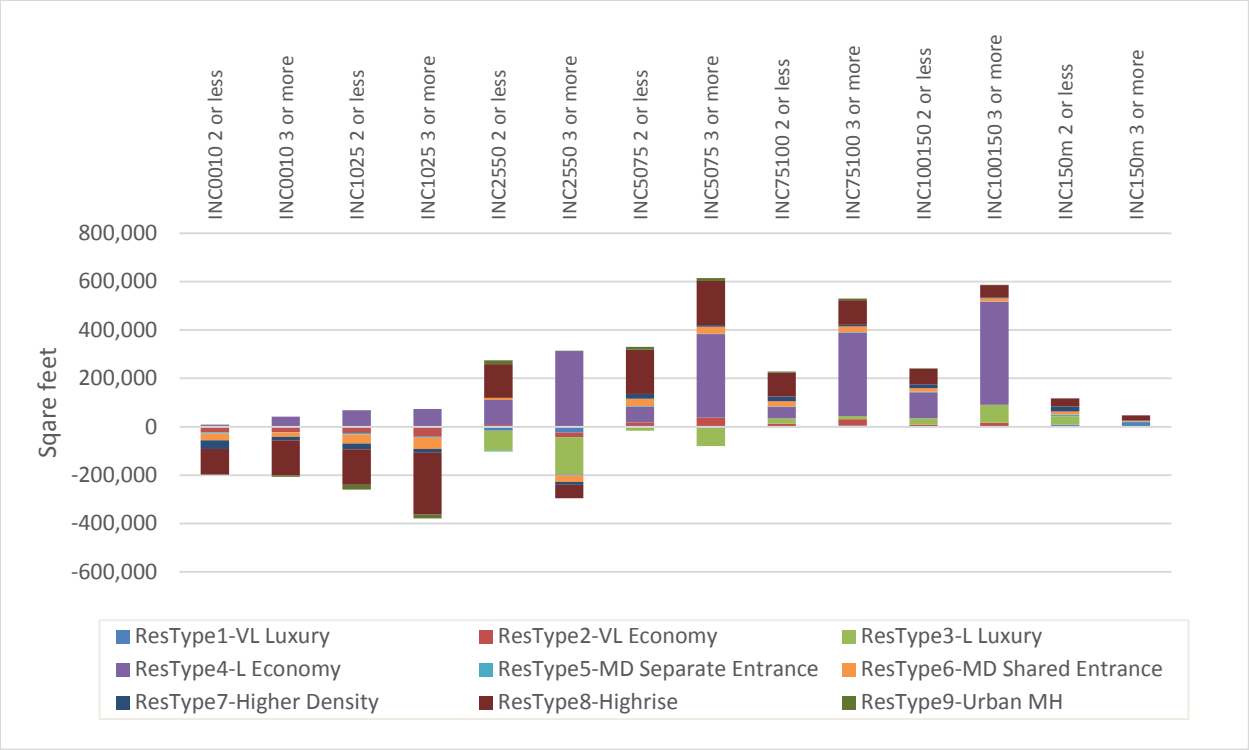

Figure Q.6: Change in Consumption of Housing in Region (sq. ft.)

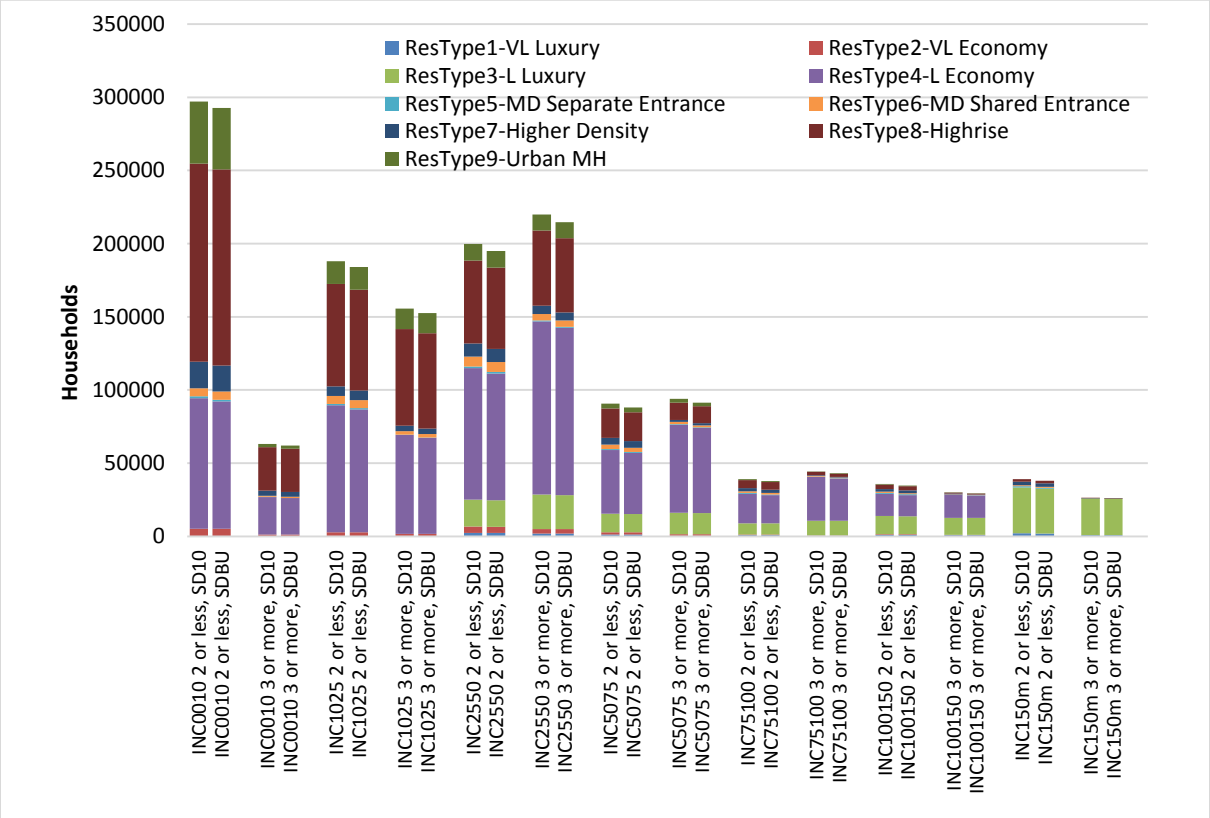

Figure Q.7 Number of Households in Each Housing Type in Each Scenario, in the TOD Zones

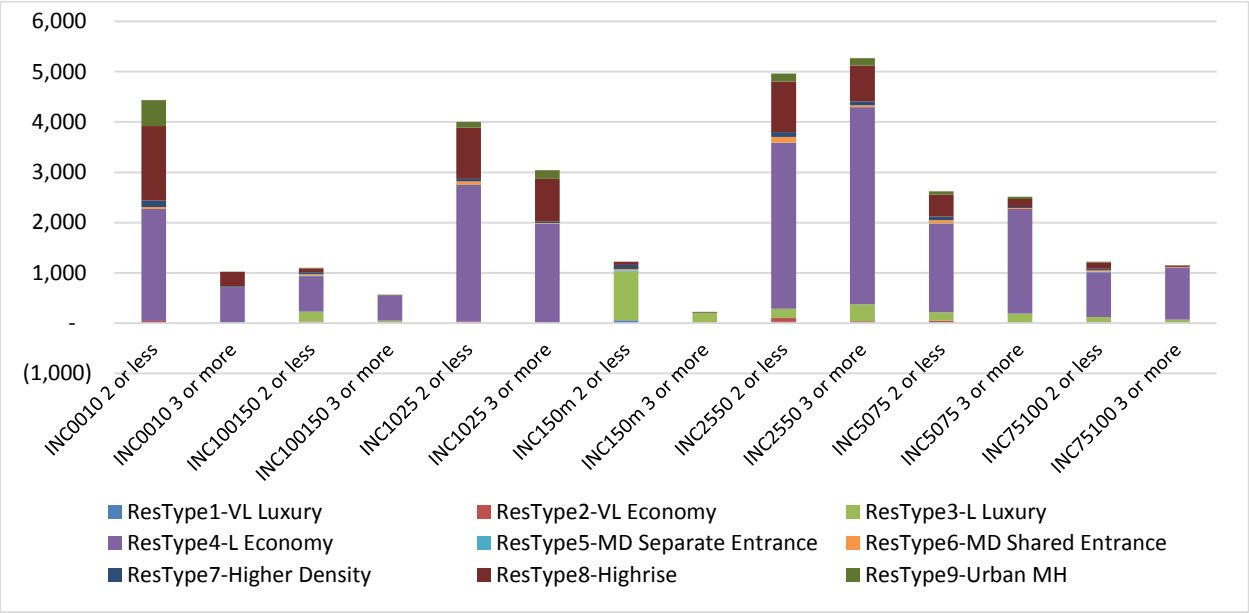

Figure Q.8: Shift in housing type in TOD zones

Figure shows the changes in the number of households in different types of space in the entire region. When households move to TOD zones in this scenario, most households choose the same type of housing that they were choosing in their former zones. A dominant shift is the move away from "luxury" single family dwellings (representing the larger dwellings) into high-rise and "economy" single family dwellings, representing the more modest single family dwellings that dominate the current stock of housing in the TOD zones.

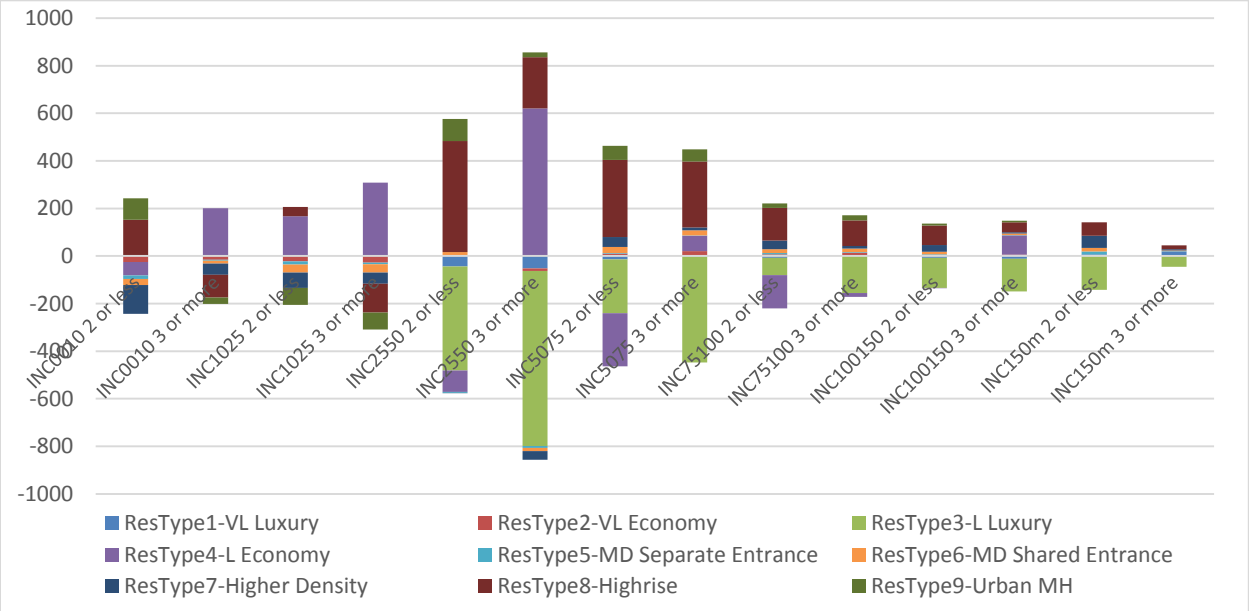

Figure Q.9: Shift in housing type region-wide

Appendix R. In- and Out- Migration Regression Results

We initially ran regressions for both in and out migration rates including an extensive list of control variables. Table R.1 presents the regression results for both regions. The model shows that once we control for all other observed factors, TODs, specifically Downtown TOD, seem to dampen out-migration (a negative coefficient) in Los Angeles. This indicates that fewer people are moving out. Although the direction of the coefficient is the same for the Bay Area, the relationship was not significant. This may have to do with how Downtown TOD was defined, as being any TOD within the city boundaries of San Francisco, San Jose, and Oakland, which encompassed nearly half of all TODs in the region. While the model does produce a positive coefficient on in-migration (indicating that people are moving in), for both TOD variables the value is not statistically significant in Los Angeles. In the Bay Area, in-migration was positively correlated with Downtown TODs, although it was not statistically significant. On the other hand, TODs appear to dampen in-migration outside of the three main cities. One of the problems with this larger model is that many of the variables are collinear, producing problems of multi-collinearity and endogeneity.

Table R.1: In- and Out-Migration, Multivariate Regressions, LA County and SF Bay Area 2009-13

	In-Migration		Out-Migration	
	Los Angeles	**Bay Area**	**Los Angeles**	**Bay Area**
Intercept	2.930051 ***	0.0894008 *	2.120327 **	-0.11876 *
Median Age	-0.00339 ***	-0.0030345 ***	-0.00237 ***	0.00323 ***
Percentage of the Population Who are Female	-0.00065 **	0.0139567	-0.00019	-0.08772 *
Percentage of Population Between 25 and 35	0.000842 ***	0.1274436 ***	0.000678	-0.10029 **
Percentage of the Population 65 Years & Over	0.000166	0.0580711 *	-0.00105 **	-0.00527
Percent Currently Enrolled in College	0.000789 ***	0.1834657 ***	0.000713 ***	-0.11993 ***
Percent non-Hispanic black	-0.00006	0.0057104	-0.00015	0.01332
Percent Asian	0.000191 *	-0.0119541	0.000294 *	0.01703
Percent Hispanic or Latino	-0.00062 ***	-0.053071 ***	-0.00049 ***	0.06869 ***
Percent of the Population in Poverty	0.001105 ***	0.0892205 ***	0.000875 ***	-0.03032
Percent Renters	0.000951 ***	0.1125053 ***	0.000876 ***	-0.09859 ***
Percent Vacancy	0.00032	0.0047989	0.00086 ***	-0.06506 **
Percent of Renters That are Housing Burdened	0.000213 **	0.0331735 **	0.000164	-0.01575
Percent of Households With Children	-0.00018	0.0032998	-0.00076 ***	0.05627 *
Percent Female Headed Households	-0.00021		-0.0001	
Median Household Income (/10,000)	0.006448 **	0.0002876	0.000461	0.0047
Median Household Income Squared	-0.00021 **	0.0001503 *	0.000011	-0.00032 ***
20/80 Ratio (Household Income)[1]	-0.01486	0.0763761 ***	-0.01853	-0.08849 ***
Percent of Population Who are Foreign-Born	-0.00095 ***	-0.0818435 ***	-0.00103 ***	0.04187
Percent of Available Section 8 Units	-0.0005	0.0669784	-0.00052	-0.0436
Percentage of LIHTC Units	-0.00003	-0.0336884 *	-0.00032	0.05858 **
Percentage of Public Housing Units	-0.00037	-0.0948952 ***	-0.00131 ***	0.1004 **
Jobs to Household Ratio (LEHD, 2011)	0.000992 **	0.0004233	0.000261	-0.00028
Percent of the Population in Group Quarters	0.00264 ***	0.3606687 ***	0.002332 ***	-0.38737 ***
Percent of Residential Structures With 20 or More Units	0.000866 ***	0.1003296 ***	0.000619 ***	-0.08144 ***
Percent of Residential Buildings Built Pre 1950	-0.00006	-0.0171072 ***	-0.0001	0.02137 **
Tracts Within a Mile of the Beach	0.013456 ***		0.003896	
Tracts Located on Hilly Areas	0.007143 *		0.004643	
Percent of Affordable Rental Units	-0.00038 ***	-0.0018706	-0.00033 **	0.01037
Area With Rent Regulation	-0.00635 **	-0.0034646	-0.00727 *	0.00345
Percent Open Space[2]	-0.00003	-6.15E-07	-0.00001	8.94E-07
Tracts in North LA County	0.010927 *		0.001999	
CalEnviro Pollution Score	0.000017		0.00021	
Change in Median Gross Rent (06-10 - 09-13)	-0.01203	-0.0030426	-0.03363 ***	0.014 ***
Change in Median Home Value (06-10 - 09-13)	2.731555 ***	-0.0197218 **	1.908278 *	0.03138 ***
Joint Development Project	-0.01821 ***		-0.01318	
Downtown TOD[3]	0.012943	0.0033894	-0.07127 ***	-0.00666
Other TOD Neighborhood	0.000033	-0.006383 **	-0.00104	0.0073
Adjusted R-Squared	0.56236	0.5939	0.38797	0.4317
n	2,224	1545	2,224	1545

*** P<.01, ** p<.05, *p<.10

[1] The entropy index was used for the Bay Area, which measures the degree of income inequality

[2] Open space density (per 1,000 population) was used for the Bay Area

[3] For the Bay Area, Downtown TODs were consdered any TODs (within <1/2 mile of a rail station) in SF, San Jose, and Oakland

Source: 2006-10, 2009-13 ACS

Tabulations by C.Pech & P. Ong, May 2015, M. Zuk Aug 2015

Appendix S. Average Daily VMT by Income and Rail Access

Table S.1: Statewide average daily household VMT by income and rail access, NHTS 2009, and CHTS 2010-2012

NHTS 2009							
	Near Rail		Away Rail		VMT difference		t-test
Income categories	VMT	N	VMT	N	% of VMT difference	Absolute VMT difference	
<$50k	32.6	411	40.5	7,958	19.57%	7.92	3.08
$50k-$75k	49.4	115	60.4	3,116	18.14%	10.95	3.04
$75k - $100k	47.4	90	71.9	2,577	34.10%	24.53	5.76
>$100k	60.5	159	80.4	5,244	24.69%	19.85	5.97
Did not report		72		1,483			
Total	41.9	847	58.0	20,378	27.88%	16.18	9.84
CHTS 2010-2012							
	Near Rail		Away Rail		VMT difference		t-test
Income categories	VMT	N	VMT	N	% of VMT difference	Absolute VMT difference	
<$50k	16.6	882	28.6	13,481	42.08%	12.04	9.75
$50k-$75k	29.3	358	44.6	6,544	34.41%	15.36	4.66
$75k - $100k	29.6	287	50.4	5,581	41.31%	20.81	6.63
>$100k	35.3	693	59.1	10,964	40.23%	23.78	13.06
Did not report		197		3,444			
Total	26.1	2,417	43.5	40,014	40.11%	17.46	18.16

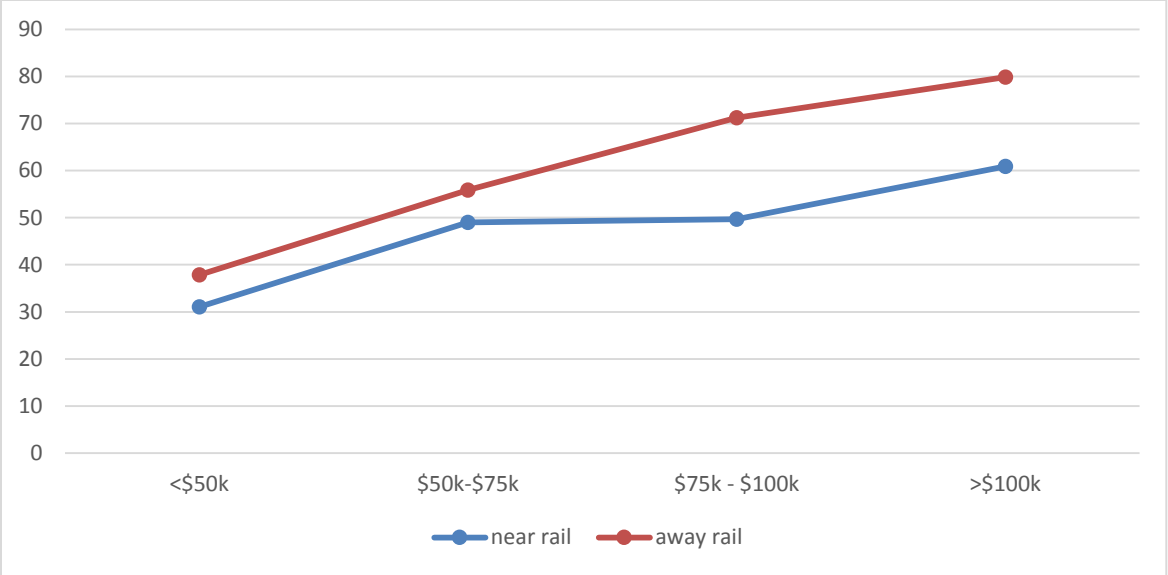

Figure S.1: Statewide average daily household VMT by income and rail access (NHTS 2009 data)

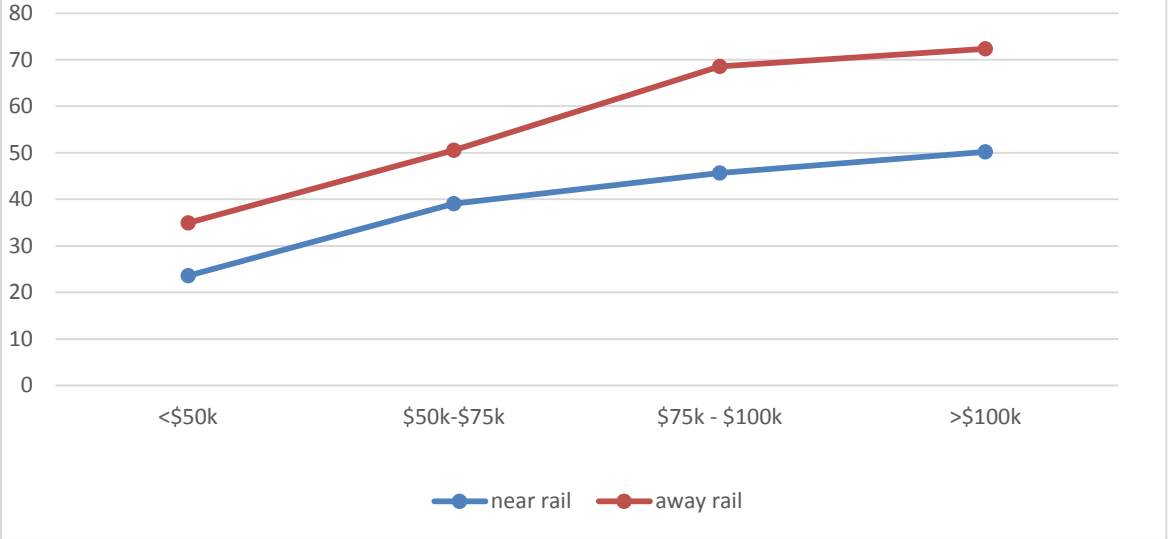

Figure S.2: Statewide average daily household VMT by income and rail access (CHTS data)

Table S.2 Average daily household VMT by income category and rail access, San Francisco Bay Area only, NHTS 2009, and CHTS 2010-2012

NHTS 2009							
	Near Rail		Away Rail		VMT difference		t-test
Income categories	VMT	N	VMT	N	% of VMT difference	Absolute VMT difference	
<$50k	23.58	147	34.95	1,134	32.53%	11.37	4.12
$50k-$75k	39.04	63	50.52	636	22.72%	11.48	3.07
$75k - $100k	45.67	58	68.56	538	33.39%	22.89	4.18
>$100k	50.22	99	72.34	1,311	30.58%	22.12	6.59
Total	36.91	367	56.23	3619	34.36%	19.32	10.04
CHTS 2010-2012							
	Near Rail		Away Rail		VMT difference		t-test
Income categories	VMT	N	VMT	N	% of VMT difference	Absolute VMT difference	
<$50k	14.17	391	26.78	1,716	47.09%	12.61	7.13
$50k-$75k	22.69	244	36.67	1,234	38.12%	13.98	3.44
$75k - $100k	24.18	227	44.09	1,240	45.16%	19.91	6.81
>$100k	31.85	564	54.42	3,635	41.47%	22.57	11.56
Total	23.36	1,426	38.31	7,825	39.02%	14.95	15.64

[1] *This is insignificant.*

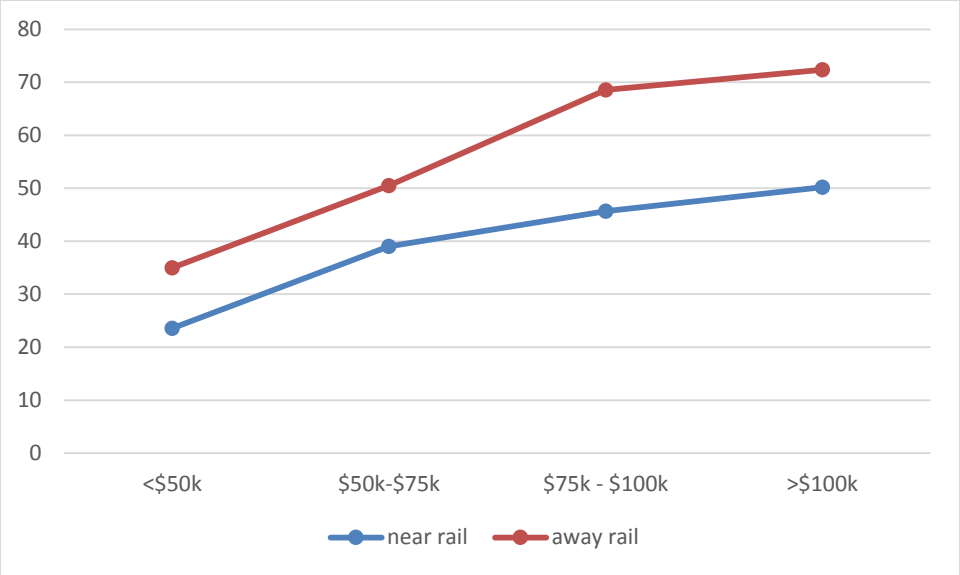

Figure S.3: Average daily household VMT by income and rail access, SF Bay Area only (NHTS data)

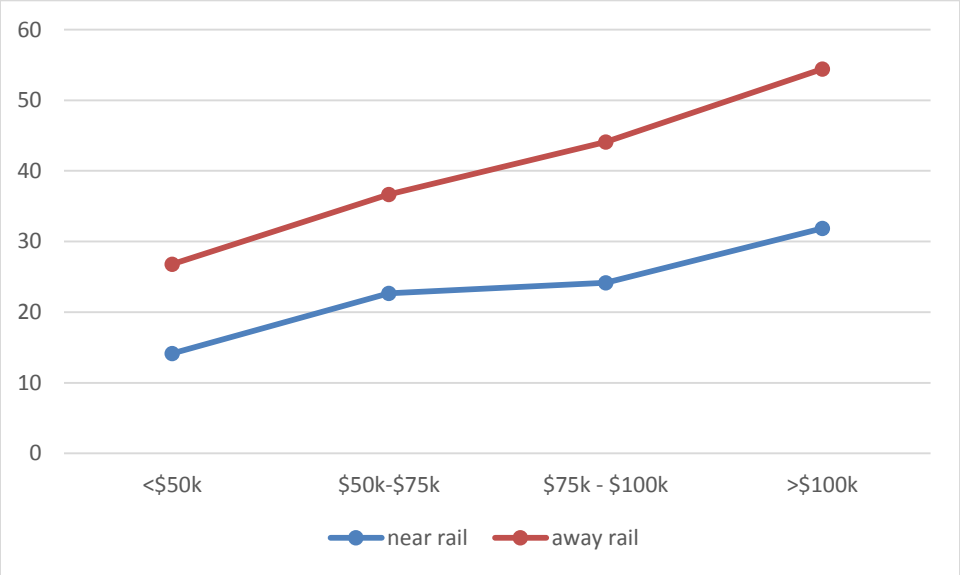

Figure S.4: Average daily household VMT by income and rail access, SF Bay Area only (CHTS data)

Table S.3: Average daily household VMT by income category and rail access, Los Angeles region only, NHTS 2009, and CHTS 2010-2012

NHTS 2009							
	Near Rail		Away Rail		VMT difference		t-test
Income categories	VMT	N	VMT	N	% of VMT difference	Absolute VMT difference	
<$50k	28.06	117	38.53	2,677	27.17%	10.47	2.71
$50k-$75k	63.71	26	58.8	1,186	-8.35%	-4.91	(-0.44)[1]
$75k - $100k	50.12	10	74.36	925	32.60%	24.24	2.05
>$100k	65.29	15	82.38	1,660	20.75%	17.09	2.32
Total	38.05	168	59	6,448	35.17%	20.64	5.85
CHTS 2010-2012							
	Near Rail		Away Rail		VMT difference		t-test
Income categories	VMT	N	VMT	N	% of VMT difference	Absolute VMT difference	
<$50k	18.04	355	27.15	4,188	33.55%	9.11	4.75
$50k-$75k	38.28	105	39.78	2,130	3.77%	1.5	(0.23)[1]
$75k - $100k	35.25	74	46.27	1,951	23.82%	11.02	2.62
>$100k	47.15	97	56.22	3,969	16.13%	9.07	(1.44)[1]
Total	26.57	631	34.58	12,238	23.16%	8.01	7.23

[1] *This is insignificant*

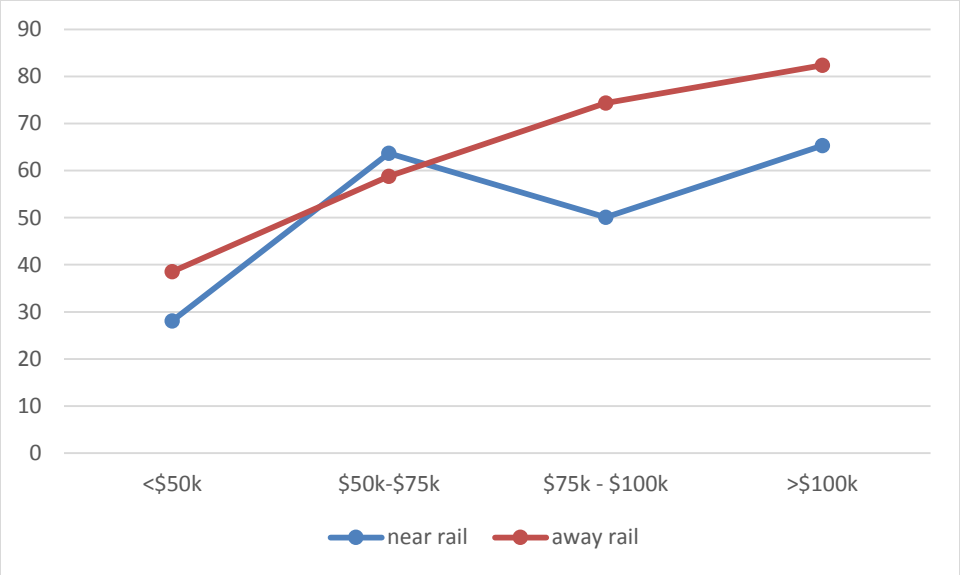

Figure S.5: Average daily household VMT by income and rail access, LA Region only (NHTS data)

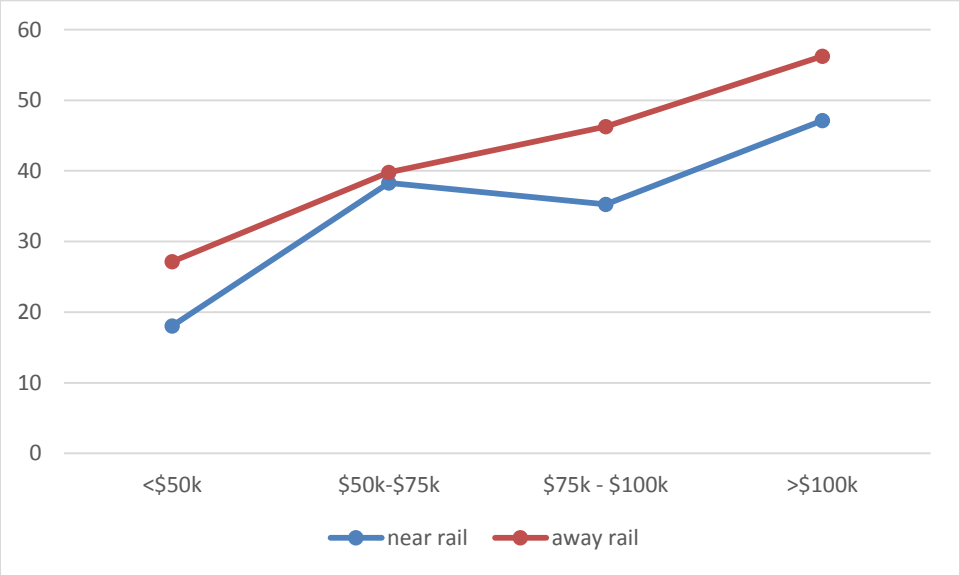

Figure S.6: Average daily household VMT by income and rail access, LA region only (CHTS data)

Table S.4: Average VMT for different mover's profiles, by income category

Recent mover (last 5 years) VMT by mover profile and income	$0 to $49,999		$50,000 to $99,999		$100,000+		NA			
	N	Avg VMT[1]	N	Avg VMT	N	Avg VMT	N	Avg VMT	**Total N**[3]	Average VMT
Away to Near[2]	1,050	30	697	46	703	54	153	33	**2,603**	41
Away to Away	1,122	32	892	53	680	61	162	41	**2,856**	46
Near to Near	121	13	108	26	120	32	15	35	**364**	24
Near to Away	22	28	12	24	18	43	3	66	**55**	34
Total	**2,315**		**1,709**		**1,521**		**333**		**5,878**	

[1] Daily VMT aggregated to the household level, "complete households" only.
[2] Previous residential location defined at the zip code level.
"Near" is defined as having a rail station in the home zip code area.
[3] 16% of households in the CHTS data moved in the previous five years. Previous address locations outside of California are excluded.

Table S.5: Predicted change in VMT for a stylized one-to-one displacement scenario

Change of low-income households in TOD area				-1000	
Change of high-income households in TOD area				1000	
		Uncontrolled Descriptive analysis		Tobit [1, 2]	
		NHTS	CHTS	NHTS	CHTS
Before displacement	Average VMT for low-income households living near rail [2]	34.61	15.61	22.7	2.5
	Average VMT for high-income households living away from rail	79.92	51.36	121.2	68.6
	Aggregate	114,530.0	66,970.0	143,900.0	71,100.0
After displacement	Average VMT for low-income households living away from rail	39.09	23.86	42.6	19.5
	Average VMT for high-income households living near rail	67.75	34.21	69.4	51.6
	Aggregate	106,840.0	58,070.0	112,000.0	71,100.0
% changes of aggregated VMT		-6.71%	-13.29%	-22.17%	0.00%

[1] Each VMT estimate comes from multiplying regression coefficients by the household income value along with average values for all other dependent variables included in the model.
[2] Some of the values predicted by the Tobit model could be small, due to this prediction is based on the average number for each parameter and is only for hypothetical scenarios. Therefore only the differences in VMT between before and after displacement is essential in explaining the net VMT impact of displacement.

Table S.6: Predicted VMT change for a stylized one-to-two displacement scenario

Change of low-income households in TOD area				-1000	
Change of high-income households in TOD area				500	
		Uncontrolled Descriptive analysis		Tobit	
		NHTS	CHTS	NHTS	CHTS
Before displacement	Average VMT for low-income households living near rail [2]	34.61	15.61	22.7	2.5
	Average VMT for high-income households living away from rail	79.92	51.36	121.2	68.6
	Aggregate	74,570.0	41,290.0	83,300.0	36,800.0
After displacement	Average VMT for low-income households living away from rail	39.09	23.86	42.6	19.5
	Average VMT for high-income households living near rail	67.75	34.21	69.4	51.6
	Aggregate	72,965.0	40,965.0	77,300.0	45,300.0
% changes of aggregated VMT		-2.15%	-0.79%	-7.20%	23.10%

Table S.7: County median incomes and low-income threshold definitions

Median Household Income (2013 dollars)	**1990**	**2000**	**2013**
Los Angeles	$63,423	$58,982	$55,909
Santa Clara	$90,456	$100,352	$91,702
San Francisco	$62,818	$74,548	$75,604
Median Household Income (2010 dollars)	**1990**	**2000**	**2013**
Los Angeles	$59,618	$55,443	$52,554
Santa Clara	$85,029	$94,331	$86,200
San Francisco	$59,049	$70,075	$71,068
80% of Median Household Income (2010 dollars)	**1990**	**2000**	**2013**
Los Angeles	$47,694	$44,354	$42,044
Santa Clara	$68,023	$75,465	$68,960
San Francisco	$47,239	$56,060	$56,854

Source: ACS 2009-2013; http://data.bls.gov/cgi-bin/cpicalc.pl to adjust 2013 dollars to 2010 dollars.

Appendix T. Anti-Displacement Strategies and Sources

Displacement Protection Policies

- Just Cause Eviction: Just cause eviction statutes are laws that protect tenants from eviction for an improper reason. Cities or states that have just cause eviction statutes allow landlords or owners to evict a tenant only for certain reasons, such as failure to pay rent or for violation of the lease terms.
- Rent Stabilization (or rent control) (RSO): The purpose of Rent Stabilization ordinances is to protect tenants from excessive rent increases, while at the same time allowing landlords a reasonable return on their investments (Los Angeles Municipal Code, Chapter XV). Such ordinances regulate the percentage of annual rent increase, but may allow rent to be reset at market-rate upon vacancy. Residential rental units covered by the RSO exclude single-family dwellings and exempt affordable housing units (ex. Section 8). RSO applies to the properties within the jurisdiction that were built prior to the policy implementation. In the City of Los Angeles for example the RSO applies to properties built prior to October 1, 1978.
- Rent Mediation (or rent review boards): Mediation helps the tenant and landlord reach a voluntary agreement on how to settle issues related to rent increases. The mediator normally does not make a binding decision in the case. In some jurisdictions all rent increases must also include a notice to the tenant of their right to mediation, and a tenant can file a mediation petition with the jurisdiction.
- Preservation of Mobile Homes, part of the Rent Stabilization Ordinance: Rent stabilization ordinances applicable to mobile homes, which are viewed as a source of affordable housing.
- Single Room Occupancy (SRO) Preservation Ordinance: Rent stabilization ordinances applicable to properties designated as "single room occupancy."
- Condominium Conversion Ordinance: Many cities have enacted condominium conversion ordinances that impose substantive restrictions on the ability to convert apartment units into condominiums, such as prohibiting conversions unless the city or regional vacancy rate is above a certain fixed amount or requiring that a certain number of units must be sold to persons of very low, low and moderate incomes. The purpose of such ordinances is to protect the supply of rental housing.
- Foreclosure Assistance: local programs that assist residents with foreclosure.
- First Source Hiring Ordinances: Such ordinances ensure that city residents are given priority for new jobs created by municipal financing and development programs.

Affordable Housing Policies

- Housing Development Impact Fee (or Jobs-Housing Linkage Fee): A per square foot or per unit development fee levied on market rate residential development that is used to develop or preserve affordable housing. In-lieu fees are different from impact fees and are not as flexible because they relate only to required dedications where they can be appropriately used. Impact fees can be applied before new development is started or completed, which may allow costs to be transferred to future residents in the area. Finally, impact fees can be implemented earlier than in lieu fees so that the capital need matches the need for services (Juergensmeyer and Roberts 2013). A jobs-housing linkage is assessed on developments that will create low-wage jobs and require affordable housing for those workers.
- Commercial Development Impact (or Linkage) Fee: A per square foot development fee levied on non-residential development that is used to develop or preserve affordable housing.

- Affordable Housing Trust Fund: creates affordable rental housing for low and very low-income households by making long-term loans for new construction or for the rehabilitation of existing residential structures through a competitive process (L.A. Housing and Community Investment Department 2014).
- Inclusionary Zoning/Below Market Rate Housing: When a jurisdiction requires a certain percentage of housing units in market-rate developments to be affordably priced to income-specified households. In-Lieu Fees allow a developer to "buy out" of an inclusionary housing obligation. This may seem to defeat the purpose of inclusionary zoning, but the revenue from these fees is used to develop affordable units off-site.
- Local Density Bonus Ordinance: Additional density allowance given in return for affordable housing. The local density bonus is in addition to mandated State requirements.
- Community Land Trusts: Community land trusts are nonprofit, community-based organizations whose mission is to provide affordable housing in perpetuity by owning land and leasing it to those who live in houses built on that land.

Sources used to create the list of anti-displacement strategies

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Appendix U. Policies Adopted by each Los Angeles County City

Policy	#	%	Jurisdictions
Condo Conversion Regulations	24	27%	Agoura Hills, Beverly Hills, Burbank, Calabasas, Culver City, Diamond Bar, Glendale, Hermosa Beach, Huntington Beach, Inglewood, La Canada Flintridge, La Mirada, La Verne, Lakewood, Lawndale, Long Beach, LA City, Manhattan Beach, Pasadena, San Gabriel, Santa Monica, Sierra Madre, West Hollywood
Preservation of Mobile Homes	16	18%	Azusa, Calabasas, Carson, Gardena, Hawthorne, La Verne, Lakewood, LA City, LA County, Malibu, Palmdale, Paramount, Pomona, Santa Clarita, Santa Monica, West Covina
Inclusionary Zoning/ In-Lieu Fees	16	18%	Agoura Hills, Artesia, Calabasas, Claremont, Duarte, Glendale, Huntington Beach, La Verne, Long Beach, Malibu, Monrovia, Pasadena, Rancho Palos Verdes, San Fernando, Santa Monica, West Hollywood
Affordable Housing Trust Fund	7	8%	Calabasas, L.A. City, L.A. County, Long Beach, Pasadena, Santa Monica, West Hollywood
Local Density Bonus	7	8%	Alhambra, Arcadia, Beverly Hills, Downey, LA City, South Pasadena, West Covina
Just Cause	5	6%	Beverly Hills, Glendale, LA City, Santa Monica, West Hollywood
Rent Stabilization/Control	4	4%	Beverly Hills, LA City, Santa Monica, West Hollywood
SRO Preservation	4	4%	Cudahy, Huntington Beach, LA City, Pasadena
Commercial Development Impact Fee	3	3%	Calabasas, LA City (certain areas), West Hollywood
Housing Development Impact Fee	3	3%	La Verne, Pasadena, Rancho Palos Verdes
Rent Mediation	2	2%	Culver City, Gardena
Foreclosure Assistance	2	1%	Lancaster, L.A, County
Community Land Trusts	1	1%	City of Los Angeles
First Source Hiring Ordinance	1	1%	City of Los Angeles

Appendix V. Challenges facing Inclusionary Zoning

A 2013 Center for Housing Policy brief outlined the key challenges affecting policies going forward as follows (Hickey 2013):

1. ***The Growing Difficulty of Applying Inclusionary Housing to Rental Properties***

   Jurisdictions in California have generally responded in one of three ways to prohibitions on inclusionary rental units:

   a. **No longer applying inclusionary requirements to rental developments.** This appears to be the case for a majority of California jurisdictions with existing inclusionary policies.
   b. **Applying rental requirements only to developers that request some form of "assistance," such as zoning modifications or upzoning.** In this case, the municipality conditions its assistance on voluntary compliance with inclusionary rental requirements. This approach is less impactful in places that have recently upzoned desirable development areas — since developers no longer need special approval for higher density — and in places that have made attractive zoning terms available "by right."
   c. **Shifting to a fee-based policy (sometimes with the option to waive out of the fee by providing units).** Rather than require inclusionary units to be built as part of new market-rate developments, several jurisdictions are instead assessing an affordable housing fee on new rental development. Some jurisdictions offer developers the option to produce units on site as an alternative to paying the fee — in essence, the opposite of a traditional inclusionary zoning policy with the option to pay a fee in lieu of including affordable units.

2. ***The Elimination of Redevelopment in California Undermined Many Inclusionary Housing Policies***

   This decision led many jurisdictions in the state to stop enforcing inclusionary policies that were applied only to local redevelopment areas, while significantly decreasing funds for the staff who administer inclusionary housing programs in many municipalities.

3. ***New Inclusionary Housing Policies Have Become Harder to Pass***

   While most inclusionary policies remain on the books, the market decline has made it more difficult for advocates promoting inclusionary housing to pass new policies — particularly in areas that are not experiencing major upzoning or new transit investments.

4. ***It May Get Harder to Support Inclusion Through In-Lieu Fees***

   Most communities with inclusionary housing policies allow developers the option of satisfying their inclusionary requirements by paying an in-lieu fee. Often, the in-lieu fee is set low enough that developers prefer to pay the fee rather than produce the inclusionary units themselves.

   The primary issue with an overreliance on in-lieu fees is that it can work against the goal of creating inclusive communities, particularly if fees are used to support affordable housing outside the area where new market- rate development is occurring.

A second challenge is that in-lieu fees are sometimes set too low to produce an equal number of affordable units elsewhere in the community — regardless of the setting (Hickey 2013, 12).

A third issue is that some communities lack local, affordable housing developers with the capacity to use fee revenues to produce new affordable homes.

Dear Leaders,

I am extremely concerned by the Millennium Tower's exemption from the California Environmental Quality Act. It screams corruption.
How can this be legal? 1050 units on a fault line? The proposal was initially next to the fault line and now its ON the fault line?
The age of transparency is here. Please make this right.

Thank you,

Christine Kantner
3924 W Sunset Blvd.
Los Angeles, CA 90029

Director Ken Alex
Office of Planning and Research
Office of Governor Edmund G. Brown, Jr.
1400 10th Street
Sacramento, California 95814

Re: Opposition to Certification of the Hollywood Center Project
(aka Millennium), Application 2018051002 as an Environmental Leadership
Development Project.

Dear Mr. Alex:

Please reject the proposed Hollywood Center Project. Facts relating to the previous project proposal remain unchanged. By moving forward with essentially the same project you are defying the court ruling and the will of the people.

Regarding the MCAF Vine LLC's (Millennium Partners) application to the Governor to certify the Hollywood Center Project – known as the Millennium – (Pub. Res. Code §2621 et seq.,) I urge you to reject certification of this environmentally unsustainable and dangerous plan to build two skyscrapersatop and next to the Hollywood Earthquake fault, which has been formally identified and located by the California State Geologist.

The Project's proponent, Millennium Partners, is the developer who built
the sinking Millennium Tower in San Francisco. This tower is now notorious around the world for its faulty construction planning, which led to the sinking and leaning of the residential skyscraper -- a rare event globally, or in modern times.

The project should be rejected because:

It fails on the net greenhouse gas test:
A project seeking Environmental Leadership Development Project (ELDP) can't cause a net increase in GHG, and the applicant must include every feasible measure to reduce greenhouse gas emissions, such asrequirements for Vehicle Mile Traveled. I urge California Air Resources Board (CARB) to recognize that every feasible GHG reduction has NOT been included to justify a purchase by the applicant of carbon credits. See Public Resources Code § 21183(TK).

It fails under requirements of AB 900:
Under AB 900, this request must be rejected in whole. The City of L.A. has proposed zone and height district changes for this Project, where carefully reasoned height restrictions apply to it

and all other land in the area. A city's granting of zone and height changes IS a public subsidy that is widely recognized as helping a developer's financial bottom line.

It fails to protect human life as required by state law:
The applicant is not being honest in disclosing the risk of an earthquake. In violation of the Alquist-PrioloEarthquake Fault Zoning Act, these skyscrapers would place occupants on property identified by the State Geologist as underlaid by an active fault. L.A. Superior Court said, in its 2015 ruling to set aside approval of the applicant's previous version of Hollywood Center project (the Millennium), that the Alquist-PrioloEarthquake Fault Zoning Act **prohibits construction** of buildings for human occupancy that lay across traces of an active fault. The State Geologist, not the City of LA, is recognized globally in these matters.The OPR should not recommend, and the Governor should not certify as an Environmental Leadership project, a project the State's Geologist has officially found unsafe and non-compliant with Alquist-Priolo. **(SEE MAP BELOW)**

It fails on the real-world transportation efficiency test:
The project must create at least 15% more transportation efficiency than comparable projects. Hera again, MCAF has completely failed. Its AB 900 application does NOT compare its proposed skyscrapers to real-life high-rises and contains ZERO analysis demonstrating it meets the 15% standard. It sets up a phony comparison to an imaginary "Comparable Residential Project." No. MCAF must present a verifiable baseline using actual residential and hotel projects of similar size and locale. The Governor's certification is required to compare this application to real world projects.

It fails on the local planning policies test:
The applicant wrongly claims the Project is consistent with City of Los Angeles planning goals, policies, and objectives. Proposed projects must be consistent with **existing zoning and general plan designations** before being certified as ELDP projects: it would need deviations including "a zone change to C2-SN, a Height District Change to remove the D Limitation." That's not consistent!

Sincerely,
Christine O'Brien, Hollywoodland

David S. Ewing
1234 Preston Way
Venice, CA 90291

Mr. Ken Alex
Director, Office of Planning and Research
Office of Governor Brown
1400 10th Street
Sacramento, California 95814

Re: Opposition to Certification of the Hollywood Center Project (aka Millennium), Application 2018051002 as an Environmental Leadership Development Project.

Dear Mr. Alex:

We all understand why the projects that most need environmental review are the ones that seek political assistance in evading it. MCAF Vine LLC's (Millennium Partners) application to the Governor to certify the Hollywood Center Project – known as the Millennium – (Pub. Res. Code §2621 et seq.,) epitomizes this corruption of process. Please realize that if you give a pass to a dual-tower high-rise project on an earthquake fault that's been formally identified and located by the California State Geologist, you not only endanger its occupants and neighbors. You also undermine CEQA itself along with the credibility of the State of California.

I urge you to reject certification of this environmentally unsustainable and dangerous plan to build two skyscrapers atop and next to the Hollywood Earthquake fault.

The Outfit behind this project, Millennium Partners, also developed the sinking Millennium Tower in San Francisco. Please watch the ***60 Minutes*** program on this disastrous development, titled "SAN FRANCISCO'S LEANING TOWER OF LAWSUITS," and contact San Francisco County Supervisor Aaron Peskin for reliable information before heading down this path. The SF tower and the officials who green-lighted it are now notorious around the world for its faulty construction planning, which led to the sinking and leaning of the residential skyscraper.

No responsible official should allow this same crew to duck environmental review. Picture yourself on ***60 Minutes***, trying to explain why lives were lost.

You should reject this application because it is dangerous.
The applicant is not being honest in disclosing the risk of an earthquake. This developer has a disastrous track record of cutting corners and is the last applicant that should be allowed to do so again.

It fails to protect human life as required by state law:
In violation of the Alquist-Priolo Earthquake Fault Zoning Act, these skyscrapers would place occupants on property identified by the State Geologist as underlaid by an active fault. L.A. Superior Court said, in its 2015 ruling to set aside approval of the applicant's previous version of Hollywood Center project (the Millennium), that the Alquist-Priolo Earthquake Fault Zoning Act **prohibits construction** of buildings for human occupancy that lay across traces of an active fault. The State Geologist, not the City of LA, is recognized globally in these matters. The OPR should not recommend, and the Governor should not certify as an Environmental Leadership project, a project the State's Geologist has officially found unsafe and non-compliant with Alquist-Priolo. **(SEE MAP BELOW)**

It fails on the net greenhouse gas test:
A project seeking Environmental Leadership Development Project (ELDP) can't cause a net

(cont.)

increase in GHG, and the applicant must include every feasible measure to reduce greenhouse gas emissions, such as requirements for Vehicle Mile Traveled. I urge California Air Resources Board (CARB) to recognize that every feasible GHG reduction has NOT been included to justify a purchase by the applicant of carbon credits. See Public Resources Code § 21183(TK).

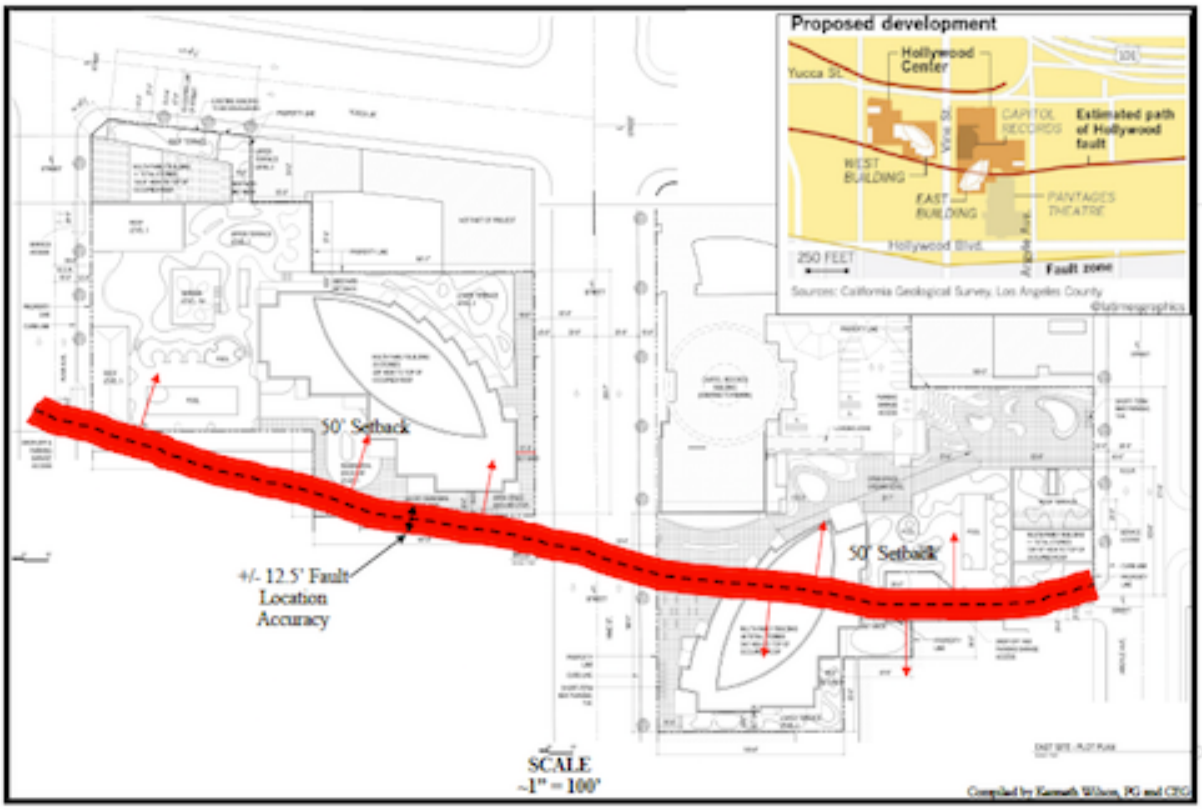
It fails under requirements of AB 900:
Under AB 900, this request must be rejected in whole. The City of L.A. has proposed zone and height district changes for this Project, where carefully reasoned height restrictions apply to it and all other land
in the area. A city's granting of zone and height changes IS a public subsidy that is widely recognized as helping a developer's financial bottom line.

It fails on the real-world transportation efficiency test:
The project must create at least 15% more transportation efficiency than comparable projects. Hera again, MCAF has completely failed. Its AB 900 application does NOT compare its proposed skyscrapers to real-life high-rises and contains ZERO analysis demonstrating it meets the 15% standard. It sets up a phony comparison to an imaginary "Comparable Residential Project." No. MCAF must present a verifiable baseline using actual residential and hotel projects of similar size and locale. The Governor's certification is required to compare this application to real world projects.

It fails on the local planning policies test:
The applicant wrongly claims the Project is consistent with City of Los Angeles planning goals, policies, and objectives. Proposed projects must be consistent with **existing zoning and general plan designations** before being certified as ELDP projects: it would need deviations including "a zone change to C2-SN, a Height District Change to remove the D Limitation." That's not consistent!

Yours truly,

David S. Ewing



PROPOSED HOLLYWOOD CENTER – APPROXIMATE LOCATION OF HOLLYWOOD FAULT

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Violet Williams

HOLLYWOOD UNITED NEIGHBORHOOD COUNCIL

Certified Neighborhood Council #52
P.O. Box 3272, Los Angeles, CA 90078
Email:info@myhunc.com

May 30, 2018

Governor's Office of Planning & Research
Re: HOLLYWOOD CENTER PROJECT
Tracking Number: 2018051002

The Hollywood Center Project (HCP) falls within the boundaries of the Hollywood United Neighborhood Council (HUNC). Our Planning and Land Use Management (PLUM) Committee met with a representative of this project on May 3, 2018 at which time the HCP representative advised us that no Plans or Notices were going to be issued until late Summer or early Fall, 2018.

To the contrary, on May 14 we were very surprised to find out that the HCP had already filed an Application for Environmental Leadership Development Project (AELDP) and that the Public Comment period had already begun on May 2, the day before the PLUM hearing. Approximately one week after that HUNC received the filed Plans from the Los Angeles City Department of Planning.

The original Millennium Project, the precursor project for the HCP, was filed by Millennium Hollywood LLC in 2013. The project did not go forward due, in part, to the question as to whether or not the Hollywood earthquake fault line ran under the project or was next to it and CalTrans concerns for the impact on the adjacent freeway entrances. The HCP is simply the old plan with some changes.

There are other concerns about this project and the developer's methods as the developer is also responsible for the Millennium Tower in San Francisco that is now sinking into the ground because a decision was made that it was unnecessary for the foundations to go down to bedrock. Both the "old" Millennium Hollywood project, the San Francisco Millennium project, and the Hollywood Center Project involves (or involved) extremely tall buildings and dense development and requires (or required) substantial and unusual variances. All of the above demand a greater scrutiny by the public.

The Millennium representative subsequently informed HUNC at its May 21st meeting that the AELDP was a California State issue and that it essentially was a request to limit the timing of any potential lawsuits against the developers. The fact that they have tried to build the earlier version of the current proposed

development next to an earthquake fault and made a decision to build the San Francisco Millennium Tower on inadequate footing makes it clear that limiting the time to file any lawsuit would be detrimental to the public interest due to the potential problems of an earthquake and any damage that might occur to the HCP as well as the extensive problematic issues and potential public area problems that will result from the extreme size of the development.

In addition, because of the size and scope of the Hollywood Center Project and the extraordinary potential for public harm if they do not complete it with due considerations to safeguards, it would appear inappropriate to limit the time for any potential lawsuit to be filed or grant any variances or exceptions until all public hearings, EIR and final plans are completed.

HUNC formally voted at their regularly scheduled meeting on May 21 and approved that this letter be forwarded requesting a 30 day extension of time for the public to comment as the initial 30 day limitation is too severe, especially in light of the lack of transparency by the developer of their plans to the surrounding public communities.

Thank you for your consideration,
Sincerely yours,

Jim Van Dusen*
Chair, Planning and Land Use Management Committee

Susan Swan*
President

*signed electronically

Dear state elected officials,

As a voter, I am highly disturbed to learn there are loopholes designed to intentionally prevent the public from participating in the public hearing process. Public participation is a right we all have as tax payers and residents. To discover you are working against us on this, has caused a state wide concern regarding our voting choices in leadership.

The Millennium developers have quietly moved for an exemption from CEQA by claiming their twin skyscrapers proposed atop the Hollywood towers as an "Environmental Leadership Development Project".

This new proposal includes skyscrapers with a far higher count of apartments (1050 units), and one of them -- the easternmost tower -- has now been moved to sit directly above the fault instead of next to the fault. The applicant is not being honest in disclosing the risk of an earthquake. In violation of the Alquist-Priolo Earthquake Fault Zoning Act, these skyscrapers would place occupants on property identified by the State Geologist as underlaid by an active fault.

L.A. Superior Court said, in its 2015 ruling to set aside approval of the applicant's previous version of Hollywood Center project (the Millennium), that the Alquist-Priolo Earthquake Fault Zoning Act prohibits construction of buildings for human occupancy that lay across traces of an active fault. The State Geologist, not the City of LA, is recognized globally in these matters.

The OPR should not recommend, and the Governor should not certify as an Environmental Leadership project, a project the State's Geologist has officially found unsafe and non-compliant with Alquist-Priolo.

The question continues to go unanswered- why in the world would you put so many human beings in danger ?!

It would take me all day to write everything that is wrong with all of this. But decisions like this will certainly tell us, the people that voted you into office, where we are on your priority list.

Please follow the laws and let the evidence speak for itself. We don't need more lawsuits against the city or the state.

Thank you

Jennifer G.

Millennium Hollywood Center Project
Tracking # 2018051002
Hollywood and Vine

Cross streets included in projects, impacted, and should REQUIRE STUDIES:
Yucca, Ivar, Vine, Argyle...

Case # CPC-2018-2657-CA
CPC-2018-2658-CE

To Whom It May Concern:

We would like to express our opposition of any 'streamline - ELDP' process for Millennium Hollywood Center Project.

Millennium's controversial Vine St. projects have a deeply worrying and quite controversial and corrupt history.

From the lack of the city's transparency to the Millennium funded area councilmember, the Mayor, and the other councilmembers.
These dangerous projects were obviously a 'done deal' before any pseudo hearings occurred.

Having participated in all the Millennium hearings, where the turnout and the opposition was overwhelming, and very active in our community, it was shocking to witness how Millennium succeeded in paying off so many city politicos, organizations opposed, city departments, and even succeeded in getting many law suits against the projects withdrawn by spreading around 'community benefits' to all that would be negatively impacted and were originally against Millennium Vine projects.

Having witnessed all of this, over the course of many months and many hearings, one could not help but wonder is this what went on in San Francisco..and how and why the Tilting and Leaning Millennium San Francisco Tower was occupied (then evacuated) when Millennium evidently knew of the problems, but kept them quiet until they couldn't any longer.
Are the risks of bad projects, and gambling with lives worth it?

Were 'community benefits' thrown around to keep people who also may have suspected the Leaning and Tilting Millennium San Francisco Tower problems quiet?

How different is this from Millennium hiring an unqualified geological consultant to contradict the State Geologist findings of the dangerous active earthquake fault line running through Hollywood Vine building site?

'Community benefits' and generous campaign contributions were spread around to help city politicos turn a blind eye to both State Geologist warnings (Dr. John Parrish confirmed active EQ fault line going through building site) and Caltrans warnings (deadly unsafe traffic conditions) and ignore it all and approve massive projects they were warned could actually risk human lives.

The State Geologist confirmed Active EQ Fault Line issue has not been resolved, has not been ruled on, yet the area councilmember, whose campaigns have been funded by Millennium, continues to misrepresent the issue, claiming to the public that the Judge found no active EQ fault line and all is safe. When the truth is that has not been ruled on since documents were not ready to be submitted by the deadline.

Please do not allow Millennium to have a 'streamlined ELDP' process.

Lives could be at stake and the Los Angeles leaders cannot be trusted to do due diligence to assure projects are safe and will not risk lives..

Unfortunately and potentially tragically, city leaders have consistently ignored dangerous project warnings, have always sided with developers and have been willing to risk human lives and risk law suits from communities throughout the city, whom they refuse to listen to, ignore and dismiss, in favor of accommodating developers funding their political careers.

MASSIVE HOLLYWOOD PROJECT SITS ATOP QUAKE FAULT, CALIFORNIA SAYS
http://www.latimes.com/local/lanow/la-me-ln-hollywood-fault-map-20141106-story.html

“Our conclusion from the data is that there is an active fault, and it does run right along the course that’s right along the map,” state geologist John Parrish said.

NEW STATE FAULT MAPS SHOW HIGHER EARTHQUAKE RISKS IN HOLLYWOOD
http://articles.latimes.com/2014/jan/08/local/la-me-0109-hollywood-fault-20140109

The state's new map shows that three prominent Hollywood developments — the proposed Millennium Hollywood skyscraper project, The Blvd6200 development and a planned apartment complex on Yucca Street — are within the roughly 500-foot fault zone.

State geologist John Parrish said the state's fault line goes underneath both Millennium and Blvd6200.
"We feel very confident about where we drew that line, within a 50-foot accuracy back and forth..we're very confident it's there," Parrish told reporters at a downtown Los Angeles news conference.

"Surface rupture is very dangerous. In fact, it's calamitous to structures that are built across the surface trace of an active fault."

Los Angeles officials did not order trenching for any of the three projects before the City Council approved those projects.

We also are opposed to any new project blocking from view (and a very iconic view looking north up Vine St.), and compromising a historic resource, as Capitol Records Building is Historic Cultural Monument #857..
The historic building and the valuable recording studios and famous echo chambers could be compromised, building so close to Capitol Records Building and on top of an active EQ fault line.

HOLLYWOOD HERITAGE'S REASONS FOR OPPOSING MILLENNIUM VINE PROJECTS:

http://www.hollywoodheritage.org/contact

"Our organization has nominated many of the current Historic Cultural Monuments, listed the Hollywood Boulevard Commercial and Entertainment District in the National Register of Historic Places at the national level of significance, provided technical assistance to developers and owners of significant properties, and participated in public policy discussions through the formulation of the Community Redevelopment Plan of 1986 and subsequent urban design plans, specific plans and in property entitlement discussion involving historic resources.
These efforts have resulted in the rehabilitation of significant landmarks and districts in Hollywood.

Our expertise in this area has led us to the conclusion that the Millennium Hollywood project has significant and adverse impacts on a number of Hollywood's historic resources.

CEQA guidelines define a project as having a significant environmental impact when the project causes a substantial adverse change in significance of a historical resource as defined in State CEQA Section 15064.

The City of Los Angeles CEQA Thresholds Guide (2006, p. D.3-3) also maintains that a project would have a significant impact on historic resources if the project results in a substantial adverse change in the significance of a historic resource by construction that reduces the integrity or significance of important resources on the site or in the vicinity via alteration of the resource's immediate surroundings.

....we believe that the proposed project would substantively alter the context in which these buildings gained their significance by compromising the immediate surroundings.

Portions of the project are grossly out of proportion with the identified resources, thereby minimizing them and irretrievably altering their setting.

Additionally, while we appreciate the inclusion of open space, the current design significantly changes the pedestrian environment of Hollywood.

Like many previous developments, it draws pedestrians away from the street and irrevocably alters the historic street wall along Vine and Argyle.

We also find the current version of the Millennium Hollywood Draft EIR to be deficient in its assessment that the project would not cause an adverse change in significance for the Hollywood Boulevard Commercial and Entertainment Historic District.

The heart of Hollywood is listed in the National Register of Historic Places and functions as one of the City of Los Angeles' major tourist destinations and economic engines.

The Hollywood Boulevard Commercial and Entertainment Historic District is a 12 block area of the commercial core.

The district contains 103 of the most important buildings in Hollywood, listed at the national level of significance in the National Register of Historic Places.

The development pattern of the 1920s and 1930s was characterized by the construction of buildings of generally 12 stories at major intersections, flanked by one and two-story retail structures.

The District was formally designated by the National Park Service on behalf of the Secretary of the Interior in 1985.....

L.A. City Council also ignored Caltrans letters and warnings and claimed all to be safe with Millennium projects.....

Caltrans Waves a Red Flag on Millennium
http://articles.latimes.com/2013/jun/19/business/la-fi-hiltzik-20130619

JUDGE THROWS OUT HOLLYWOOD MILLENNIUM SKYSCRAPER PROJECT
http://www.laweekly.com/news/judge-throws-out-hollywood-millennium-skyscraper-project-5530876

"Superior Court Judge James C. Chalfant has stopped the Millennium Hollywood twin skyscrapers project in its tracks, finding that top city officials ILLEGALLY IGNORED required parts of the Environmental Impact Review process and warning that the project could dramatically worsen traffic on the Hollywood Freeway and in the surrounding neighborhood.

His ruling means the investors cannot get any building permits from the city.

THE JUDGE FOUND THAT TOP LOS ANGELES ELECTED AND APPOINTED OFFICIALS IGNORED CALTRANS WARNINGS about the dual towers' effects on traffic heading on and off the often backed-up ramps on the nearby 101 freeway.

Chalfant lectured city leaders, saying:

“The congestion of freeways in L.A. is subject to review because it's so terrible, and anything that may make it worse needs to be examined.

The issue is whether you need to follow the provisions of the responsible agency, Caltrans.

And the language and scholarly work on the issue says overwhelmingly 'yes.' …

There were many aspects Caltrans wanted you to look at, that you didn't look at."

Instead of including in its Environmental Impact Report, or EIR, the required traffic studies conducted by Caltrans, Garcetti and the City Council chose to press forward with their own freeway traffic studies.

Judge Chalfant says this was illegal.

He ruled, the city is not allowed to conduct studies on freeway traffic using its own definitions and methods.

"Freeway traffic is the responsibility of experts at Caltrans, specifically, and not of the Los Angeles Planning Department or any other city department."

An interesting (and somewhat sad, but ironic) note...

During city council hearings the Millennium Vine developer announced his offer, his 'benefit to the community' in an effort to prove Millennium Vine projects would not impact or add to the already out of control, always in gridlock traffic in the area (proven by Caltrans warnings and the Judges ruling) , because all those inhabiting his twin skyscraper projects, one proposed to be the tallest in the history of Hollywood at 49 stories (on an active EQ fault line), would not create worse traffic, because all that inhabited his twin towers would not have cars, but would all ride bikes...
So his 'community benefit' offer was an on site 'bicycle repair shop'.

Had he any knowledge of the area he would have known a cyclist had just been killed on Vine St., down the street from Millennium's proposed projects, the week before.

These sorts of lies are why Judges intervene in dangerous, bad, and corrupt projects.

"The issue is whether you need to follow the provisions of the responsible agency, Caltrans.
And the language and scholarly work on the issue says overwhelmingly 'yes.' …
There were many aspects Caltrans wanted you to look at, that you didn't look at."..Judge Chalfant

Please do not allow a 'streamline - ELDP process' for Millennium Hollywood Center Project, a project confirmed to be dangerous by the State Geologist, and a project that is so oversized, it will be dangerous and destructive to an area already experiencing too many overly dense projects and already experiencing complete and dangerous traffic paralysis.

Thank you,
Mr. & Mrs. Jim Geoghan
Hollywood, Ca.

Dear Governor's Office of Planning and Research,

I am a long-time resident of the Beachwood Canyon area of the Hollywood Hills, the neighborhood just below the Hollywood sign. I am writing today to oppose the building of the Millenium Project, otherwise known as the Hollywood Center on the proposed sites in Hollywood.

I. SIZE AND SCALE: I believe the size and scale of the project are totally out of character with surrounding buildings. It would dwarf other "high rise" buildings in the area by over thirty (30) stories, which seems like a gross over-improvement. Let's take historical lessons from areas like Bunker Hill that were demolished and flattened to create the enormous buildings of downtown L.A. While this is inevitable to some degree, I believe it should be done more gradually in already developed areas. Buildings of this size create an almost 230% height increase of surrounding architecture, which is a bit excessive.

II. LEGAL ISSUES: There are very strict height restrictions in Beachwood Canyon (albeit residential, yes), so why aren't there height restrictions on commercial development? Construction of the Target shopping center on Western Ave. and Sunset Blvd. was halted due to an over-build height of 39 feet. A lawsuit was filed when the surrounding neighborhood association sued the City of Los Angeles. That leads me to ask: are buildings of this size *really* allowed in the Hollywood area and do building codes allow for this? Rather than enter into a lengthy legal battle, perhaps it's best to just never let a development like this get off the ground, no pun.

II. TRAFFIC CONGESTION: I live in Beachwood Canyon (Hollywood Hills) and commute to the Larchmont Village area (Hancock Park) every day. What used to take 15 minutes with traffic now takes 30 due to congestion from new development (for comparison sake, on a Sunday it's a 10 minute drive). The north/south corridor streets of Gower, Bronson, Vine, Cahuenga, Wilcox, Highland are already jammed with traffic during rush hour, and this will greatly worsen the situation.

III. NOT BEING WHAT IT SAYS IT IS - WILL IT TRULY BE SENIOR HOUSING? - After searching for low income housing for my mother, I am indeed aware of the shortage of affordable senior housing in Los Angeles, and this project would remedy that need. However, if the project would truly be senior housing, that would be wonderful, but let's face it, it will be low-income units for a while and then when that "permit" expires, it will be luxury apartments (if that), and office space. I think this is such an overbuild, that unless it were senior housing *and* low-income housing combined, it would essentially not be a good use of space. This development is right around the corner to a big homeless encampment underneath the Gower St. and 101 freeway underpass. Do we want to rub our faces in the continued issue of lack of affordable and low income housing? In the best-case scenario, this would then essentially be a housing project which I'm still opposed to on this scale.

IV. BUILDING SAFETY/EARTHQUAKE SAFETY - A building of this size with is a safety hazard in an earthquake zone. I am not a scientist, seismologist, building and safety inspector or land surveyor, but I need to be none of these things to see that on the hilly and sloping lot, it is

not safe to build a building of this height in this location. It endangers the Capitol Records building, 101 freeway, Knickerbocker Apartments, and countless other structures in the vicinity.

V. AESTHETIC - it will simply be unattractive to look at a building so much taller than all the other buildings. It will also block the view of the city from certain sites in the Hollywood Hills neighborhood, and unless it is an architectural masterpiece, might just be plain ugly. Los Angeles used to be one of the most beautiful cities in the world and I don't know if we can still call it that today. I hope city planning keeps up with the design review process and encourages "beautiful architecture" throughout the city. I know this is subjective, yes, but a tasteful eye it was we need heading into the millennium, not two monstrosities in an already dense and historic neighborhood.

Thank you for taking the time to read my letter and for taking into account the above reservations.

Sincerely,

Miranda Richards

--

Miranda Richards
Larchmont Executive Suites
200 N. Larchmont Blvd. 90004
mirandarichards@sbcglobal.net
323-463-5905

SUBJECT: HOLLYWOOD CENTER
TRACKING: 2018051002

Dear Government Officials,

I am a 45 year resident and activist in Hollywood, and I am writing to you about the Hollywood Center Project. I hope my comments will be part of the public record and that you will take them under consideration in making your decisions.

Several years ago when this project was first presented as the MILLENNIUM PROJECT I wrote and testified AGAINST THIS PROJECT. I feel even more strongly that THIS PROJECT MUST BE DENIED. Since this project was originally and mistakenly approved by the City of Los Angeles, these developers and the City have lost lawsuits filed by stakeholders. Now this project appears again. Changing the name and some of the details does not change the project.

The Hollywood Center is still GROSSLY AND DANGEROUSLY AND UNPRECEDENTEDLY OUT OF SCALE with the rest of Hollywood. Since this project was first presented other projects, much smaller ones, have been built in Hollywood, a 1920's small town, created neighborhood, with limited infrastructure---unlike for example downtown Los Angeles or Century City built with much wider streets. The streets in Hollywood used to be gridlocked for several hours a day and night, but since the recently built development, the streets are now NOT gridlocked for just several hours a day. Traffic is so much worse than when this project was first presented. Streets are already at over capacity most hours of the day. Also the Hollywood Center Project does not specifically mitigate its impact on the congestion that will occur since it is a block away from the 101 Freeway. Caltrans had expressed its grave concerns several years ago when this project was first presented, and nothing has changed since, except that conditions are even worse. Parking for bicycles and a repair shop are not sufficient. Why does this project have to be so big? Greed rather than safety is the priority. Hollywood can simply not sustain this. This project will not enhance Hollywood, but kill it. They do rightly reference "walkability" in regards to Hollywood. It will be the only way one will be able to access this significant part of Hollywood for miles.

Besides having streets navigable for transportation and emergencies in and through Hollywood there is another extremely important consideration. Hollywood is bordered to the north by the Hollywood Hills. In case of an emergency the ONLY way to evacuate these residential neighborhoods which sit in A VERY HIGH FIRE HAZARD ZONE is to the south through Hollywood. Many streets to the south are dead ended because they are cut off by the 101 Freeway, therefore the few streets that go through, like Vine and Gower are extremely important when there is limited infrastructure. For example, in the 1960's there was a fire where I now live, in Hollywoodland situated in the Hollywood Hills and almost directly north of Vine Street. There was only a small fraction of the traffic in Hollywood that there is now. Yet accounts of the fire say it took 200 LAPD just to handle the evacuation of the hills. It was the biggest traffic jam in the history of Hollywood to that time. What would happen today? Current conditions are already problematic. The addition of the Hollywood Center Project would make them utterly impossible. How many hundreds of people will die? How many lives are worth the temporary building jobs?

According to the state geologist this project sits on an ACTIVE FAULT which is against the law to build on. It is unbelievable that his project is being presented again. We all know why the word "MILLENNIUM" has been removed. These same developers built the Millennium Tower in San Francisco. Stakeholders had testified that the land was geologically unsuitable for that massive project. Their concerns were ignored, and the government approved it. The tower is now leaning and sinking, and it will probably be the largest real estate scandal and litigation in the history of the United States. Now unrepentant they want to repeat the same mistakes in Hollywood. Will the government repeat its same mistakes? At what point is this criminal? **The government should use the utmost skepticism in evaluating this project presented by these tainted and discredited developers instead of expediting it.** If you do approve this dangerous and irresponsible project than you might as well disband any planning departments and laws because it means that anything and everything can get approval regardless of safety.

You have the rare opportunity to view the future of a project before it is even built. Just look at San Francisco. I wish I could say "ignore it at your peril." But it's really "at OUR peril," because we are the ones that will have to live with it--not you. It will be our neighborhood you will be destroying and our lives you will be imperiling--not yours.

Don't be fooled by all of the "politically correct", "green", "senior living", "affordable housing," "public transportation", "bicycle" tap dance they are doing. It is the most massive, most dangerous, most inappropriate, and most destructive project ever introduced in Hollywood.

REJECT IT.

Sincerely,
Sarajane Schwartz

Part 1...
State Geologist Confirmed Active EQ Fault Line Building Site and Caltrans Warnings of Potentially 'Unsafe & Deadly' Traffic.. Ignored.

To Whom It May Concern:

NO to streamlined, ELDP process for MILLENNIUM HOLLYWOOD CENTER PROJECT
Hollywood & Vine
L.A. Ca.
Yucca St., Ivar Ave. Vine St., Argyle Ave.
Tracking #201805100

Case # CPC-2018-2657-CA
CPC-2018-2658-CE

If ever a project should be DENIED an ELDP, streamlined process, and must be REQUIRED to do all the CEQA-EIR processes/testing, to prevent risking lives, it's MILLENNIUM 'S HOLLYWOOD CENTER PROJECT

The many reasons are below:

-IGNORED....State Geologist Confirmed Active EQ Fault Line....IGNORED (unresolved)

-IGNORED....Caltrans warnings of potentially 'deadly, unsafe' traffic in the area and the nearby 101 freeway entrance caused by such oversized projects for the area. (the tallest building in Hollywood History) ....IGNORED
(reason for a Judge shutting Millennium Vine projects down..Judge's ruling below)

-MILLENNIUM SAN FRANCISCO LEANING AND TILTING TOWER..EVACUATED..
(many of the same issues of MILLENNIUM HOLLYWOOD projects and use of the same company that signed off on it's safety as MILLENNIUM HOLLYWOOD project company that contradicted STATE GEOLOGIST'S CONFIRMATION OF ACTIVE EQ FAULT LINE and DANGEROUS TO LIVES BUILDING SITE IN HOLLYWOOD).

-Building site is in front of and will block from view, HCM, Iconic Historic Cultural Monument Capitol Records Building, potentially compromising the famous and world renown HCM historic resource, and the valuable echo chambers below and recording studios....

-Protections for the HCM #827 Capitol Records Building preservation and valuable world renown echo chambers and recording studios were actively taking place by the Music Industry when another developer of a project one third the size of MILLENNIUM's project, was proposed.
Once Millennium took over and bought Capitol Records Building no more active protections were taking place by the Music Industry, yet Millennium project is 49 stories instead of 20.
Why?
Millennium's generous Campaign Contributions to City Council and the Mayor, and 'Benefits To The Community' ($$$$$$$$), which many organizations opposed to MILLENNIUM VINE projects accepted and suddenly there were no problems with MILLENNIUM VINE HOLLYWOOD projects. .

MILLENNIUM VINE... HOLLYWOOD :

STATE MAP SHOWS ACTIVE FAULT LINE UNDER PROPOSED HOLLYWOOD SKYSCRAPER PROJECT
http://abc7.com/news/map-shows-fault-line-under-proposed-hollywood-

skyscraper-project/384590/

"It has the potential to rupture sometime in the future..the best thing to do is stay off the trace.." State Geologist Tim McCrink

MASSIVE HOLLYWOOD PROJECT SITS ATOP QUAKE FAULT, CALIFORNIA SAYS
http://www.latimes.com/local/lanow/la-me-ln-hollywood-fault-map-20141106-story.html

“Our conclusion from the data is that there is an active fault, and it does run right along the course that’s right along the map,” state geologist John Parrish said.

NEW STATE FAULT MAPS SHOW HIGHER EARTHQUAKE RISKS IN HOLLYWOOD
http://articles.latimes.com/2014/jan/08/local/la-me-0109-hollywood-fault-20140109

The state's new map shows that three prominent Hollywood developments — the proposed Millennium Hollywood skyscraper project, The Blvd6200 development and a planned apartment complex on Yucca Street — are within the roughly 500-foot fault zone.

State geologist John Parrish said the state's fault line goes underneath both Millennium and Blvd6200.
"We feel very confident about where we drew that line, within a 50-foot accuracy back and forth..we're very confident it's there," Parrish told reporters at a downtown Los Angeles news conference.
"Surface rupture is very dangerous. In fact, it's calamitous to structures that are built across the surface trace of an active fault."
Los Angeles officials did not order trenching for any of the three projects before the City Council approved those projects.

KFI Radio..Audio..The Tim Conway Show
The City knew and ignored the active earthquake fault evidence..
http://kfiam640.iheart.com/media/podcast-conway-on-demand-TimConwayJr/hollywood-fault-line-8pm-815-23591925/

O'FARRELL SETTLING IN AS HOLLYWOOD COUNCILMAN
http://beverlypress.com/2013/08/o%e2%80%99farrell-settling-in-as-hollywood-councilman/
MILLENNIUM..
"I think it’s a good, solid project"..Opponents of the project expressed frustration that the council opted to vote on the development even though state agencies were investigating claims that the project site sat on the active Hollywood fault.
O’Farrell ..“I think we’re going to be in really good shape there,” he said. “There’s no evidence anywhere that suggests that a fault line runs directly under where the buildings will

be constructed. That’s just not true. We all know there’s a fault line in Hollywood, but this city is filled with fault lines. The opponents took an OPINION..they took the initial tract map evaluation out of context and then formulated an opposition based on that. It’s just an OPINION that they took.”

O'Farrell received at least $4,900 from the developers and their associates during his campaign.

He said he has a pretty good sense of where development does and does not belong..
("It has the potential to rupture sometime in the future. The best
thing to do is STAY OFF THE TRACE".. State Geologist Tim McCrink)

MILLENNIUM HOLLYWOOD..DEADLY UNSAFE TRAFFIC CONDITIONS..CALTRANS..INADEQUATE MILLENNIUM EIR

CALTRANS WAVES A RED FLAG ON MILLENNIUM
http://articles.latimes.com/2013/jun/19/business/la-fi-hiltzik-20130619

...a state agency is taking up the cudgel against the city of Los Angeles, accusing city officials of using bogus statistics and trampling over state law in an effort to push the project through to approval by the City Council.

The state agency..California Department of Transportation... Caltrans.. is responsible for the health and welfare of the 101 Freeway, which winds within a block or two around the Millennium site. The agency says, quite reasonably, that a $664-million project — comprising 461 residential units, 254 hotel rooms, more than a quarter-million square feet for office space, and 80,000 square feet of retail in two towers looming over the landmark Capitol Records building close to the already-busy corner of Hollywood and Vine — can't help but have a marked effect on the freeway.
In fact, Caltrans makes it plenty clear that without significant changes in the plan, the effect on the 101 could be disastrous.....
...Caltrans is irked city officials have wholly ignored it's concerns.
In a May 7 letter to Councilman Eric Garcetti, whose district encompasses the Millennium site — and who is the mayor-elect — the agency said that it hadn't heard from city officials since Feb. 19, when it listed a raft of misgivings about the Millennium....
two bottom lines in the Caltrans analysis:
one, the potential impacts from this mega-project will make the freeway and surrounding streets more unsafe;

and two, the failure to measure and properly mitigate these impacts violates the California Environmental Quality Act, or CEQA....
Millennium does have the current city administration's favor. But the unresolved questions about traffic suggest that the whole scheme may need a better going-over than it has received.

ONE OF MANY CALTRANS LETTERS TO COUNCILMAN GARCETTI WARNING OF MILLENNIUM TRAFFIC UNSAFE CONDITIONS
https://s3.amazonaws.com/s3.documentcloud.org/documents/715653/col-mill-calt-may-7-letter-to-city.pdf

Dear Councilmember Garcetti....We are writing this letter to reiterate Caltrans' concerns that the (Millennium) EIR , FEIR, and Traffic Study for this project did not fulfill requirements of CEQA... with existing conditions of the freeway operating at Level of Service "F"....
Caltrans sent a letter dated Feb. 19, 2013.
We have not received a response from the city.
L.A. Planning Commission approved project April 27, 2013.
We would like to once again bring city's attention that project impact will result in unsafe conditions.
As mentioned in previous letters, these concerns have not been addressed in the EIR.

STATE GEOLOGIST WARNINGS IGNORED
"We feel very confident..we're very confident it's there," Parrish told reporters.."Surface rupture is very dangerous. In fact, it's calamitous to structures that are built across the surface trace of an active fault." State Geologist Dr. John Parrish....
"It has the potential to rupture sometime in the future..the best thing to do is stay off the trace.." State Geologist Tim McCrink)

CALTRANS WARNINGS IGNORED
" Dear Councilmember Garcetti...We are writing this letter to reiterate Caltrans' concerns that the (Millennium) EIR , FEIR, and Traffic Study for this project did not fulfill requirements of CEQA...
We would like to once again bring city's attention that project impact will result in unsafe conditions.
As mentioned in previous letters, these concerns have not been addressed in the EIR".....Caltrans

L.A. COUNCIL OK'S HOLLYWOOD SKYSCRAPERS DESPITE CONCERNS OVER QUAKE FAULT LINE
http://articles.latimes.com/2013/jul/24/local/la-me-millennium-vote-20130725

"...concerns about seismic safety were raised, citing the project's proximity to the Hollywood fault.

On Saturday, the head of the California Geological Survey, John Parrish, sent a letter to Council President Herb Wesson alerting him that the skyscrapers "may fall within an earthquake fault zone."

Parrish said Wednesday that a map drawn by his agency in 2010 showed that the Hollywood fault "goes right through the Millennium site."

He criticized a seismic report produced by the developer that said extensive testing showed that the building site was safe and did not lie on the fault line.

Parrish said the report did not refer to his agency's map and left out other important information.

Mayor Garcetti announced Wednesday that he would sign the deal.."

JUDGE THROWS OUT HOLLYWOOD MILLENNIUM SKYSCRAPER PROJECT
http://www.laweekly.com/news/judge-throws-out-hollywood-millennium-skyscraper-project-5530876
Superior Court Judge James C. Chalfant has stopped the Millennium Hollywood twin skyscrapers project in its tracks, finding that top city officials illegally ignored required parts of the Environmental Impact Review process and warning that the project could dramatically worsen traffic on the Hollywood Freeway and in the surrounding neighborhood.

His ruling means the investors cannot get any building permits from the city.
The judge found that top Los Angeles elected and appointed officials ignored Caltrans' warnings about the dual towers' effects on traffic heading on and off the often backed-up ramps on the nearby 101 freeway.

In this latest of several major court losses involving Mayor Eric Garcetti's controversial dream of bringing tall towers and heavier density to low-slung Hollywood,

Chalfant lectured city leaders, saying:

“The congestion of freeways in L.A. is subject to review because it's so terrible, and anything that may make it worse needs to be examined.

The issue is whether you need to follow the provisions of the responsible agency, Caltrans.

And the language and scholarly work on the issue says overwhelmingly 'yes.' …

There were many aspects Caltrans wanted you to look at, that you didn't look at."

Instead of including in its Environmental Impact Report, or EIR, the required traffic studies conducted by Caltrans, Garcetti and the City Council chose to press forward with their own freeway traffic studies.

Judge Chalfant says this was illegal.

He ruled, the city is not allowed to conduct studies on freeway traffic using its own definitions and methods.

Freeway traffic is the responsibility of experts at Caltrans, specifically, and not of the Los Angeles Planning Department or any other city department.

Thank you,
William A. Miller
Los Angeles, Ca.

"NO" to dangerous HOLLYWOOD CENTER PROJECT being a streamlined ELDP project
Tracking #201805100

PART 2...Protection and Preservation of HCM #827 Capitol Records Building, World Renown Valuable Recording Studios and Les Paul Designed Echo Chambers.
http://www.hollywoodheritage.org/contact

Support for Hollywood Heritage concerns about Millennium project on dangerous building site, on a state geologist confirmed Active EQ Fault Line, right in front of, and blocking from public view, Iconic HCM Capitol Records Building, compromising the historic resource and the world renown valuable recording studios and Les Paul invented echo chambers below.

W
CAPITOL RECORDS

Hollywood Heritage's Position on the Millennium Project (Capitol Records Building) proposed for Hollywood.

Following a recent meeting, a Hollywood Heritage member contacted our office and asked if we could clarify our position on the proposed Millennium project for the Capitol Records property. The Board of Hollywood Heritage and its Preservation Issues Committee are continuing to meet with Millennium regarding the project.

Our only public position at this time is our response to a draft EIR which is as follows:

February 16, 2013

Srimal Hewawitharana, Environmental Specialist II

Los Angeles Department of City Planning

200 N. Spring Street, Room 750

Los Angeles, CA 90012

Dear Ms. Hewawitharana:

Re: Millennium Hollywood Project, ENV-2011-675-EIR
The Board of Directors of Hollywood Heritage, its Preservation Issues Committee and its members, thank you for the opportunity to review and comment on the Millennium Hollywood Project, and the accompanying Draft Environmental Impact Report (DEIR).

For three decades Hollywood Heritage has been an advocate of the preservation and protection of Hollywood's historic resources. We support the goal of preserving what is most significant in Hollywood, while encouraging responsible new and infill development. Our organization has nominated many of the current Historic Cultural Monuments, listed the Hollywood Boulevard Commercial and Entertainment District in the National Register of Historic Places at the national level of significance, provided technical assistance to developers and owners of significant properties, and participated in public policy discussions through the formulation of the Community Redevelopment Plan of 1986 and subsequent urban design plans, specific plans and in property entitlement discussion involving historic resources. These efforts have resulted in the rehabilitation of significant landmarks and districts in Hollywood.

Our expertise in this area has led us to the conclusion that the Millennium Hollywood project has significant and adverse impacts on a number of Hollywood's historic resources.

CEQA guidelines define a project as having a significant environmental impact when the project causes a substantial adverse change in significance of a historical resource as defined in State CEQA Section 15064. The City of Los Angeles CEQA Thresholds Guide (2006, p. D.3-3) also maintains that a project would have a significant impact on historic resources if the project results in a substantial adverse change in the significance of a historic resource by construction that reduces the integrity or significance of important resources on the site or in the vicinity via alteration of the resource's immediate surroundings.

While we appreciate some of the mitigation measures designed to preserve the historic Capitol Records and Gogerty Building, we believe that the proposed project would substantively alter the context in which these buildings gained their significance by compromising the immediate

surroundings. Portions of the project are grossly out of proportion with the identified resources, thereby minimizing them and irretrievably altering their setting. Additionally, while we appreciate the inclusion of open space, the current design significantly changes the pedestrian environment of Hollywood. Like many previous developments, it draws pedestrians away from the street and irrevocably alters the historic street wall along Vine and Argyle.

We also find the current version of the Millennium Hollywood Draft EIR to be deficient in its assessment that the project would not cause an adverse change in significance for the Hollywood Boulevard Commercial and Entertainment Historic District.

The heart of Hollywood is listed in the National Register of Historic Places and functions as one of the City of Los Angeles' major tourist destinations and economic engines. The Hollywood Boulevard Commercial and Entertainment Historic District is a 12 block area of the commercial core. The district contains 103 of the most important buildings in Hollywood, listed at the national level of significance in the National Register of Historic Places. The development pattern of the 1920s and 1930s was characterized by the construction of buildings of generally 12 stories at major intersections, flanked by one and two-story retail structures.

The District was formally designated by the National Park Service on behalf of the Secretary of the Interior in 1985. At the time, there were over 60 contributors and approximately 40 non-contributors which all dated from the 1905-1935 period of significance. Since its listing, the District has seen significant and positive restorations, now having the largest collection of restored historic theaters in use in the nation. The District can count the beneficial reuse of the Broadway and Equitable Buildings, the Hollywood Professional Building, and the Nash Building, and many restorations, spurring the renaissance of Hollywood. But the District has suffered the loss of several contributors, and has seen the addition of overly-large developments such as Hollywood and Highland, the W Hotel and Madame Tussaud's.

The current Millennium Hollywood project fails to significantly address the negative impact created by the mass and height of the proposed development in regards to the existing structures in the vicinity. This will be the largest tower in the area. While creating opportunities to see landmarks such as the Hollywood Sign from areas within the development, the project fails to address the fact that these new view lines will alter views that have been publicly available since the inception of these landmarks.

In the "Related Projects" section of the DEIR, which compares this project with other projects nearby, unapproved, proposed developments are used alongside existing structures, allowing the square footage increase that this project suggests to be seen as more reasonable. However, the structures included on the comparative chart are all less than one-third the size of the proposed Millennium tower. The only project that is as large is the proposed redevelopment of the Paramount Studios Lot. At 1,385,700 sq. ft., the Paramount Lot is a much larger property and does not have any single building of a comparative height as proposed by Millennium.

The addition of the proposed tower will overwhelm contributing properties in the district and the proposed "separation" of new and old construction is simply not an adequate mitigation measure.

Hollywood Heritages appreciates the efforts of the project's developers and will work diligently with them to ensure the preservation and protection of all of Hollywood's historic resources.

Sincerely,

Bryan Cooper

President, Hollywood Heritage, Inc.

As this project continues, we will keep our members informed.

The Millenium Project is a development surrounding the national landmark Capitol Records building and consists of extraordinarily large towers on both sides of Vine Street. Currently, the project is in a hold pattern after it was revealed that an earthquake faultline exists under the project, thereby making it unbuildable.

Hollywood Heritage spent many hours meeting with the developer as it was believed the towers would present a negative affect on the landmark by creating a context which would diminish the building's impact

PART 3.....
"NO" to the dangerous Hollywood Center Project being a streamlined ELDP project.
Tracking # 2018051002

History of the Actions to Protect Historic Cultural Monument (HCM #827) Capitol Records Building, Recording Studios, World Renown Les Paul Invented Echo Chambers and JOBS, When a Project Was Proposed Next To It That Was About 15-20 Stories (Millennium proposed project is 40+ stories)

A PRE-MILLENNIUM, much smaller project (Argent Ventures..never built) next to Capitol Records Building brought up the EQ fault line and potential dangers of building so close to the Historic Cultural Monument, on an active EQ fault line (later confirmed by State Geologists) compromising the HCM historic resource and the world renown valuable Les Paul echo chambers and recording studios. ..

When Capitol Records Building changed hands and Millennium took over, there no longer seemed to be concerns from the music/record industry about jeopardizing the Historic Cultural Monument or the recording studios or the Les Paul invented echo chambers, even though Millennium projects were/are

way larger than the 15-20 story condo building that was proposed for the corner next to Capitol Records Building and was not even as close to it as Millennium proposed 49 story project would be..

Millennium made sure to spread around 'benefits to the community' ($$$$$), opposing law suits were withdrawn one by one, as well as very generous campaign contributions to City Councilmembers and the Mayor of L.A.

A HISTORY OF EFFORTS TO PROTECT AND PRESERVE CAPITOL RECORDS BUILDING FROM ARGENT (SECOND STREET) VENTURES 15-20 STORY CONDO PROJECT.....BEFORE MILLENNIUM TOOK OVER....

http://articles.latimes.com/2013/aug/14/local/la-me-hollywood-fault-20130815

http://la.curbed.com/archives/2008/07/capitol_studios.php
“EMI is resolutely committed to the preservation of its historic Capitol Studios, a facility that is in demand by the global entertainment industry for its unique recording qualities, its irreplaceable, subterranean echo chambers (designed by Les Paul), state-of-the-art operations and size.

However, proposed plans to build a condo development and an underground parking garage by Second Street Ventures, if approved by the Los Angeles City Council at a hearing on July 11th, will significantly and negatively impact the operation of this recording studio..... this poorly-designed project will have an adverse impact on acoustic integrity of the Studios.

We look to Councilmember Garcetti's leadership for working to prevent this project in its current design and to help ensure that the iconic Capitol Studios can continue to contribute jobs and revenues to the Los Angeles community.

Brian Curran started an online campaign.
The online Campaign was: http://www.ipetitions.com/petition/savehollywoodsmusic

Capitol Fears For It's Sonic Signature..L.A. Times
http://articles.latimes.com/2008/jun/18/local/me-capitol18
"Losing this place would be a big deal. There's nothing better than this anywhere in the world," said recording engineer Al Schmitt.

In September 2006, owner EMI announced that it had sold the tower and adjacent properties for $50 million to New York-based developer Argent Ventures.

The studio currently claims that it is threatened by noise from construction of a condominium and underground parking lot by building firm Second Street Ventures that would have heavy equipment working within 18 feet (5.5 m) of its renowned underground echo chambers, which are themselves over 20 feet (6.1 m) below ground level.

A senior record producer in the recording industry, Al Schmitt, says it would be "heartbreaking" if it came to pass that the company could no longer use the echo chambers, which he says are, "the best in the business."

EMI appealed Planning Commission decision and lost

CITY COUNCIL APPROVES 15 STORY CONDO NEAR CAPITOL RECORDS BUILDING

Garcetti throws EMI under the bus....15 story condo bldg. approved by City Council.

http://latimesblogs.latimes.com/lanow/2008/07/skys-the-limit.html

Then Millennium took over ....

.. in respect to Capitol Studios next door and the devastating effect this construction will have...not only will the Capitol building be ridiculously dwarfed in scale, but bulldozer digging in the lot next door to the studios for the condo project at 6230 Yucca in 2008, seriously damaged one of the four infamous echo chambers built by the late-great Les Paul, the same echo chambers that are still one of the reasons this studio is sought after to record in, and not only adds to Hollywood's musical legacy, but boosts the local economy.

Along with Abby Road Studios, Capitol Records Building is the next most iconic recording studio in the history of music and the legends that have graced it's rooms are countless.

In 2008 there was a grassroots effort to halt the digging, led by the Grammy organization and by leading musicians and the Hollywood Heritage.
Their efforts had impact ...

The list of past recording stars from Capitol is vast and it would be a travesty if these one-of-a-kind echo chambers were to be damaged from the impact of the hideous Millennium Project next door.

Brian Curran of Hollywood Heritage started an online campaign.
The online Campaign was: http://www.ipetitions.com/petition/savehollywoodsmusic

Capitol Fears For It's Sonic Signature..L.A. Times
http://articles.latimes.com/2008/jun/18/local/me-capitol18
"Losing this place would be a big deal. There's nothing better than this anywhere in the world," said recording engineer Al Schmitt.

The people rallied to protect the building and the valuable echo chambers in 2008...against a 15 story condo...Once Millennium took over...SILENCE .

Once Millennium took over, the rallying to protect Capitol Records Building, recording studios and echo chambers ended.

In light of the infamous SINKING and TILTING and EVACUATED MILLENNIUM SAN FRANCISCO TOWER, this is another good reason that Millennium's Hollywood Center Project must go through all CEQA/EIR rules and laws and be DENIED a streamline ELDP process.

William A. Miller
Los Angeles, Ca.

PART 4.....
"NO" to a streamlined ELDP process for Millennium's Hollywood Center Project
Tracking # 2018051002

Seismic Safety....State Geologist Confirmed Active EQ Fault Line /Millennium Hollywood Center Project Building Site....
Millennium Sinking/Tilting/Evacuated San Francisco Tower

San Francisco's Big Seismic Gamble

By THOMAS FULLER, ANJALI SINGHVI and JOSH WILLIAMS - New York times
APRIL 17, 2018

Link: https://www.nytimes.com/interactive/2018/04/17/us/san-francisco-earthquake-seismic-gamble.html

With Millennium Tower, San Francisco got a foretaste of what it means to have a structurally compromised skyscraper.

The area around Millennium Tower is considered among the most hazardous for earthquakes...

The US Geological survey rates the ground there - layers of mud and clay- as having a very high risk of acting like quicksand during an earthquake, a process known as liquification."

Millennium Tower has sunk almost a foot and a half and is leaning 14 inches toward neighboring high rises.

The developer and city officials knew of the building's flaws for years, but kept them confidential until 2016, when news leaked to the public.

"*When I tell people what the current building code gives them most people are shocked," Dr. Jones said. "Enough buildings will be so badly damaged that people are going to find it too hard to live in L.A. or San Francisco."*

http://skyscrapercenter.com/building/millennium-tower/1801
GEOTECHNICAL... LANGAN ENGINEERING
The same company did the Millennium Hollywood geotechnical study that contradicted State Geologist active EQ fault line confirmations..

San Francisco's Landmark Tower for the Rich and Famous is Sinking and Tilting
http://www.sfchronicle.com/bayarea/article/SF-s-landmark-tower-for-rich-and-famous-is-8896563.php?t=1ef0887a203aa214ae&cmpid=twitter-premium

P.J. Johnston, spokesman for tower builder Millennium Partners and its principal owner, Sean Jeffries, said a nine-month, independent structural safety review in 2014 "determined the settlement has not significantly affected the seismic performance of the building, and does not represent a safety risk."

Millennium's engineers anchored the building over a thick concrete slab with piles driven roughly 80 feet into dense sand.

“To cut costs, Millennium did not drill piles to bedrock,” or 200 feet down, the transit center authority said in its statement.
Had it done so, the agency said, “the tower would not be tilting today

http://abc7news.com/realestate/luxury-skyscraper-millennium-tower-sinking-in-downtown-sf/1452701/

http://www.foxnews.com/us/2016/08/01/swanky-san-francisco-high-rise-sinking-tilting.html

http://www.techinsider.io/millennium-tower-san-francisco-tilting-sinking-2016-8

http://archpaper.com/2016/08/san-fransisco-millennium-tower-sinking/

http://sf.curbed.com/2016/8/1/12341914/millennium-tower-sinking

Millennium Tower roundup: Soil testing begins, developer insists it was built to code and inspectors may have known about issues in 2009
Now, a separate report given to homeowners at the site says that the building could sink as far as 31 inches eventually.
http://www.bizjournals.com/sanfrancisco/blog/real-estate/2016/09/millennium-tower-sf-titling-scandal-details-emerge.html?ana=e_me_set1

San Francisco board of supervisors millennium hearing -- 9-22-2016
http://www.bizjournals.com/sanfrancisco/blog/real-estate/2016/09/millennium-tower-sf-titling-scandal-details-emerge.html?ana=e_me_set1

Sinking Millennium Tower puts building agency on the spot
http://www.sfgate.com/bayarea/article/Sinking-Millennium-Tower-puts-building-agency-on-9220921.php

http://www.businessinsider.com/why-is-millennium-tower-sinking-2016-9/#san-francisco-supervisor-aaron-peskin-says-yes-in-early-september-peskin-raised-suspicion-that-city-officials-knew-the-building-might-sink-before-anyone-moved-in-11

video of hearing:
http://sanfrancisco.granicus.com/MediaPlayer.php?view_id=11&clip_id=26197

A 58-story skyscraper in San Francisco is sinking and people are fighting over whose fault it is
http://www.businessinsider.com/why-is-millennium-tower-sinking-2016-9/#millennium-tower-sits-on-the-edge-of-san-franciscos-eastern-shoreline-1

Everything we know about the Millennium Tower scandal - Business Insider
http://www.businessinsider.com/why-is-millennium-tower-sinking-2016-9/#theres-also-confusion-about-why-the-buildings-developers-were-allowed-to-anchor-the-building-80-feet-into-packed-sand-rather-than-200-feet-down-to-bedrock-12

More reasons to DENY Millennium a streamline ELDP process for the dangerous

Millennium Hollywood Center Project, proposed for a building site that state geologist Dr. John Parrish confirmed is on an active EQ fault line, and warned is too dangerous to build on.

MASSIVE HOLLYWOOD PROJECT SITS ATOP QUAKE FAULT, CALIFORNIA SAYS
http://www.latimes.com/local/lanow/la-me-ln-hollywood-fault-map-20141106-story.html

“Our conclusion from the data is that there is an active fault, and it does run right along the course that’s right along the map,” state geologist John Parrish said.

NEW STATE FAULT MAPS SHOW HIGHER EARTHQUAKE RISKS IN HOLLYWOOD
http://articles.latimes.com/2014/jan/08/local/la-me-0109-hollywood-fault-20140109

The state's new map shows that three prominent Hollywood developments — the proposed Millennium Hollywood skyscraper project, The Blvd6200 development and a planned apartment complex on Yucca Street — are within the roughly 500-foot fault zone.

State geologist John Parrish said the state's fault line goes underneath both Millennium and Blvd6200.
"We feel very confident about where we drew that line, within a 50-foot accuracy back and forth..we're very confident it's there," Parrish told reporters at a downtown Los Angeles news conference.

"Surface rupture is very dangerous. In fact, it's calamitous to structures that are built across the surface trace of an active fault."

Los Angeles officials did not order trenching for any of the three projects before the City Council approved those projects.

William A. Miller
Los Angeles, Ca.

To whom it may concern in the OPR,

It has come to my attention that a development in my neighborhood, the Millenium Hollywood Center, is seeking CEQA exemption through Environmental Leadership Development Project designation. These designations were created to encourage building innovations in conservation and energy use. To propel excellence in development not to evade regulations.

This development lies ON the active Hollywood fault line. The Alquist-Priolo Act prohibits buildings for human occupancy on active fault lines. Please do not endanger Angelenos lives by disregarding the law.

Sincerely,
Yasmine Ross

Governor's Office of Planning & Research
Re: HOLLYWOOD CENTER PROJECT
Tracking Number: 2018051002
The Hollywood Center Project

To Whom it May Concern:

I have lived in the Hollywood area about 50 years. Change is inevitable,but I am concerned about this project which will bring around 5000+ people to just our neighborhood, and at least 4000 cars.

There is no need for me to repeat what the Hollywood United Neighborhood Council and Silverstein Law Firm have said, among the others. Instead I wish to only mention two points, NIMBYism and city planning.

Developers often attack opposition to their projects as NIMBY, rather than admit that we, the local people, experience the problems caused by both construction in our area and the heavy increase in traffic and peole once the job is over. On Argyle alone, we have been inconvenienced by construction for around 5+ years. Our concerns should not be automatically dismissed as NIMBY.

Without increasing infrastructure, traffic nears gridlock, even now, more people means more problems, both police and medical (Fire Department) calls. I have been taking 2-minute showers for the city to move in more people?

My other concern regards the Planning Council. Are there limits to the number of people who can live and work in our area? It seems not, based on actions of LA City. The problem is that even if the city doesn't impose limits, life does, with corresponding reduction in quality of life.

A lot of building has been going on for years in Hollywood. The city is already crowded. The developers leave town when their job is over with their millions. We as neighbors in the area of the two high rises call for serious planning, not more jobs as a password for uncontrolled growth.

I won't object if the buildings are cut in half in size, otherwise, it is wrong to force these high rises on us.

Yours respectfully,
Robert Adjemian

Dear Governor Brown and/or members of the Governor's Office of Planning & Research,

I am writing about the Hollywood Center Project, which I know as the Millenium project.

As a regular person, who does not make my living in urban planning, architecture, or lobbying, I did not have enough time to do this topic justice. I haven't been able to run down very much evidence. It is my hope that the fine community organizations here such as the Hollywood United Neighborhood Council, and Fix the City, have been more successful.

Indeed, the inability of normal people to allocate time to things like this is one of the reasons that you should not be giving out CEQA streamlining privileges - to *anyone*. I am not even particularly against the Millenium project getting such treatment - although I *am* against it. You should know better. As if anyone ever *needed* a stadium, or an arena.

The only things I can add to this that might be helpful are my personal experiences. I moved to Hollywood in 2004, and in the fullness of time, I ended up serving 4 years on my neighborhood council. (Wonderful people, by the way. What Sen. De Leon said was unforgivable for someone who purports to be from LA. Then again, I'm not sure he really does, much.)

Politics in LA are dysfunctional. These CEQA privileges may sound reasonable if you live in a functional place - but we don't. The City of LA gets sued a lot because its officials ignore their own attorneys. Making it harder to sue here is a sin.

I feel confident that you will not listen - why should you? The city council sure didn't - but I persist. Most of the neighborhood councils in this area opposed the first project, but this did not matter. The project was in the area of my neighborhood council, and the councilmember would not even meet with us. (We were redistricted out of his district. Not by accident, I shouldn't think.)

I'm sure you are familiar with the term "soft corruption." Well, it is apt. (I hope I don't sound too harsh - I don't think the Councilmembers are technically "corrupt." At least I hope not. But getting into all *that* would take too long.)

Then, there's the earthquake fault. Millenium says it is not under their project. I hope they are right. As I will probably never step foot in it, that isn't really an issue for me.

What *does* bother me is that the person who realized that the City had failed to do its duty in finding the fault was a *regular person*. Not someone in Building & Safety. Not one of our fine state geologists, who apparently had assumed for decades that LA was on the job. I don't recall his name, but he was just some guy who lives in the Hills. I have a link but it won't have his name either - just some background. (http://articles.latimes.com/2013/aug/02/local/la-me-hollywood-fault-millennium-20130802 If I can, I will try to scare up a better link, but it will be after your deadline.)

Does this sound to you like a place in which projects should move *faster*???

Then there's TOD. I have a working theory that all you insider types already know that it's complete hogwash. Hollywood has been hammered by development in the last few years, and the traffic gets worse and worse. There is one street into my neighborhood and it goes through an intersection with a 101 on-ramp. I live on a hill, there is no public transit, there isn't going to be any, and I don't believe in the gig economy (I respect working people - well since I *am* one, after all). I'm not rich enough to take cabs. *I drive*. So shoot me already.

Here is a link. I know you won't care, and that the suffering of the thousands upon thousands of ordinary people like me - people who are so normal, they don't have *time* to write anonymous screeds to public officials that they know are futile before they strike the first key - means nothing to you in your grand scheme of reducing GHGs by making commuting so miserable that people move away from California. Oops, I mean, so miserable they start *taking transit*. In *Los Angeles*. It's not *as* bad as Chairman Mao ... but I bet somewhere, he's getting a chuckle out of it. http://www.laweekly.com/news/hollywoods-urban-cleansing-2612554

Again, I realize this sounds like a First World Problem, and from your lofty post saving the planet it all sounds so whiny. The thing is, I don't actually think your plans are that green. I don't think we can fit all 9 billion people in one city, and if we did, it would be so miserable we'd all kill each other. (Wait - is *that* the plan? You might have something there.) You also run the risk of a backlash. Not much of one around *here* - the voters here are inert. But statewide, you could run into some issues.

I guess I just don't want you to think you're getting away with anything. That is, you *are* getting away with it ... but I know what you're up to. You're not fooling me. Densification isn't going to decarbonize transit, you are just rearranging people - to the *enormous profit* of people who already have a lot. And, you try to make people like me feel guilty to boot. Nice try, but no cigar for you.

As for Millenium, they actually aren't that bad. Very nice people, very easy to work with (they came to my committee a lot). If we could've made a deal with *them*, and canceled all the hideous cr*p that has been thrown up in the intervening years, we may have been better off. But in LA, that kind of long-term thinking doesn't happen. Their project is *egregiously out of scale*, mind you, and the traffic was too bad *then*, and it is *worse* now. (Ask Caltrans! Ha. Ha.)(Did you get that?) But, at least they would have built something that didn't hurt my eyes.

This won't mean anything either, but even with all this, you're still my favorite pol. I feel like you b.s. less than the others. I wish we didn't have term limits (except for on planning).

Well, thanks for reading this, if anyone did. I almost feel a little better.

Sincerely,
Anonymous

P.O. Box 27404
Los Angeles, CA 90027
www.hillsidefederation.org

THE FEDERATION
OF HILLSIDE AND CANYON ASSOCIATIONS, INC.

PRESIDENT
Charley Mims
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Beachwood Canyon Neighborhood
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Brentwood Hills Homeowners
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Cahuenga Pass Property Owners
Canyon Back Alliance
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Doheny-Sunset Plaza NA
Franklin Ave./Hollywood Bl. West
Franklin Hills Residents Assn.
Highlands Owners Assn.
Hollywood Dell Civic Assn.
Hollywood Heights Assn.
Hollywoodland Homeowners
Holmby Hills Homeowners Assn.
Kagel Canyon Civic Assn.
Lake Hollywood HOA
Laurel Canyon Assn.
Los Feliz Improvement Assn.
Mt. Olympus Property Owners
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Nichols Canyon Assn.
N. Beverly Dr./Franklin Canyon
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Governor's Office of Planning and Research
State Clearing House
Scott Morgan, Director
1400 Tenth Street, Room 117
Sacramento, CA 95814

June 28, 2018

Re: Objections to ELDP Application by MCAF Vine, LLC
State Clearing House **Tracking No. 2018051002**; Hollywood Center Project

Dear Director Morgan,

The Federation of Hillside and Canyon Associations, Inc., founded in 1952 and representing 42 resident and homeowner associations with 250,000 constituents spanning the Santa Monica Mountains, has serious concerns regarding the Environmental Leadership Development Project (ELDP) application for the Hollywood Center project.

The Federation opposed the 2013 version of this same project because it was out-of-scale and character to the Hollywood Community Plan and would cause excessive cumulative negative impacts on the health, safety, traffic and infrastructure of Hollywood and the neighboring hillside communities. Even Caltrans recognized that it would have a devastating impact on the traffic on and around the Hollywood Freeway.

Later it was discovered that the proposed project was located on top of earthquake fault lines as officially mapped in the State's Alquist-Priolo Earthquake Fault Zone Map.

The newly proposed Hollywood Center Project suffers from the same deficiencies as the previous version. The currently proposed skyscrapers are even larger than before and will have even greater cumulative impacts. The developer, although perfectly aware of the Alquist-Priolo Earthquake Fault Zone Map, has ignored the California Geological Survey requirement to place construction at least 50 feet away from a fault line and placed the tower directly on top of it.

The Hollywood Center Project must undergo a thorough environmental review to insure that it does not imperil public safety. ELDP is supposed to demonstrate "environmental leadership;" this project does not. The Federation urges you to deny MCAF Vine, LLC's ELDP application.

Thank you for your consideration of our request.

Sincerely,

Charley Mims
Charley Mims

Governor's Office of Planning & Research
Re: HOLLYWOOD CENTER PROJECT
Tracking Number: 2018051002

I am a long-term resident of Hollywood and request that you **reject of the Application for Environmental Leadership Development Project protection to the Hollywood Center Project** based on the following facts and observations:

1. The original Millennium Project, the precursor project for the HCP, was filed by Millennium Hollywood LLC in 2013. The project did not go forward due to court order in 2015 and due, in part, to the question as to whether or not the Hollywood earthquake fault line ran under the project or was next to it in addition to CalTrans concerns for the impact on the adjacent freeway entrances. The HCP is simply the old plan with some minor changes with the major issues unresolved.

2. There are concerns about the developer's methods that they will bring to this project as this developer is also responsible for the Millennium Tower in San Francisco that is now sinking into the ground because of their decision that it was unnecessary for the foundations to go down to bedrock.

3. Both the "old" Millennium Hollywood project, the San Francisco Millennium project, and the Hollywood Center Project involve extremely tall buildings and dense development and requires (or required) substantial and unusual variances. As a result, all of the above demand a greater scrutiny by the public. The fact that the developer's earlier version of the HCP as well as the current project is to build next to an earthquake fault and they made a decision to build the San Francisco Millennium Tower on inadequate footing makes it clear that limiting the time for any lawsuit would be detrimental to the public interest. The public safety concerns are the potential problems of an earthquake and any damage that might occur to the HCP as well as the extensive problematic issues and potential public area problems that will result from the extreme size of the development if not built with adequate safeguards and oversight.

4. Hollywood is geographically at the center of Los Angeles. This project is of such a massive scale that any major failure on its part could negatively impact the ability of the city to transact business or for safety vehicles to get to the areas of need. This is especially true if the Hollywood Freeway is compromised due to the lack of complete and transparent planning and construction of the HCP.

4. The extreme size of the project and complexity of the major issues of public safety and potential infrastructure failure due to stress that this project will cause makes it virtually impossible for any of the potential major problems to be able to be litigated in a 275 day period under the Environmental Leadership Development Project designation. It will, in effect, cut off all public legal remedies for the public. To deny the public this right of remedy in light of the extraordinary safety issues that are raised and by the developer's prior construction record would be a major disservice to the public. Relieving the developer of the potential of any lawsuits being filed could encourage them to make what would be expedient and perhaps cost saving construction decisions that could cause major safety and environmental problems that would affect a significantly populated geographical area. It is critical that all manner and methods of review and redress be available to the public to ensure that this project is built in a safe and responsible manner.

Thank you for your consideration.
Sincerely yours,

Jim Van Dusen
Los Angeles, CA
wjvd@roadrunner.com

From:	Luminita R
To:	OPR California Jobs
Subject:	Opposition of certification of the Hollywood Center Project to build twin towers on the Hollywood earthquake fault
Date:	Friday, June 1, 2018 2:42:18 PM

Director Ken Alex

Office of Planning and Research

Office of Governor Edmund G. Brown, Jr.

1400 10th Street

Sacramento, California 95814

Re: Opposition to Certification of the Hollywood Center Project

(aka Millennium), Application 2018051002 as an Environmental Leadership

Development Project.

Dear Mr. Alex:

Regarding the MCAF Vine LLC's (Millennium Partners) application to the Governor to certify the Hollywood Center Project – known as the Millennium – (Pub. Res. Code §2621 et seq.,) I urge you to reject certification of this environmentally unsustainable and dangerous plan to build two skyscrapers atop and next to the Hollywood Earthquake fault, which has been formally identified and located by the California State Geologist.

The Project's proponent, Millennium Partners, is the developer who built the sinking Millennium Tower in San Francisco. This tower is now notorious around the world for its faulty construction planning, which led to the sinking and leaning of the residential skyscraper -- a rare event globally, or in modern times.

You should reject this application because:

It fails on the net greenhouse gas test:

A project seeking Environmental Leadership Development Project (ELDP) can't cause a net increase in GHG, and the applicant must include every feasible measure to reduce greenhouse gas emissions, such

as requirements for Vehicle Mile Traveled. I urge California Air Resources Board (CARB) to recognize that every feasible GHG reduction has NOT been included to justify a purchase by the applicant of carbon credits. See Public Resources Code § 21183(TK).

It fails under requirements of AB 900:

Under AB 900, this request must be rejected in whole. The City of L.A. has proposed zone and height district changes for this Project, where carefully reasoned height restrictions apply to it and all other land in the area. A city's granting of zone and height changes IS a public subsidy that is widely recognized as helping a developer's financial bottom line.

It fails to protect human life as required by state law:

The applicant is not being honest in disclosing the risk of an earthquake. In violation of the Alquist-Priolo Earthquake Fault Zoning Act, these skyscrapers would place occupants on property identified by the State Geologist as underlaid by an active fault. L.A. Superior Court said, in its 2015 ruling to set aside approval of the applicant's previous version of Hollywood Center project (the Millennium), that the Alquist-Priolo Earthquake Fault Zoning Act **prohibits construction** of buildings for human occupancy that lay across traces of an active fault. The State Geologist, not the City of LA, is recognized globally in these matters. The OPR should not recommend, and the Governor should not certify as an Environmental Leadership project, a project the State's Geologist has officially found unsafe and non-compliant with Alquist-Priolo. **(SEE MAP BELOW)**

It fails on the real-world transportation efficiency test:

The project must create at least 15% more transportation efficiency than comparable projects. Hera again, MCAF has completely failed. Its AB 900 application does NOT compare its proposed skyscrapers to real-life high-rises and contains ZERO analysis demonstrating it meets the 15% standard. It sets up a phony comparison to an imaginary "Comparable Residential Project." No. MCAF must present a verifiable baseline using actual residential and hotel projects of similar size and locale. The Governor's certification is required to compare this application to real world projects.

It fails on the local planning policies test:

The applicant wrongly claims the Project is consistent with City of Los Angeles planning goals, policies, and objectives. Proposed projects must be consistent with **existing zoning and general plan designations** before being certified as ELDP projects: it would need deviations including "a zone change to C2-SN, a Height District Change to remove the D Limitation." That's not consistent!

Sincerely,

Luminita Roman

Housing chair for the HHWNC

1714 N. McCadden Place # 1103
Los Angeles, CA 90028
(323) 871-2672

California Governor Jerry Brown
State Capitol
1st Fl.
Sacramento, CA 95814

VIA EMAIL:
governor@governor.ca.gov

CC:
California.jobs@opr.ca.gov
Scott.morgan@opr.ca.gov

Objections to ELDP Application by MCAF Vine, LLC State Clearing House Tracking No. 2018051002; Hollywood Center Project

Dear Governor Brown:

As a long-time resident of Hollywood. I am writing to voice my strong objection to the Hollywood Center Project and ask that you consider the significant omissions and misstatements in the application for approval as an Environmental Leadership Development Project.

There are several very concerning omissions in the developer's application. Most notable and concerning is the fact that the proposed project is sited astride the Hollywood Fault Zone and the 7.0 magnitude active Hollywood Earthquake Fault, known officially as Alquist-Priolo mapped by the State of California. To say the very least any construction of an occupied building on or directly adjacent to this fault is unsafe and likely will not end well.

In 2015, a judge in Los Angeles rejected an earlier version of this project, then called the Millennium Hollywood. That project faced serious opposition from community groups including all 7 Hollywoodf Neighborhood Councils. Additionally, the California Geological Survey and Caltrans both questioned the project's impacts on public health, safety and welfare. The other concern was the harmful impacts the project would have on the101 Freeway's mainline and ramps.

The current proposal would place an even larger skyscraper on the Alquist-Priol Earthquake fault, and cause immense harmful traffic.

Also, I would also like to remind you that the developer, Millennium Partners, is the very same developer responsible for the faulty construction of a residential

tower in San Francisco that has gained notoriety because it is literally sinking and leaning (as confirmed by satilite photos and analysis). This disaster was widely exposed by the New York Times, The Wall Street Journal, and CBS TV's "60 Minutes." That alone should cause significant pause in your review of the ELDP application. This developer has a track record in California that should engender serious skepticism.

But, it is the physical shortcomings presented by this latest project – which would potentially endanger the lives of thousands who would live, work in and visit the site daily. So as a long-term resident of Hollywood I am pleading with you, for the public good and your legacy, to reject the ELDP application for the Hollywood Center project.

Finally, if the developer actually moves forward with the project following its prior legal defeat, it should be required to do so with no special privileges. Just as Millennium in San Francisco grossly misrepresented its building safety and geological work, it has repeatedly made false and misleading statements about the alleged lack of an active earthquake fault through the Hollywood site.

I respectfully ask that you deny the ELPD for the Hollywood Center Project.

Sincerely,

BillZide
Former Chair of Hollywood Studio District Neighborhood Council

California Governor Jerry Brown
State Capitol
1st Fl.
Sacramento, CA 95814

Re: Objections to ELDP Application by MCAF Vine, LLC State Clearing House Tracking No. 2018051002; Hollywood Center Project

Dear Governor Brown:

I am writing to voice my strong objection to the Hollywood Center Project and ask that you consider the significant omissions and misstatements in the application for approval as an Environmental Leadership Development Project.

There are several very concerning omissions in the developer's application. Most pronounced is the fact that the proposed project is sited astride the Hollywood Fault Zone and the 7.0 magnitude active Hollywood Earthquake Fault, as officially Alquist-Priolo mapped by the State of California. Any construction of an occupied building across this fault is unsafe folly.

In 2015, a judge in Los Angeles rejected an earlier version of this project, called the Millennium Hollywood. That project faced serious concerns from the California Geological Survey and Caltrans. Both questioned the project's impacts on public health, safety and welfare. The other concern was the harmful impacts the project would have on the 101 Freeway's mainline and ramps.

The current proposal would place an even larger skyscraper on the Alquist-Priol Earthquake fault, and cause immense harmful traffic.

I would also like to remind you that the developer, Millennium Partners, is the same developer responsible for the faulty construction of a residential tower in San Francisco that has gained notoriety because it is sinking and leaning. This disaster was widely exposed by the New York Times, The Wall Street Journal, and CBS TV's "60 Minutes." That alone should cause significant pause in your review of the ELDP application.

But it is the physical dangers presented by this latest project – which would potentially endanger the lives of thousands who would live, work in and visit the site daily. In this regard, I am pleading with you, for the public good and your legacy, to reject the ELDP application for the Hollywood Center project.

Finally, if the developer actually moves forward with the project following its prior legal defeat, it should be required to do so with no special privileges. Just as Millennium in San Francisco grossly misrepresented its building safety and geological work, it has repeatedly made false and misleading statements about the alleged lack of an active earthquake fault through the Hollywood site.

I respectfully ask that you deny the ELPD for the Hollywood Center Project.

Sincerely,

Elizabeth Nguyen

Dear Governor Brown:

I am writing to voice my strong objection to the Hollywood Center Project and ask that you consider the significant omissions and misstatements in the application for approval as an Environmental Leadership Development Project.

There are several very concerning omissions in the developer's application. Most pronounced is the fact that the proposed project is sited astride the Hollywood Fault Zone and the 7.0 magnitude active Hollywood Earthquake Fault, as officially Alquist-Priolo mapped by the State of California. Any construction of an occupied building across this fault is unsafe folly.

In 2015, a judge in Los Angeles rejected an earlier version of this project, called the Millennium Hollywood. That project faced serious concerns from the California Geological Survey and Caltrans. Both questioned the project's impacts on public health, safety and welfare. The other concern was the harmful impacts the project would have on the 101 Freeway's mainline and ramps.

The current proposal would place an even larger skyscraper on the Alquist-Priol Earthquake fault, and cause immense harmful traffic.

I would also like to remind you that the developer, Millennium Partners, is the same developer responsible for the faulty construction of a residential tower in San Francisco that has gained notoriety because it is sinking and leaning. This disaster was widely exposed by the New York Times, The Wall Street Journal, and CBS TV's "60 Minutes." That alone should cause significant pause in your review of the ELDP application.

But it is the physical dangers presented by this latest project – which would potentially endanger the lives of thousands who would live, work in and visit the site daily. In this regard, I am pleading with you, for the public good and your legacy, to reject the ELDP application for the Hollywood Center project.

Finally, if the developer actually moves forward with the project following its prior legal defeat, it should be required to do so with no special privileges. Just as Millennium in San Francisco grossly misrepresented its building safety and geological work, it has repeatedly made false and misleading statements about the alleged lack of an active earthquake fault through the Hollywood site.

I respectfully ask that you deny the ELPD for the Hollywood Center Project.

Sincerely,

Justine Schmidt

Subject line: Oppose ELDP Application by MCAF Vine, LLCTracking No. 2018051002

Dear Governor Brown:

I am a long-time L.A. resident. I am writing to voice my strong objection to the Hollywood Center Project and ask that you consider the significant omissions and misstatements in the application for approval as an Environmental Leadership Development Project.

There are several very concerning omissions in the developer's application. Most pronounced is the fact that the proposed project is sited astride the Hollywood Fault Zone and the 7.0 magnitude active Hollywood Earthquake Fault, as officially Alquist-Priolo mapped by the State of California. Any construction of an occupied building across this fault is unsafe folly.

In 2015, a judge in Los Angeles rejected an earlier version of this project, called the Millennium Hollywood. That project faced serious concerns from the California Geological Survey and Caltrans. Both questioned the project's impacts on public health, safety and welfare. The other concern was the harmful impacts the project would have on the101 Freeway's mainline and ramps.

The current proposal would place an even larger skyscraper on the Alquist-Priol Earthquake fault, and cause immense harmful traffic.

I would also like to remind you that the developer, Millennium Partners, is the same developer responsible for the faulty construction of a residential tower in San Francisco that has gained notoriety because it is sinking and leaning. This disaster was widely exposed by the New York Times, The Wall Street Journal, and CBS TV's "60 Minutes." That alone should cause significant pause in your review of the ELDP application.

But it is the physical dangers presented by this latest project – which would potentially endanger the lives of thousands who would live, work in and visit the site daily – that I am most concerned about. In this regard, I am pleading with you, for the public good and your legacy, to reject the ELDP application for the Hollywood Center project.

Finally, if the developer actually moves forward with the project following its prior legal defeat, it should be required to do so with no special privileges. Just as Millennium in San Francisco grossly misrepresented its building safety and geological work, it has repeatedly made false and misleading statements about the alleged lack of an active earthquake fault through the Hollywood site.

I respectfully ask that you deny the ELPD for the Hollywood Center Project.

Sincerely,

Suellen Mayfield

Jennifer

June 1, 2018

Governor's Office of Planning and Research
State Clearing House
Scott Morgan, Director
1400 Tenth Street, Room 117
Sacramento, CA 95814

Re: **Objections to ELDP Application by MCAF Vine, LLC**
State Clearing House Tracking No. 2018051002; Hollywood Center Project

Dear Mr. Morgan:

I first moved to Hollywood in 2004, served on the Board of the Hollywood Studio District Neighborhood Council from 2014 to 2016, and served as Vice Chair of the Neighborhood Council at the approximate time that the community's successful lawsuit against the Millennium Hollywood project was in progress.

The ELDP application by Millennium (MCAF Vine, LLC) is difficult to respond to because much of its fundamental premise is flat wrong.

The application repeatedly contends that L.A. is growing, and Hollywood, with its multiple transit connections and urban configuration, is one of the city's most well-suited areas to absorb growth. The application states that there is an increasing population in Los Angeles, and an abundance of jobs but a lack of housing in Hollywood. Sounds reasonable and it's an argument that's been trumpeted for years by business proponents and development interests. Yet the reality is that such sophistry has no basis in fact, particularly in Hollywood.

The truth is that L.A. is not significantly growing, particularly in Hollywood, where the population has in fact experienced a steep and accelerating decline for the past two decades. According to official U.S. Census figures, the Hollywood Plan area declined in population by 3,088 persons from 1990 to 2000, and further declined by 12,596 people from 2000 to 2010. These measured decreases occurred while SCAG was erroneously estimating that the Hollywood Plan area was experiencing an increase of 25,000 people. Ironically, some of the largest population declines in Hollywood were in

census tracts adjacent to Metro subway stops. Similar significant population reductions were recorded in the census tracts radiating out from the Red Line stops, showing a consistent exodus of people from Hollywood. L.A.'s City Planning Department acknowledged this trend in its environmental analysis for the 2012 updated Hollywood Community Plan, eliminating all references in the Final EIR to population growth as a basis for approving more development in the Hollywood area. The facts related to Metro ridership also confirm these numbers: public transit use in Los Angeles County has dramatically declined since 1985 despite increased fixed rail availability.

So why are people leaving Hollywood, and why are those who remain so opposed to developments like Millennium's? It's because the City's plan for future growth sidesteps key realities related to infrastructure capacity and health and safety concerns. Many of the areas proposed for the greatest increases in residential density border the 101 Freeway, ignoring the wealth of scientific data showing that densification near freeways is intrinsically dangerous to the health and safety of both children and adults because of air quality/health risk impacts. And many of these areas are also within reporting districts with the highest rates of violent crimes, traffic congestion, and a shocking deficiency of parks and open space. No tangible measures have been suggested by the City to fund the infrastructure improvements necessary to mitigate further densification, particularly the addition of tens of thousands of residents to Hollywood's most vulnerable neighborhoods, or to even alleviate the underlying conditions that seriously impair the quality of life currently experienced by existing residents.

The application keeps thumping its theme that Hollywood needs more housing, and that "the Project would reduce the housing shortage that currently exists in the City." (Page 34.) But the L.A. Chamber of Commerce in its annual State of L.A. report identified Council District 13, where the project would be, as having the highest residential vacancy rate in Los Angeles. Although the Chamber report didn't specify the areas of greatest vacancy in CD13, much of that has to be in Hollywood simply due to the spate of construction in Hollywood versus lack of land availability in other areas like Silver Lake and Echo Park, including greater zoning restrictions for those communities. Conversely, Hollywood has the second highest homeless population in Los Angeles (more than double Venice). Increased luxury housing production therefore does not counter an expanding homeless population.

The two proposed project sites are limited through "D" development conditions to floor area ratios ("FAR") of 3:1 and 2:1. The applicant is requesting an 8:1 FAR while claiming that the actual project will be contained at a 6.975:1 FAR. The project is also requesting FAR ratio averaging approval as a unified development under LAMC Section 12.24.W.19. This code section has two caveats: 1) the project can be unified if "separated only by a street or alley" when and only if "the development as viewed from adjoining streets appears to be a consolidated whole." Vine St. is acknowledged in the application as a 100-foot-wide thoroughfare, not a collector street or local street. I

assume it's a local highway. The Project, therefore, cannot be viewed as a "consolidated whole" any more than a project divided by the 101 Freeway. Second, under Section 12.24.W.19(a), "the floor area ratio for the unified development, when calculated as a whole, may not exceed the maximum permitted floor area ratio for the height district(s) in which the unified development is located." Yet that illegal exceedance is what the developer is attempting to do with its FAR request.

The application lists other housing developments on page 17. These include the 1,100 units for the Blvd. 6200 project (now called East Towne to the north and 6200 to the south); 550 units for the Vine apartments; 114 units for the 6226 Yucca development, among others. There are also several refurbished buildings recently converted to housing next to the site, such as the Knickerbocker Hotel, the Broadway building, and the Hollywood/Vine building. In each of those projects, which have produced over 5,000 residential units since 2005, the maximum height has been 150 feet. In the case of Blvd. 6200, the height ranges from 55 feet to 85 feet. Yet the application keeps stating that the project is consistent with development patterns in the Vine/Yucca area ("there is no detriment to the general welfare of the City, the surrounding community or the future residents of the Property because the Project's density and scope were designed and are appropriate for the Property and the surrounding properties" (Page 37), and that its 1,005 residential units provide "much needed housing."

This is a cynical statement, as the 133 Senior "affordable units" being proposed come with a catch on page 21 that the applicant seeks "a development modification to allow a greater number of smaller affordable units with less bedrooms to accommodate Senior Affordable Housing Units in lieu of providing the requisite number of Restricted Affordable Units." The language implies that the affordable units will be all singles, and potentially micro units, while the law requires that units set aside for restricted affordable use be the same square footage as marketplace units (to allow for low-income families). Rents are based on habitable rooms – a single that is 400 square feet in size can be rented at the same rate as a single 300 square feet in size. The request implies that the rent per square foot would be higher than standard affordable units, and therefore closer to market rate, while reaping the incentives that come under State law for rewarding "affordable" units. At page 44, the application states "the Project would provide a mix of housing unit types, from one-bedroom units to three bedrooms, and would accommodate demographic shifts." Apparently not for poor or elderly people.

The application states at page 63 "the nearest single-family residential neighborhood is north of the Property across the 101 Freeway. Therefore, no single-family neighborhood would be affected by the new development." This is incorrect. One block east of the project site is an established neighborhood between Argyle and Gower St. that is primarily single-family historic homes.

At page 64, the application states "Hollywood is a job center with existing large office buildings and motion picture production facilities." The only remaining major studio headquarters in Hollywood is Paramount Studios at Melrose Ave. and Gower St. There are no longer any major television stations in Hollywood. The main employer in Hollywood (and Los Angeles) is tourism, which is L.A.'s number one industry.

At page 68, the application says that there are 12 alcohol licenses sought for on-site consumption, but then says in the next paragraph that only 4 licenses are sought. The applicant further seeks licenses for off-site consumption. The area is saturated with alcohol. In 2015, then CD13 Planning Director Marie Rumsey publicly stated that in Hollywood "There is no need for an additional convenience market to dispense alcohol." Her remarks came in response to a request for a permit to sell a full line of alcohol at a 7/11 located at the intersection of Hollywood Blvd. and Gower St., two blocks from the site. The 7/11 had been in continuous operation for 25 years.

In contrast, the application for a liquor store not only doesn't have an operator, its construction is years away. There has been no LAPD input whatsoever on this request.

A similar request was for the Palladium project. It is in a census tract where 5 alcohol licenses are permitted but 33 already exist. It is in a crime reporting district that is not only 547% higher than the citywide average but has seen crime rates nearly double between 2010 and 2014, when almost every other reporting district had a decline in crime.

Across Sunset Blvd. from Palladium, the census tract is permitted to have 3 alcohol licenses, yet 15 already exist.

Across Vine Street from Palladium the census tract is permitted to have 5 alcohol licenses, but 59 already exist.

The census tract at Hollywood and Vine is permitted to have 3 alcohol licenses, but 24 already exist.

LAPD Hollywood Division had 314 officers to cover an area of 17.2 square miles. The National Association of City Managers and Police Dept. standard is 4 sworn officers per 1,000 residents, which means that just the Hollywood population of 198,000 citizens requires 792 officers, or 478 more officers than the entire division has, and which doesn't even factor in the ten million tourists who visit Hollywood every year.

Alcohol is the third leading cause of preventable death in the U.S. and causes 2,500 deaths in L.A. County each year. As Marie Rumsey said, Hollywood doesn't need another convenience market to dispense alcohol.

The project seeks reduced parking per AB744. Although AB744 addresses parking stall reductions for projects near a major transit stop that include affordable units, the state law also allows the city to show with an area-wide study that there is a need for a higher parking ratio. The city's failure to make such data available for analysis does not lessen the parking impacts associated with the Project, which proposes a significant parking reduction in a known parking congested district.

The notion that an agency "should not be allowed to hide behind its own failure to gather relevant data" (Sundstrom v. County of Mendocino (1988) 202 Cal.App.3d 296, 311) applies fully here. The Millennium developer's ELDP application is misleading, incomplete, and in many instances, demonstrably false. The application for ELDP status should be denied.

Sincerely,

Jennifer

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 13

THE SILVERSTEIN LAW FIRM
A Professional Corporation

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April 17, 2020

VIA EMAIL mindy.nguyen@lacity.org

Mindy Nguyen
City of Los Angeles, Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012

Re: Objection to 45-Day Comment Period for Hollywood Center Project Draft Environmental Impact Report ("DEIR"); Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen:

This firm and the undersigned represent stopthemillenniumhollywood.com ("STMH"), a community group that actively participated in, and litigated against, the prior iteration of the newly-named "Hollywood Center" project. STMH and its supporters have an interest in actively and meaningfully participating in the current DEIR comment process, but cannot do so in the constrained, 45-day comment period imposed by the City.

We object to the City providing only the minimum allowed comment period during the unprecedented economic, social and public health upheaval resulting from the COVID-19 pandemic. The pandemic has resulted in City and State emergency declarations and stay-at-home orders that prohibit members of the public from conducting travel to visit the Department of City Planning offices for in-person review of documents. Members of the public who rely on in-person document review risk being silenced altogether, as public libraries have closed and residents are legally prohibited from non-essential travel to use a friend or neighbor's computer and internet. Greater time is essential for the public to safely and lawfully access the DEIR and to be able to formulate comments on it.

The bare minimum 45-day comment period further prejudices STMH and the public by preventing other governmental agencies from having adequate time to fairly review and comment on the DEIR. At least two state agencies, Caltrans and the California Geological Survey, were previously involved in and actively commented on

the prior iteration of the proposed project. There is every reason to expect they will be concerned about the public safety impacts posed by the project this time. However, they are hobbled by limited staffing and access to their offices and materials. For example, Caltrans District 7's entire offices are closed and its personnel scattered. Indeed, I assume that you yourself, as well as Planning Department officials copied on this letter, are not physically in your offices in any normal sense.

It cannot be possible that Mayor Garcetti, Councilman O'Farrell, and City Planning believe the minimum 45 days for the public to comment is appropriate under these trying circumstances.

The commencement of the running of the DEIR comment period, which period should be at least 90 days, should be tolled to a date after the lifting of local and state stay-at-home orders. At a minimum, it should be extended to 120 days from yesterday.

Given the thousands of pages of technical documents just released, and the impacts of the crisis now raging, anything less will prejudice the public and governmental agencies whose duties are to protect the public health, safety and welfare.

Please include this letter in the administrative record for this matter, and please promptly reply with a public announcement tolling or extending the comment period. Thank you.

Very truly yours,

/s/ Robert P. Silverstein
ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
cc: Mayor Eric Garcetti (mayor.garcetti@lacity.org)
Councilman Mitch O'Farrell (councilmember.ofarrell@lacity.org)
Vince Bertoni, Dir. Of City Planning (vince.bertoni@lacity.org)
Kevin Keller, Exec. Officer of City Planning (kevin.keller@lacity.org)

From: Robert Silverstein
To: Mindy Nguyen
CC: Luciralia Ibarra; Veronica Lebron; councilmember.ofarrell@lacity.org; kevin.keller@lacity.org; mayor.garcetti@lacity.org; mindy.nguyen@lacity.org; vince.bertoni@lacity.org
Date: 4/20/2020 2:19 PM
Subject: Hollywood Center: Objection to 45-Day Comment Period for Hollywood Center Draft Environmental Impact Report; Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen:

Thank you. Is my request for tolling or extending the public comment period being considered, and by whom?

Given the current extremely short, 45-day window and the critical issues associated with this project and the pandemic (see Mayor Garcetti's pronouncements as reported in the LA Times today: https://www.latimes.com/california/story/2020-04-19/garcetti-state-of-city-la-address-coronavirus [please print and include the full article as part of this communication for the record]), when can we expect a clear response from City officials to my letter?

As with all my communications, please include this in the record for this matter. Thank you.

Robert P. Silverstein, Esq.
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Pasadena, CA 91101-1504
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==========
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>>>

From: Mindy Nguyen <Mindy.Nguyen@lacity.org>
To: Robert Silverstein <robert@robertsilversteinlaw.com>
CC: Veronica Lebron <Veronica@robertsilversteinlaw.com>, Luciralia Ibarra <luciralia.ibarra@lacity.org>
Date: 4/20/2020 1:53 PM
Subject: Re: Objection to 45-Day Comment Period for Hollywood Center Draft Environmental Impact Report; Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Mr. Silverstein,

Thank you for your email. It has been received and will be noted for the record.

Best,

On Fri, Apr 17, 2020 at 6:55 PM Robert Silverstein <robert@robertsilversteinlaw.com> wrote:

> Dear City Officials:
> Please see attached urgent letter. Please promptly respond. Thank you.
>
> Robert P. Silverstein, Esq.
> The Silverstein Law Firm, APC
> 215 North Marengo Avenue, 3rd Floor
> Pasadena, CA 91101-1504
> Telephone: (626) 449-4200
> Facsimile: (626) 449-4205
> Email: Robert@RobertSilversteinLaw.com
> Website: www.RobertSilversteinLaw.com
> ==========
> The information contained in this electronic mail message is confidential

information intended only for the use of the individual or entity named above, and may be privileged. The information herein may also be protected by the Electronic Communications Privacy Act, 18 USC Sections 2510-2521. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone (626-449-4200), and delete the original message. Thank you.

--

LOS ANGELES CITY PLANNING

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E-NEWS

Garcetti: L.A. is ‘under attack’ and will need to furlough thousands of city workers

In his annual State of the City address, Mayor Eric Garcetti announced plans for furloughs of thousands of city workers.

By David Zahniser, Dakota Smith, Emily Alpert Reyes
April 19, 2020 5:39 PM UPDATED April 19, 2020 | 9:21 PM

Mayor Eric Garcetti warned Sunday that the economic downturn facing Los Angeles will be more painful than the 2008 recession, requiring cuts to government programs and the furlough of thousands of city employees.

In a remarkable State of the City address, one that comes five weeks into the shutdown of many businesses, government buildings and other facilities, Garcetti declared that the city is “under attack” from the coronavirus and the economic fallout that has come with it.

“I’ve never before hesitated to assure you that our city is strong,” he said. “But I won’t say those words tonight. Our city is under attack. Our daily life is unrecognizable.

“We are bowed and we are worn down. We are grieving our dead,” the mayor continued, choking back tears. “But we are not broken.”

The mayor’s remarks represented a jarring break from previous State of the City speeches, when he offered overwhelmingly uplifting messages. In this year’s address, Garcetti offered a series of grim signposts about the city’s immediate future: joblessness, a collapse in hotel reservations and a 95% drop in passenger air travel — all products of the coronavirus outbreak.

The city has already borrowed $70 million from special funds while responding to the health crisis. To balance the city budget, civilian city workers will need to take off 26 unpaid days — the equivalent of a 10% reduction in pay, the mayor said.

“From a fiscal perspective, this is the worst it’s ever been,” he declared.

So far, the city’s political leaders sounded open to the reductions being sought by Garcetti.

Councilman Mike Bonin said that, considering the extent of the economic calamity facing the region, he was relieved that the mayor was not announcing layoffs. Councilman Gil Cedillo described furloughs as the best in a series of bad choices, but worried that residents and city employees would suffer.

“City services are in greater need during a crisis,” said Cedillo, who represents parts of the Eastside.

How acutely the public will feel the cuts is far from clear. Furlough days will not be demanded of police officers, firefighters or workers at the Department of Water and Power, among others. Trash pickup will remain intact, a Garcetti aide said.

The mayor has already closed a number of city facilities to the public, including cultural centers, the Los Angeles Zoo and scores of branch libraries. Some city employees have been reassigned to work in recreation centers operating as makeshift homeless shelters.

One union leader voiced dismay over the cost-cutting plans, saying his members have been called into duty as emergency workers, helping to relocate the city’s homeless population and working at coronavirus testing centers. Adding more instability for those workers will hurt the city, said Bob Schoonover, president of Service Employees International Union Local 721.

“We cannot call these men and women heroes and then turn around and attempt to balance the budget on their backs,” said Schoonover, whose union represents custodians, tree trimmers and others.

Los Angeles Mayor Eric Garcetti, delivering his State of the City speech in a nearly empty City Council chamber, says: "We are bowed and we are worn down. ... But we are not broken."
(Marcus Yam / Los Angeles Times)

Sunday's address comes at an extraordinary time for Garcetti and the city. Over the last five weeks, the mayor has issued emergency orders to close businesses, halt evictions, require face masks, waive parking tickets and generally keep Angelenos away from each other on beaches, hiking trails and in other locations.

With much of the city staying indoors, Sunday's speech bore little resemblance to previous State of the City addresses in L.A. Gone was the color guard, the Pledge of Allegiance and the other ceremonial flourishes that typically accompany Garcetti's yearly address to the city.

In normal years, Garcetti has delivered the address before hundreds of people in packed venues such as the California Science Center and the Valley Performing Arts Center at Cal State Northridge. On Sunday, he spoke inside a mostly empty City Council chamber, with even council members staying at home.

People watch as Los Angeles Mayor Eric Garcetti gives his annual 'State of the City' speech at City Hall in Los Angeles.
(Marcus Yam/Los Angeles Times)

As a result, the event felt closer to one of the many evening coronavirus briefings given by Garcetti since mid-March. However, the overall message was more grim, with Garcetti saying the city would need major help from the federal government to weather the crisis.

"Don't bail out banks but leave cities with cuts and collapse," he said.

Garcetti said Congress should pass a national infrastructure bill to put people back to work. And he called on the federal government to loosen restrictions on emergency funds that prevent the city from using them to replace lost revenue.

The coronavirus outbreak and accompanying economic downturn pose by far the biggest challenge to Garcetti and other city leaders since the 2008 recession. During that crisis, the city's elected officials responded by imposing furloughs, laying off hundreds of workers and eliminating thousands of jobs.

"Until now, it was the biggest economic blow of our lifetime, and it hurt," Garcetti said. "But there's no way to sugarcoat this. This is bigger. It will hurt more."

Revenue for the coming budget year could be as much as $598 million below projections, depending on how long Angelenos continue staying indoors, according to figures released last week by City Controller Ron Galperin.

Much of the reductions have been caused by the steep drop-off in tourism activity, including a major decline in projected hotel bed taxes, Galperin said. Since stay-at-home orders were issued across the state, unemployment claims have skyrocketed, with workers in the entertainment, hospitality and travel industries hit particularly hard.

Garcetti is scheduled to release his proposed budget Monday. The document, which covers spending for the fiscal year that starts July 1, must be approved by the City Council before it can go into effect.

Hollywood resident Kat DeVoe-Peterson joined other protesters outside Getty House on Sunday night. Activists want Los Angeles Mayor Eric Garcetti to cancel rent payments across the city, and take over hotels and fill vacant rooms with homeless Angelenos.
(Dakota Smith/ Los Angeles Times)

While Garcetti delivered his address, activists staged a protest outside Getty House, the mayor's official residence in Windsor Square, calling on him to use his emergency powers to order the cancellation of rent payments and fill vacant hotels with homeless Angelenos.

As drivers repeatedly honked their horns, dozens of sidewalk protesters from the Los Angeles Tenants Union and other groups chanted, “No rent, no rent!” Hollywood resident Kat DeVoe-Peterson, who was recently laid off from her job at a bar in Silver Lake, said Garcetti needs to secure federal funding for renters in the city.

“It’s not just about me, it’s about everyone,” said DeVoe-Peterson, driving a car with the sign “Food Not Rent.”

Josh Rubenstein, a Los Angeles Police Department spokesman, said 11 citations were issued during Sunday’s protest. Some drivers who repeatedly honked their horns were cited for violating an “amplified sound” ordinance. Two protesters on the sidewalk were also detained and cited, police said.

Garcetti said in recent weeks that he has been pressing lawmakers in Washington, D.C., to approve a stimulus package that safeguards both renters and landlords from a massive financial collapse. During his address, he said federal funds should specifically be used to back the suspension of rents and mortgages.

The mayor said the federal government also needs to tackle problems that hurt Americans well before the coronavirus outbreak — depressed wages, crippling college debt, a lack of access to healthcare.

“We must ask of our city and our nation at this time, is ‘normal’ really what we want to come back to?” he asked.

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April 27, 2020

VIA EMAIL mindy.nguyen@lacity.org

Mindy Nguyen
City of Los Angeles, Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012

Re: Further Objection to 45-Day Comment Period for Hollywood Center Project Draft Environmental Impact Report ("DEIR"); Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen and City Officials:

As a follow-up to my April 17, 2020 letter requesting a tolling or extension of the minimal 45-day public comment period provided for the controversial "Hollywood Center" (aka Millennium Hollywood) project Draft EIR, and as a further follow-up to my April 20, 2020 email to you which, as of the date of this letter, has not been responded to, please see the link below and relevant language excerpted from the State Office of Planning and Research ("OPR") encouraging public agencies to extend CEQA public review and comment periods during the COVID-19 crisis.

My office, my clients, many other community members with whom I have spoken, and governmental agencies – most of which are operating at extremely reduced capacity – are all severely prejudiced by the City's imposition of a minimum comment period during these unprecedented times.

I renew my April 17, 2020 request for a tolling or extension of the current, 45-day public comment period on the Draft EIR.

> http://opr.ca.gov/ceqa/
> "**Public Meetings and Public Review of Documents**
>
> "As to providing CEQA documents at public libraries, CEQA Guidelines section 15087(g) states that "[l]ead agencies should furnish copies of draft EIRs to public library systems serving the area involved."

> Providing copies of CEQA documents at libraries may not be feasible at this time, as many libraries are closed. Agencies should be considering other methods to make CEQA documents publicly available, such as posting on the Internet and on CEQAnet, that do not require the public to obtain copies in person.
>
> "**Regarding public review and comment periods for CEQA documents, such as notices of preparation and EIRs, OPR encourages public agencies to consider extending those periods.** Given that public agencies are using new methods to make public documents available in light of the current pandemic, additional time for public review and comment periods may be appropriate." (Emphasis added.)

While Mayor Garcetti announces that "LA is 'under attack' and will need to furlough thousands of city workers" (LA Times, April 19, 2020), the public is doubly under attack by a process so transparently designed to harm community members and groups under attack not only by COVID-19, but by a cynical Draft EIR comment process meant to elevate the interests of a developer over the rights of the public that City officials were elected to serve.

The commencement of the running of the DEIR comment period, which period should be at least 90 days, should be tolled to a date after the lifting of local and state stay-at-home orders. At a minimum, it should be extended to 120 days.

Please confirm that the comment period will be tolled or extended as requested not only by this office and the groundswell of similar requests you are receiving, but also pursuant to OPR's recommendation.

Alternatively, if the City refuses to act responsibly and fairly, please prominently announce to the public that the comment period will not be extended.

Thank you.

Very truly yours,

/s/ Robert P. Silverstein
ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl

cc: Mayor Eric Garcetti (mayor.garcetti@lacity.org)
Councilman Mitch O'Farrell (councilmember.ofarrell@lacity.org)
Councilman David Ryu (david.ryu@lacity.org)
Vince Bertoni, Dir. Of City Planning (vince.bertoni@lacity.org)
Kevin Keller, Exec. Officer of City Planning (kevin.keller@lacity.org)

From: Mindy Nguyen <Mindy.Nguyen@lacity.org>
To:
Date: 4/28/2020 2:29 PM
Subject: Extension Requests for Hollywood Center Project DEIR Comment Period

Hello,

The City has received your request, together with other requests, for an extension of the Hollywood Center Project Draft Environmental Impact Report (Draft EIR) comment period in light of COVID-19.

Per CEQA Guidelines Section 15105, the public review period for a Draft EIR should not be less than 30 days nor should it be longer than 60 days, except under unusual circumstances. While we agree that these are unprecedented times, as indicated in the Notice of Completion and Availability (NOA) for the Hollywood Center Project Draft EIR, the Draft EIR, the documents referenced in the Draft EIR, and the whole of the case file, are available for public review on our website at the following location: https://planning.lacity.org/development-services/eir/hollywood-center-project-1.

If you are having difficulty accessing the document in any way (i.e. if links are not working or the attachments cannot be viewed) please let us know immediately, as we are committed to making the document as accessible as possible from the safety of your own homes, and in compliance with the "Stay at Home" Order. In addition, and as also indicated in the NOA, the Draft EIR can be made available on CD-ROM, USB flash drive or hard copy for anyone who requests one.

While we understand that the "Stay at Home" Order prevents neighborhood groups from meeting in person, please be advised that CEQA does not require people to meet and confer on the EIR, and should not preclude anyone from reviewing the EIR and providing comments.

Furthermore, pursuant to the Governor's Executive Order N-54-20, signed April 22, 2020, deadlines for filing, noticing, and posting of CEQA documents with county clerk offices have been suspended for 60 days. However, deadlines for public review and comment periods for CEQA documents, such as for draft EIRs, have not been suspended and the provisions governing public review remain unchanged.

As such, please be advised that, as the Draft EIR remains accessible to all individuals, the comment period will not be extended at this time. We understand your concern regarding this Project, and ask that you let us know if you have any difficulty accessing the Draft EIR or if you need additional accommodations to be able review it offline.

Please also be reminded that all comments must be provided in writing, and may be submitted electronically via email, or hard copy via mail. Submittal of comments in person is not required, nor recommended.

Thank you.

--

LOS ANGELES CITY PLANNING

Mindy Nguyen
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E-NEWS

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April 29, 2020

VIA EMAIL mindy.nguyen@lacity.org
AND OVERNIGHT DELIVERY

Mindy Nguyen
City of Los Angeles, Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012

Re: Objection to Denial of Request for Extension of 45-Day Comment Period for Hollywood Center Project Draft Environmental Impact Report ("DEIR"); Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen and City Officials:

This letter and all complete documents and materials contained in the links set forth within this letter are to be included in the administrative record for the above-referenced matter.

The City's April 28, 2020 response to our and others' request for an extension of the Hollywood Center Project DEIR comment period is repugnant, verging on mocking the public. To acknowledge as your April 28, 2020 email does that "these are unprecedented times," and yet for the Planning Dept. to treat them for public comment purposes as regular times, defies logic. Its import also ignores how everyone's lives have been upended as people are busy trying to stay safe, to home school children, to care for sick relatives, to manage entirely new and disruptive routines, etc. This no less includes the staff of governmental agencies expected to comment on this DEIR, and which should have the fullest time possible to comment as part of their duties to ensure the public health, safety and welfare.

It is also to deny Mayor Garcetti's repeated emotional pleas, and even threats, to the community about obedience to his "Stay-at-Home" orders. The Planning Dept. buck of unreasonable denial of a tolling or extension of the public comment period for this

massive project and EIR stops with Garcetti. We incorporate by reference the articles contained at these links quoting Mayor Garcetti in this regard:

> "In a remarkable State of the City address, one that comes five weeks into the shutdown of many businesses, government buildings and other facilities, Garcetti declared that the city is 'under attack' from the coronavirus and the economic fallout that has come with it.
>
> 'I've never before hesitated to assure you that our city is strong,' he said. 'But I won't say those words tonight. Our city is under attack. Our daily life is unrecognizable.'"[1]
>
> "Los Angeles Mayor Eric Garcetti unveiled a $10.5-billion budget for the city Monday that imposes cuts across an array of city agencies, with nearly 16,000 city workers being furloughed in response to the economic fallout from the coronavirus outbreak."[2]
>
> "'This weekend we saw too many images of too many people crowding beaches or canyons beyond their capacity. Too many people, too close together, too often,' Garcetti said during his daily briefing on the impact of the novel coronavirus. 'The longer we do that, the more people will get sick, and the more people will die. There's no way to sugarcoat that.'
>
> 'Asked by a reporter whether the city would hold residents accountable for breaking quarantine orders, Garcetti said that law enforcement officers will 'not be shy' when it comes to approaching those who are seen doing so."'[3]

---

[1] https://www.latimes.com/california/story/2020-04-19/garcetti-state-of-city-la-address-coronavirus

[2] https://www.latimes.com/california/story/2020-04-20/coronavirus-garcetti-budget-story-2020-2021-furloughs-cuts

[3] https://www.latimes.com/california/story/2020-03-23/coronavirus-mayor-eric-garcetti-ignoring-social-distancing-beaches

> "'I know your heart breaks…. This is such a great tradition for the many families we have,' L.A. Mayor Eric Garcetti said. 'But we can't afford to have one cluster of even just a few people together spread this disease to more people and kill them.'[4]
>
> "'Unfortunately among the fallen 'is a city employee, Garcetti said Friday. 'It wasn't just lip service that these are going to be tough days.'"[5]
>
> "If a business refuses to provide face coverings for its workers, it could be fined, but the hope is that businesses and customers will follow the order without issue, Garcetti said."[6]
>
> "At least five nights a week, Garcetti has appealed directly to Angelenos on live television — or Facebook, for those with smaller screens — to get them to comply with public health orders and keep up with the region's rapidly changing response to the spread of the novel coronavirus."[7]
>
> "Garcetti said that his office is still receiving daily reports of nonessential businesses that continue to operate as normal — behavior he called 'irresponsible and selfish.'"
>
> "He also announced a Safer at Home business ambassadors initiative that aims to help push greater adherence from nonessential businesses who aren't complying with the city's order to close.

---

4 https://www.latimes.com/california/story/2020-04-10/california-toughens-stay-at-home-rules-as-coronavirus-cases-top-20-000

5 https://www.latimes.com/california/story/2020-04-11/2-l-a-city-workers-die-of-coronavirus

6 https://www.latimes.com/california/story/2020-04-07/coronavirus-face-covering-order-los-angeles-mayor-garcetti

7 https://www.latimes.com/california/story/2020-04-13/garcetti-coronavirus-briefings-distancing-masks-love

> Such businesses should also expect to get a warning call from local prosecutors before the city takes more aggressive action, including turning off their water and power, he said.
>
> 'The easiest way to avoid a visit from the city is to follow the rules,' he said."[8]
>
> "Los Angeles Mayor Eric Garcetti said Wednesday that he's authorized the Department of Water and Power to shut off service to nonessential businesses that continue to operate despite the strict Safer at Home restrictions designed to slow the spread of the coronavirus."[9]

Your April 28, 2020 email also implies or assumes that everyone who wants to review the EIR should be able, on their own, to have an internet connection and sufficient bandwidth to download this very hefty DEIR. There is a serious Environmental Justice issue in the City's unreasonable conduct during this time.

We and our clients are indeed prejudiced, including by my difficulty in accessing all of our hard files, including from the previous StopTheMillenniumHollywood.com vs. City of Los Angeles, et al. (LASC Case No. BS144606; Court of Appeal Case No. B282319; CA Supreme Court Case No. S258643) litigation. Large parts of the administrative record from that original case must be included in the current administrative record because of its relevance to the instant application and DEIR. However, we cannot more discreetly select those documents because of lack of access to our physical offices.

As a result, we incorporate by reference the entire administrative record from the original Millennium case. Although the City Attorneys' Office and, presumably, the City Planning Department have the entire Administrative Record and Reference Library from the original Millennium case, which we ask to be incorporated by reference, nonetheless, in an abundance of caution, we are also sending you by overnight delivery a flash drive containing the full bates-stamped administrative record and full bates-stamped reference

---

[8] https://www.latimes.com/california/story/2020-03-24/garcetti-warns-la-coronavirus-crisis-will-get-worse

[9] https://www.latimes.com/california/story/2020-04-01/l-a-will-shut-off-water-for-non-essential-businesses-operating-amid-coronavirus-restrictions

library from the original Millennium case administrative record. The entirety of those files must be uploaded and included in the present administrative record and on the City Planning Department's running web page of the ongoing additions to the present administrative record for the Hollywood Center Project DEIR. We would suggest those materials be noted in the description as follows:

- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 1 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 2 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 3 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 4 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 5 of 6
- AR from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 6 of 6
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 1 of 2
- RL from StopTheMillenniumHollywood.com v. City of LA (LASC Case No. BS144606 ("Original Millennium Case") 2 of 2

You are required to include all of these documents from the original administrative record in the current administrative record for this Hollywood Center application and Draft EIR, including pursuant to Consolidated Irrigation District:

> "We conclude that the term "submitted to" – which generally means presented or made available for use or study – is concerned with the effort that must be expended by the lead agency in using or studying the "written evidence" presented. (§ 21167.6, subd. (e)(7).) Consequently, we think that the term should be interpreted and

> applied pragmatically to fairly allocate the burden of handling the written evidence. Applying the term too broadly could place an unacceptable burden on lead agency personnel by requiring them to expend time and limited resources tracking down information that could have been provided more efficiently by the commenter. Based on considerations regarding the allocation of burden, we conclude that "written evidence" has been "submitted to" a lead agency for purposes of section 21167.6, subdivision (e)(7) when the commenter has made the document readily available for use or study by lead agency personnel." Consolidated Irrigation Dist. v. Superior Court (2012) 205 Cal.App.4th 697, 723.
>
> "The third category contains five documents named in the comment letters of CID and the air pollution control district along with a citation to the specific Web page containing the document. We conclude that the information provided made these documents readily available to City personnel. To access the document, the person need only type the URL into a computer connected to the Internet. The document will appear on the computer screen and no further searching is required. Thus, the burden placed on lead agency personnel is minimal when a commenter provides the URL to the specific Web page containing the document." Consolidated Irrigation Dist. v. Superior Court (2012) 205 Cal.App.4th 697, 724-725.

The burden placed on the City is minimal, actually non-existent. We have provided a flash drive with all of the bates-stamped files comprising the prior administrative record and reference library that the City itself certified. If you have any difficulty accessing or in utilizing the City's own set of the same materials, please promptly advise.

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Finally, please understand that this by no means remedies or sufficiently mitigates the prejudice to us, and others, from the truncated 45-day comment period during the pandemic. Our request (and that of numerous other community members) for a tolling or extension of that deadline remains active. Thank you.

Very truly yours,

/s/ Robert P. Silverstein
ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
Encl.: Flash drive containing Millennium AR and RL

cc: Mayor Eric Garcetti (mayor.garcetti@lacity.org)
Councilman Mitch O'Farrell (councilmember.ofarrell@lacity.org)
Councilman David Ryu (david.ryu@lacity.org)
Vince Bertoni, Dir. Of City Planning (vince.bertoni@lacity.org)
Kevin Keller, Exec. Officer of City Planning (kevin.keller@lacity.org)

From: Robert Silverstein
To: Luciralia Ibarra; Nicholas Greif; councilmember.ofarrell@lacity.org; david.ryu@lacity.org; kevin.keller@lacity.org; mayor.garcetti@lacity.org; mindy.nguyen@lacity.org; nicholas.maricich@lacity.org; vince.bertoni@lacity.org
Date: 5/8/2020 8:11 AM
Subject: Hollywood Center: Further Request to Extend 45-Day Comment Period for Hollywood Center Draft Environmental Impact Report; Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Mayor Garcetti, Planning Director Bertoni, City officials, and Ms. Nguyen:

We are placing Mayor Garcetti's May 7, 2020 email below and this communication into the record.

The mayor's email reveals a sad hypocrisy as he and the Planning Dept. refuse repeated requests from the public for an extension of the comment period on the Draft EIR for the Millennium Hollywood skyscrapers on the earthquake fault project (aka "Hollywood Center").

Why are city officials giving aid and comfort to Millennium Partners, developer of the Leaning Tower of San Francisco, while the public daily struggles to cope with our new reality, much less meaningfully be able to comment on a 13,000-page EIR in a few short weeks?

The mayor's "I will be here for you" promise rings quite hollow, unless directed to the developers who have contributed to his campaigns.

With city officials under FBI investigation, the mayor and Planning Dept. now more than ever should seek to reassure an apprehensive citizenry that there is integrity in the land use and planning process.

We renew all prior requests. Do the right thing: substantially extend the public comment period.

Robert P. Silverstein, Esq.
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Pasadena, CA 91101-1504
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==========
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>>>

From: Mayor Eric Garcetti <mayor.garcetti@lacity.org>
To:
Date: 5/7/2020 8:32 AM
Subject: Our new reality

View this email in your browser

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Hi,

From the moment COVID-19 arrived in Los Angeles, I've been as clear as possible about the magnitude of the challenge we face — and the steps and sacrifices required to get through this crisis. I promised you the facts, the data, and the unvarnished truth about the dangers of this virus.

And I've been so proud of the way Angelenos have responded. You've stayed home. You've changed your routines. You've helped your kids enter a new world of distance learning. You've put off family gatherings and celebrated holidays virtually. And if you're an essential worker, you've gone above and beyond to serve us all.

None of this has been easy. The path forward will be long and winding. And we will continue to face a hard truth: COVID-19 is not going away soon.

But let there be no doubt: your actions have saved lives. And we need to keep at it.

Together with the County, I announced that I will modify the city's Safer at Home order. This does not mean life is going back to the way it was before the pandemic.

Until there is a vaccine or effective treatment, this virus will remain a threat to everyone. You still need to stay home, wear face coverings, and refrain from gatherings with anyone who doesn't live in your home. These measures remain as important as ever.

But we also must learn how to live with this new reality and find ways to begin to safely and slowly lift restrictions, guided by science and data — making minor and deliberate adjustments over an extended period of time.

The City of Los Angeles will take a gradual and staged approach to our response, working with leaders across the region and listening to public health experts. This approach will enable us to carefully make changes, monitor risks and needs, and adjust our approach as needed.

On Friday, May 8th, this process will begin: florists, toy stores, music stores, bookstores, clothing and sporting goods stores may offer curbside pickup only. Car dealership showrooms may open. And starting Saturday, you'll be able to return to golf courses, trailhead parks and trails — except Runyon Canyon, which will remain closed. Face coverings are required for anyone using trails or golf courses.

Remember: we originally closed hiking trails when they became too crowded to be safe, and if we see people failing to keep their distance, wear face coverings, and follow the rules, we will be forced to close them again.

Meanwhile, all other Safer at Home restrictions — include the closures at our beaches, park sports facilities and recreation centers — remain in place.

We are taking this process one step at a time. Here's what that will look like:

The first stage — where Los Angeles has been over the last several months — is crisis management mode, which has the goal of saving as many lives as possible.

The second stage — which we will enter on Friday — aims to transition Angelenos back to a "new reality," with a slow rollback of some restrictions, while ensuring that there are adequate safety measures in place.

In the third and fourth stages, the City will transition to a state of monitoring, and aim to lift additional restrictions.

In order to move to a new stage, our city must reach key milestones, based on metrics and tracked by data. If the metrics are trending in the wrong direction, restrictions will return. Every decision will be based on an assessment of the risk to our communities and the capacity of our medical systems to respond.

You'll be able to track the status of these indicators, a description of the phases, and the steps we're taking on our COVID-19 response website.

This process will not always be straightforward. We may step forward, step backward, or pause — depending on the public health indicators. We are now in a world more complex than we could have ever imagined, facing a virus that remains dangerous to all of us. And it will take many steps to bring us to safety.

But I will be here for you. Angelenos will be there for each other with courage, generosity, and L.A. Love — and we will get there together.

Thank you for everything you do.

Eric Garcetti
Your Mayor

Share Tweet Forward

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Los Angeles, CA 90012

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May 22, 2020

VIA EMAIL mindy.nguyen@lacity.org

Mindy Nguyen
City of Los Angeles, Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012

Re: Further Request for Extension of 45-Day Comment Period for, and *Objections to Substantive Corruption in*, Hollywood Center Project Draft Environmental Impact Report; Case Number ENV-2018-2116-EIR; State Clearinghouse Number 2018051002

Dear Ms. Nguyen and City Officials:

This firm and the undersigned represent Stopthemillenniumhollywood.com ("STMH"), a community group that actively participated in, and successfully litigated against, the prior version of the newly-named "Hollywood Center" project. STMH, its supporters and other members of the public have an interest in meaningfully participating in the current Draft EIR comment process, but are impaired from fully doing so in the constrained, 45-day comment period imposed by the City. They are also impaired from fully doing so because the Draft EIR contains multiple pages with corrupted and illegible text and figures, including in every single Figure and Plate of Appendix G-1 regarding the most pressing issue of public health and safety related to earthquake fault risk.

As to the City's continued unreasonable and illegal (see below) refusal to extend the comment period on a 13,000-page Draft EIR dropped on the public during the pandemic, we note that for the prior Millennium Hollywood Draft EIR on the same site and by the same developer, then-Councilman Garcetti requested an extension of that 45-day public comment period, which was granted. In his November 2, 2012 letter, he wrote:

> "The Planning Department has released the draft Environmental Impact Report (EIR) for the proposed Millennium Project at 1750 Vine Street, which commenced a 45 day public comment period.

> The proposed project is large in scale and includes what could be one of the tallest buildings in all of Hollywood. As I'm sure you are aware, the proposed project has generated controversy among my constituents. Accordingly, I request that the public comment period be extended to 60 days to increase the public's opportunity to comment on the draft EIR." (**Exhibit 1**.**)**

That the City Planning Department and City officials, including Mayor Garcetti and Councilmen O'Farrell and Ryu have not yet secured for the public an extension to comment on a similarly massive project, and in the midst of the COVID-19 pandemic, is truly a deplorable low even for this City government.

Mayor Garcetti's comment quoted above remains accurate today: "The proposed project is large in scale and includes what could be one of the tallest buildings in all of Hollywood." (**Exhibit 1**.**)**

It is actually an understatement. The proposed project is over a million square feet and would indisputably contain the tallest building in all of Hollywood – not to mention, place it on an active 7.0 earthquake fault as shown by the State of California in its Alquist-Priolo Map.

Further, "[a]s I'm sure you are aware, the proposed project has generated controversy." (**Exhibit 1**.**)** That, too, remains accurate, and an understatement. From the groundswell of requests for an extension that you have already received, you know of the controversy generated by the current proposed project.

As you are also aware from my office's litigation against the Millennium Hollywood project and our exposure of repeated violations of the law by the City related to this site and developer (see trial court and Court of Appeal rulings in Stopthemillenniumhollywood.com, et al. v. City of Los Angeles, et al., Case Nos. BS144606 and B282319; see also **Exhibit 2**, May 20, 2020 Los Angeles Times article, "*Here's a closer look at the ex-deputy mayor enmeshed in City Hall corruption probe*"), the proposed project is generating extreme controversy among City residents, property owners and stakeholders.

It should go without saying that an extension of the public comment period is appropriate and warranted. That the City refuses to provide that, even against its own precedent related to the same site, only adds to the controversy.

We also note how routinely such extensions are normally granted. For example, the City's July 30, 2019 Notice of Extension of the comment period, for an additional 30 days, for the nearby citizenM Hollywood & Vine project **(Exhibit 3)**, when no pandemic was present, further highlights the outrageousness of the City's refusal to extend the public comment period now.

As our Supreme Court has held:

> "The EIR is . . . intended 'to demonstrate to an **apprehensive citizenry** that the agency has, in fact, analyzed and considered the ecological implications of its action.' [Citations.] Because the EIR must be certified or rejected by public officials, it is a document of accountability. . . . The EIR process protects not only the environment but also informed self-government." Laurel Heights Improvement Assn. v. Regents of University of California (1988) 47 Cal.3d 376, 392 (emphasis added).

As instructed in a Court of Appeal decision in another California Environmental Quality Act ("CEQA") case where the City lost:

> "The fundamental goals of environmental review under CEQA are information, participation, mitigation, and accountability." Lincoln Place Tenants Ass'n. v. City of Los Angeles (2007) 155 Cal.App.4th 425, 443-444.

Mayor Garcetti, the City Council and City Planning have an apprehensive citizenry – heightened by the City's past and present actions. Those actions, including the refusal to extend the Hollywood Center public comment period, impair CEQA's fundamental goals.

Finally, we note not only the City's disingenuous position, but the actual illegality of refusing to the extend the public comment period during the pandemic. The City's due process violations in this regard have been raised by this office and many others dealing with the impacts of the COVID-19 situation and the shut-down orders.

As one further example, Hollywood resident Mary Ledding has written to you regarding the prejudice to herself, her neighbors and the general public by the City's conduct, which conduct is not ameliorated by the City's offers to provide flash drives (useless for people without computers) or dilatory delivery of reams of paper print-outs.

Ms. Ledding noted in a May 21, 2020 email:

> "I did get the flashdrive but of course that requires a computer to use. It will be of no help to our neighbor who doesn't use computers. I have not received the print-outs [requested many days earlier]. [¶] My question, of course, is how are people expected to be able to review this vast report in the extremely short time frame the City is allowing? . . . I don't know the total pages of the DEIR but assuming it approaches 3000 pages including the essential appendices and cites [it is actually 13,000 pages], and assuming you get us a print copy by end of business tomorrow, that means we have to review 300 pages a day AND write intelligent comments hopefully with the benefit of some sort of community zoom conversation all while citizens are still "sheltering at home", doing their own schooling, cooking, and, if they are lucky, working their jobs. This is not reasonable nor does it provide the City with thoughtful, relevant comments to this massive, community-rending project. The City needs to grant an extension on the deadline. Please take this matter up again. This process is a disgrace to the community that will have to live with it for decades to come."

In my April 27, 2020 letter, I objected to the City's failure to extend the public comment period in light of the COVID-19 crisis, and in particular, the absence of public access to hard copies of the Draft EIR in the usual locations of (now-closed) local libraries and the (now-closed without appointment) City Planning Department. I noted:

> "While Mayor Garcetti announces that "LA is 'under attack' and will need to furlough thousands of city workers" (LA Times, April 19, 2020), the public is doubly under attack by a process so transparently designed to harm community members and groups under attack not only by COVID-19, but by a cynical Draft EIR comment process meant to elevate the interests of a developer over the rights of the public that City officials were elected to serve."

The City responded on April 28, 2020 with an email that gave the facile and untrue response that "the Draft EIR remains accessible to all individuals" because the documents were all on line, thereby implying that everyone who wanted to review the Draft EIR should be able, on their own, to have a computer, an internet connection and sufficient bandwidth to download this 13,000-page document and lengthy technical

appendices.[1] I again objected, in a letter dated April 29, 2020, reminding the City of Mayor Garcetti's lock-down order that closed the libraries and City Hall.

---

[1] Further, in the City's haste to release the Draft EIR during the most painful and inconvenient time for the public, the City released a Draft EIR PDF document with file corruption containing "bugs" that have distorted critical information, including throughout the "Figures and Plates" in Appendix G-1, 2015 Fault Activity Investigation. Every figure and plate has critical text and/or numbers replaced or overwritten by blank square boxes. (See, e.g., sample pages G-1, 50 & 51, and enlargements of same, attached at **Exhibit 4**.)

This is true of all of the figures and plates in Appendix G, totaling 18 pages (8 figures; 10 plates). The same distorted text also occurs in Appendix E within Appendix G-1.) This is not intended to be an inventory of all the distorted pages, figures and images marring the Draft EIR. There may be more. However, it is the City's duty to identify and fix through a recirculated Draft EIR. It is enough that we have pointed out to you the double injustice of forcing people to try to comment in this truncated time frame, on pages – in one of the most critical subject areas, i.e., earthquakes and seismology – which are obviously and substantively distorted.

To confirm this fatal informational flaw in the Draft EIR, we downloaded PDFs and got the same result with boxes masking critical text and figures. We used Adobe 2017, which states that it is the same as Adobe DC. We used different computer systems to view the PDF in Adobe 2017 Professional and Adobe DC Professional. We also hard printed. The pages came out with the same boxes blanking out text and figures, often in ways that are completely unreconstructable. Finally, to be 100% sure, we had an IT consultant upload the file to a new PC with Adobe DC Pro, and had the same result.

That the City has circulated a Draft EIR with information concealed or obliterated concerning the most pressing issue of public health and safety related to earthquake fault risk is especially unacceptable.

Accordingly, a full and complete Draft EIR has not yet been released to the public, even assuming everyone could access the current distorted version on the internet. This is an additional legal basis for requiring that the Draft EIR public comment period be extended, or more appropriately, restarted once a correct Draft EIR is prepared and made available to the public, with all text, numbers, figures and plates fully legible.

The City's cavalier, let-them-use-internet attitude ignores the very real fact that not all communities have the same access to computers, and sometimes lack the ability to access the internet. The libraries where they might usually access the internet are closed, making the City's assertion about universal and timely access to the Draft EIR patently untrue. This inability to access the internet is particularly and painfully true now, when rampant unemployment is making many people choose between food and rent payments. The City's assumption that they can afford a laptop and internet access is both arrogant and discriminatory, and denies many the ability to meaningfully participate in the City's decision-making about this proposed project.

The City's conduct does not comport with both long-standing and recent legislation defining environmental justice. Assembly Bill 1628 was signed into law by Governor Newsom on September 27, 2019, and took effect this year. The bill's Section 1, subd. (b), provides:

> "It is therefore the intent of the Legislature to ensure that the populations and communities disproportionately impacted by pollution *have equitable access to, and can meaningfully contribute to, environmental and land use decisionmaking*, and can enjoy the equitable distribution of environmental benefits." (Emphasis added.)

This definition of "environmental justice" expanded the existing definition in Government Code Section 65050.12, subd. (e):

> "'[E]nvironmental justice' means the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies."

While AB 1628 only formally amended the Coastal Act and the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, the intent of the Legislature is clear that environmental justice must include equal access by all communities to information about governmental decisions that may affect them, and equal opportunity to participate in the making of those governmental decisions. The City has denied equal access and "fair treatment" regarding the Hollywood Center project and the impacts it may have on the community's physical environment.

As with all of our communications, please ensure that this letter and attachments or printed out links therein are included in the running administrative record for this case.

To conclude, we renew our requests, and that of multiple community members and groups, for a tolling or extension of the current, June 1, 2020 public comment deadline.

In light of the seismic/earthquake fault Figures and Plates being corrupted, this is even more urgent, and legally mandated. Sadly, corruption permeates the Draft EIR, literally and figuratively.

Please publicly advise – as far in advance of June 1, 2020 as possible – regarding extending or restarting the public comment period. Thank you.

Very truly yours,

/s/ Robert P. Silverstein
ROBERT P. SILVERSTEIN
FOR
THE SILVERSTEIN LAW FIRM, APC

RPS:vl
Encls.

cc: Mayor Eric Garcetti (mayor.garcetti@lacity.org)
Councilman Mitch O'Farrell (councilmember.ofarrell@lacity.org)
Councilman David Ryu (david.ryu@lacity.org)
Vince Bertoni, Dir. Of City Planning (vince.bertoni@lacity.org)
Kevin Keller, Exec. Officer of City Planning (kevin.keller@lacity.org)
Nicholas Greif, CD 4 Chief of Staff (nicholas.greif@lacity.org)
Emma Howard, CD 4 Planning Deputy (emma.howard@lacity.org)
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Nicholas Maricich, Mayor's Office, Director of Planning (nicholas.maricich@lacity.org)
Luciralia Ibarra, City Planner (luciralia.ibarra@lacity.org)

EXHIBIT 1

ERIC GARCETTI

COUNCILMEMBER, CITY OF LOS ANGELES • DISTRICT 13

November 2, 2012

Los Angeles City Planning Department
200 N. Spring St, Room 525
Los Angeles, CA 90012

Attn: Planning Director, Michael LoGrande

Dear Michael:

The Planning Department has released the draft Environmental Impact Report (EIR) for the proposed Millennium Project at 1750 Vine Street, which commenced a 45 day public comment period. The proposed project is large in scale and includes what could be one of the tallest buildings in all of Hollywood. As I'm sure you are aware, the proposed project has generated controversy among my constituents. Accordingly, I request that the public comment period be extended to 60 days to increase the public's opportunity to comment on the draft EIR.

Sincerely,

E. Garcetti

ERIC GARCETTI
Councilmember, 13th District

CITY HALL OFFICE: 200 NORTH SPRING STREET, ROOM 475 • LOS ANGELES, CA 90012 • 213.473.7013 • FAX: 213.613.0819
HOLLYWOOD DISTRICT OFFICE: 5500 HOLLYWOOD BLVD., 4TH FLR • LOS ANGELES, CA 90028 • 323.957.4500 • FAX: 323.957.6841
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COUNCILMEMBER.GARCETTI@LACITY.ORG • WWW.CD13.COM

EXHIBIT 2

Here's a closer look at the ex-deputy mayor enmeshed in City Hall corruption probe

Former Deputy Mayor Raymond Chan, left, and Los Angeles Mayor Eric Garcetti. (Los Angeles Department of Building and Safety; Associated Press)

By Emily Alpert Reyes, Joel Rubin
May 20, 2020 | 5 AM

Raymond Chan earned praise at City Hall for his eagerness to smooth out city bureaucracy for developers, both as the head of Los Angeles' building department and later as a deputy mayor focused on economic development.

When Chan stepped down from city service, Mayor Eric Garcetti credited him with helping to usher in L.A.'s development boom and lauded him as a "true public servant."

Now court records in an ongoing federal probe into corruption at City Hall tell a different story. Prosecutors have alleged that a deputy mayor was paid by a real estate consultant to help shepherd a major project through City Hall — and leveraged his power as a city official to aid the development.

Although federal investigators did not name the former deputy mayor in court papers, details about his employment history make clear it is Chan, including the dates that he headed the Los Angeles Department of Building and Safety and when he was appointed deputy mayor for economic development. He has not been charged with a crime.

Chan has long been known to be under scrutiny by investigators: He was previously named in a federal warrant seeking evidence of possible crimes involving more than a dozen people, which surfaced more than a year ago. The warrant, served on Google, sought records from his email account.

But the latest filing spells out much more about what investigators are probing about the former deputy mayor and building chief, whose enthusiasm for fostering new development had long polarized his fans and critics.

The allegations surrounding such an important figure — a City Hall veteran who led a department crucial to real estate development — could deepen the distrust in local government that has been fueled by the federal investigation.

Chan did not respond to phone messages seeking comment. His attorney, Harland Braun, said Chan had done nothing wrong. Chan was recognized in the development industry as a "helpful, go-to person whenever help or advice was needed" and "never asked for or received anything in return for his own interest or benefit," Braun said.

The new allegations emerged when one of Chan's business associates became the third person charged in the sweeping investigation into alleged pay-to-play schemes at L.A. City Hall. Real estate consultant George Chiang has agreed to plead guilty to participating in a criminal enterprise that included helping a Chinese firm bribe an L.A. City Council member and paying a deputy mayor to usher along a development project.

Garcetti, asked about the federal allegations involving a former deputy mayor, said last week that he had "zero tolerance" for the alleged wrongdoing detailed by prosecutors.

Chan had long been seen as a friend to development. Six years ago, when Chan was chosen to permanently take over the building department, council members praised him for cutting red tape. Councilman Mitch O'Farrell said he had "made great strides in reducing the number of steps that it takes to get projects off the ground," bolstering the economy.

Robert "Bud" Ovrom, who headed the building department before Chan, described Chan as a "Mr. Fix It" who was bullish about development and extremely accommodating to council members.

"If a councilman asked Ray, 'What does two and two equal?' he would answer by saying, 'What do you want it to equal?' " said Ovrom, who added that he was stunned by the allegations in the federal case.

Chan emphasized his efforts to streamline L.A.'s permitting process. In a slideshow for employees after Chan got the job, the department urged employees to be flexible and focus on the intent of city codes. It offered up a scenario of a man who orders a set dinner in a restaurant and is told he cannot substitute fruit for Kahlua cream pie.

“Would the man eat at the restaurant again?” the slideshow asked. “Could the restaurant be more reasonably flexible?”

Robert P. Silverstein, an attorney who has represented neighborhood groups suing the city over development decisions, said he was disturbed that the building department seemed to see developers, not the public, as its customers. He argued that the department “reached a truly deplorable low under Chan,” who led the department as either its interim or permanent chief from 2013 to 2016.

Opponents of the Millennium Hollywood skyscraper project, which was thwarted by legal challenges brought by Silverstein, argued that Chan had a conflict of interest because his son was a paid intern at a law firm that represented the Millennium developer. Silverstein complained that “instead of cleaning house, Garcetti promoted Chan to deputy mayor” in 2016.

Chan said shortly after the complaint was submitted that he had been cleared of wrongdoing. A Garcetti spokesman said the matter “was referred to the Ethics Commission, which declined to take any enforcement action.”

In federal filings last week, prosecutors laid out a bribery plot involving Chiang, his business partners and an unnamed Los Angeles City Council member. Details in court filings have made clear that the politician is Councilman Jose Huizar, whose attorneys have repeatedly declined to comment.

Prosecutors also detailed the role of “Individual 1,” describing him as a former deputy mayor who first met Chiang at an event hosted by the Chinese firm that pursued the hotel-and-residential project involved in the alleged bribes.The man told Chiang he was well-respected as the general manager of the building department, their filing said.

The unnamed man later asked over lunch whether Chiang was interested in consulting on downtown development projects and offered to introduce Chiang to city officials, according to the plea deal.

Individual 1 “indicated that his goal was to ensure the success of Chinese projects in Los Angeles,” prosecutors said. He instructed Chiang to set up a consulting company to carry out his goals, and Chiang formed Synergy Alliance Advisors,according to the federal filings. The two later formed CCC Investment Group, which worked with development companies.

Chiang became a consultant on a planned project that would redevelop the Luxe City Center Hotel across from the L.A. Live entertainment complex, proposed by the Chinese firm Shenzhen Hazens. Prosecutors did not name the development involved in the alleged bribery scheme, but details in their filings — including the number of hotel rooms and residential units and the dates of City Hall votes — match the downtown project.

The plea deal states that the deputy mayor reached an agreement with Chiang to help with the planned project in exchange for “future payments.” While the deputy mayor was still working

for the city, he prepared weekly lists of tasks for the project, led project meetings and assigned tasks to Chiang to advance the project, according to the plea deal.

He also leveraged his official position to pressure subordinates to take favorable steps for the project, set up a meeting between the planning department and company officials pursuing the development, and met with a member of the City Planning Commission to urge them to approve it, prosecutors alleged. Months after he left his city job in 2017, he was paid $112,000 for his assistance with the project as deputy mayor, according to prosecutors.

Shortly after leaving his city job, during the period when he was barred from lobbying city officials, the former deputy mayor asked a top staffer to an unnamed council member — identified only as “City Staffer D” — to ask a Garcetti staffer to pressure the commission to approve the project, according to prosecutors. Soon afterward, Chiang set up a consulting agreement to benefit a relative of City Staffer D, the filing states.

The Times also reported last year that while serving as deputy mayor, Chan had raised tens of thousands of dollars for Asian Pacific American Heritage Month celebrations from real estate developers who were seeking city approvals or awaiting building inspections.

Chan told a council aide that he had secured a $10,000 donation from Shenzhen Hazens. Experts said such fundraising activities are legal but could raise ethical concerns, depending on how much influence Chan had over those companies.

EXHIBIT 3

DEPARTMENT OF
CITY PLANNING

COMMISSION OFFICE
(213) 978-1300

CITY PLANNING COMMISSION

SAMANTHA MILLMAN
PRESIDENT

VAHID KHORSAND
VICE-PRESIDENT

DAVID H. J. AMBROZ
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CITY OF LOS ANGELES
CALIFORNIA

ERIC GARCETTI
MAYOR

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SHANA M.M. BONSTIN
DEPUTY DIRECTOR

TRICIA KEANE
DEPUTY DIRECTOR

ARTHI L. VARMA, AICP
DEPUTY DIRECTOR

LISA M. WEBBER, AICP
DEPUTY DIRECTOR

July 30, 2019

NOTICE OF EXTENSION

THIS IS TO SERVE NOTICE THAT THE FINAL DAY OF THE COMMENT PERIOD FOR DRAFT EIR CASE NO. ENV-2016-2846-EIR (SCH NO. 2016101009) HAS BEEN EXTENDED FROM July 30, 2019 TO August 29, 2019

TO: Owners of Property and Occupants and Other Interested Parties
PROJECT NAME: citizenM Hollywood & Vine
SITE LOCATION: 1718 N. Vine Street, Los Angeles, CA 90028
COMMUNITY PLAN AREA: Hollywood Community Plan Area
COUNCIL DISTRICT: 13—Mitch O'Farrell
COMMENT REVIEW PERIOD: June 13, 2019–**August 29, 2019**

PROJECT DESCRIPTION: The Project includes development of a hotel on an approximately 0.28-acre site located at 1718 N. Vine Street (Project Site) in the Hollywood community of the City. The Project would include 240 guest rooms, approximately 2,742 square feet of guest amenities, and approximately 5,373 square feet of shared guest and public spaces. The building would have a maximum height of 185 feet and would consist of 13 above-ground levels (including a mechanical mezzanine level above Level 1) and five subterranean levels. The Project would provide 79 vehicular parking spaces and 72 bicycle parking spaces within five subterranean levels of parking in accordance with LAMC requirements. All vehicular parking would be valet only. Upon completion, the Project would result in approximately 73,440 square feet of new floor area and a maximum floor area ratio (FAR) of 6:1.

ANTICIPATED SIGNIFICANT ENVIRONMENTAL EFFECTS: Based on the analysis included in the Draft EIR, the Project would result in significant and unavoidable Project-level impacts related to on-site noise and vibration (human annoyance) and off-site vibration (human annoyance) during construction. In addition, the Project would result in significant and unavoidable cumulative on-site noise, off-site noise, on-site vibration (human annoyance), and off-site vibration (human annoyance) during construction. All other potential impacts would be less than significant or mitigated to less-than-significant levels.

FILE REVIEW AND COMMENT: The Draft EIR and the documents referenced in the Draft EIR are available for public review at the City of Los Angeles, Department of City Planning, 221 N. Figueroa Street, Suite 1350, Los Angeles, CA 90012 during office hours Monday–Friday, 9:00 A.M.–4:00 P.M. Please contact the Staff Planner listed below to schedule an appointment.

The Draft EIR is also available online at the Department of City Planning's website at http://planning.lacity.org (click on the "Environmental Review" tab on the left-hand side, then "Draft EIR," and click on the Project title), and copies are also available at the following Library Branches:

1) Central Library, 630 W. 5th Street, Los Angeles, CA 90071
2) Francis Howard Goldwyn Hollywood Regional Library, 1623 N. Ivar Avenue, Los Angeles, CA 90028
3) Will & Ariel Durant Branch Library, 7140 W. Sunset Boulevard, Los Angeles, CA 90046
4) John C. Fremont Branch Library, 6121 Melrose Avenue, Los Angeles, CA 90038

The Draft EIR can also be purchased on CD-ROM for $5.00 per copy. Contact Erin Strelich at (213) 847-3626 to purchase copies.

The review period for the Draft EIR begins on June 13, 2019, and ends on August 29, 2019. If you wish to submit comments regarding the Draft EIR, please reference the file number above and submit them in writing by 4:00 p.m. on August 29, 2019.

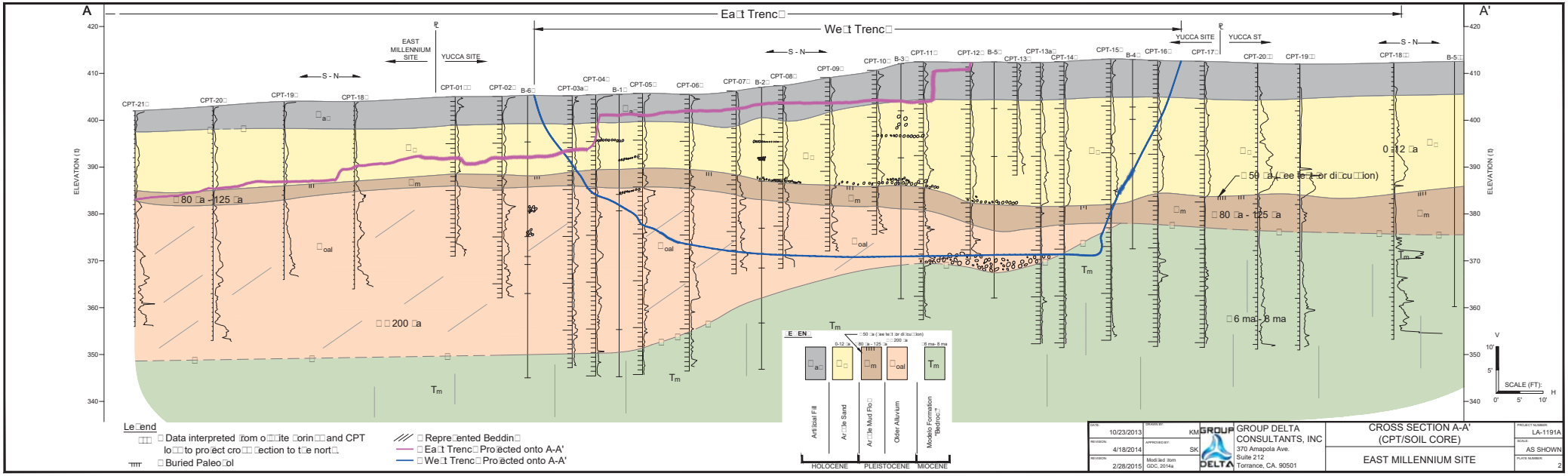
Please direct your comments to:

Erin Strelich
Department of City Planning
221 North Figueroa Street, Suite 1350
Los Angeles, CA 90012
E-mail: erin.strelich@lacity.org

VINCENT P. BERTONI, AICP
Director of Planning

Erin Strelich
Major Projects Section
Department of City Planning
(213) 847-3626

EXHIBIT 4



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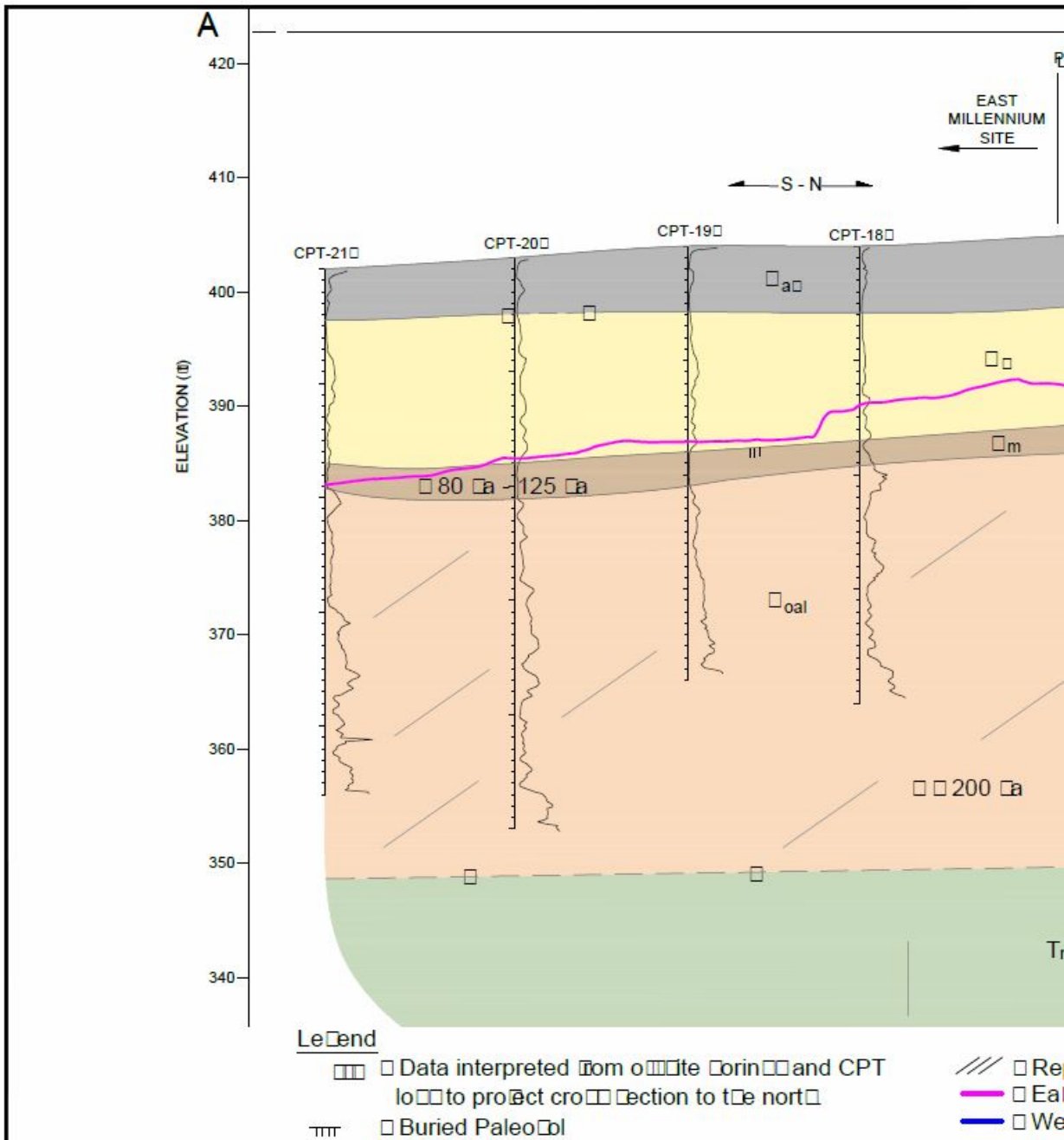
REVISION: 2/28/2015	Modified from GDC, 2014a		PLATE NUMBER: 2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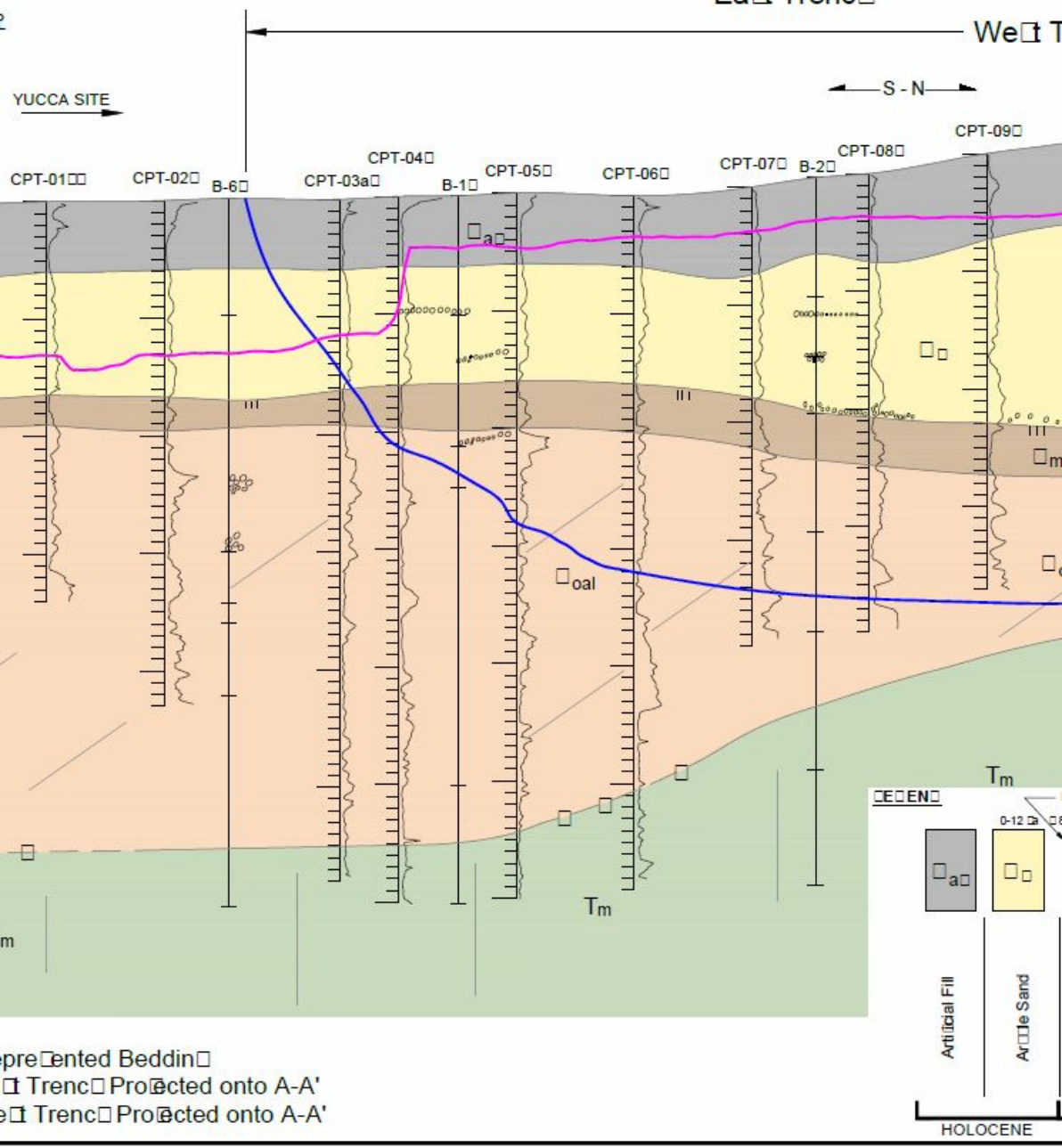

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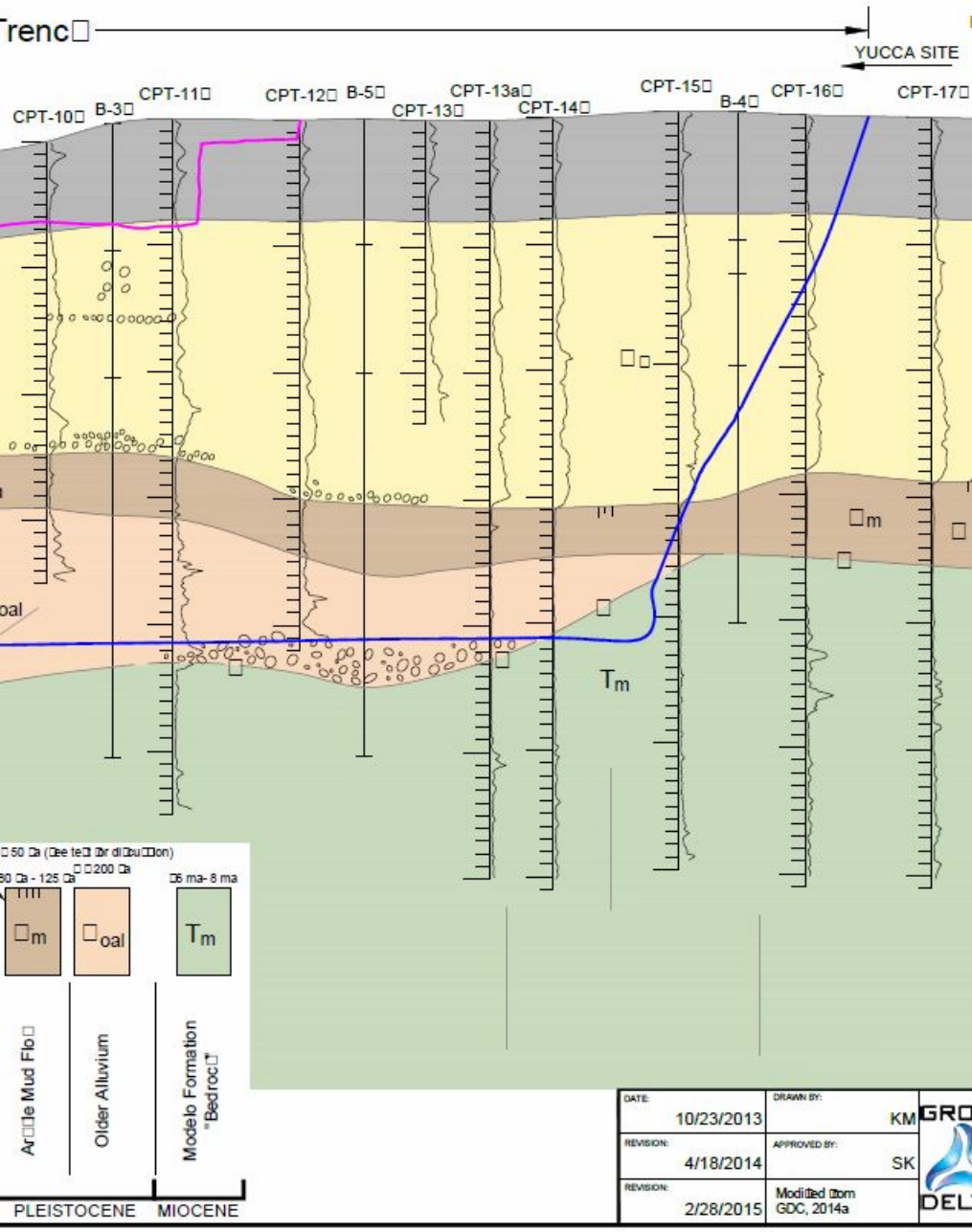

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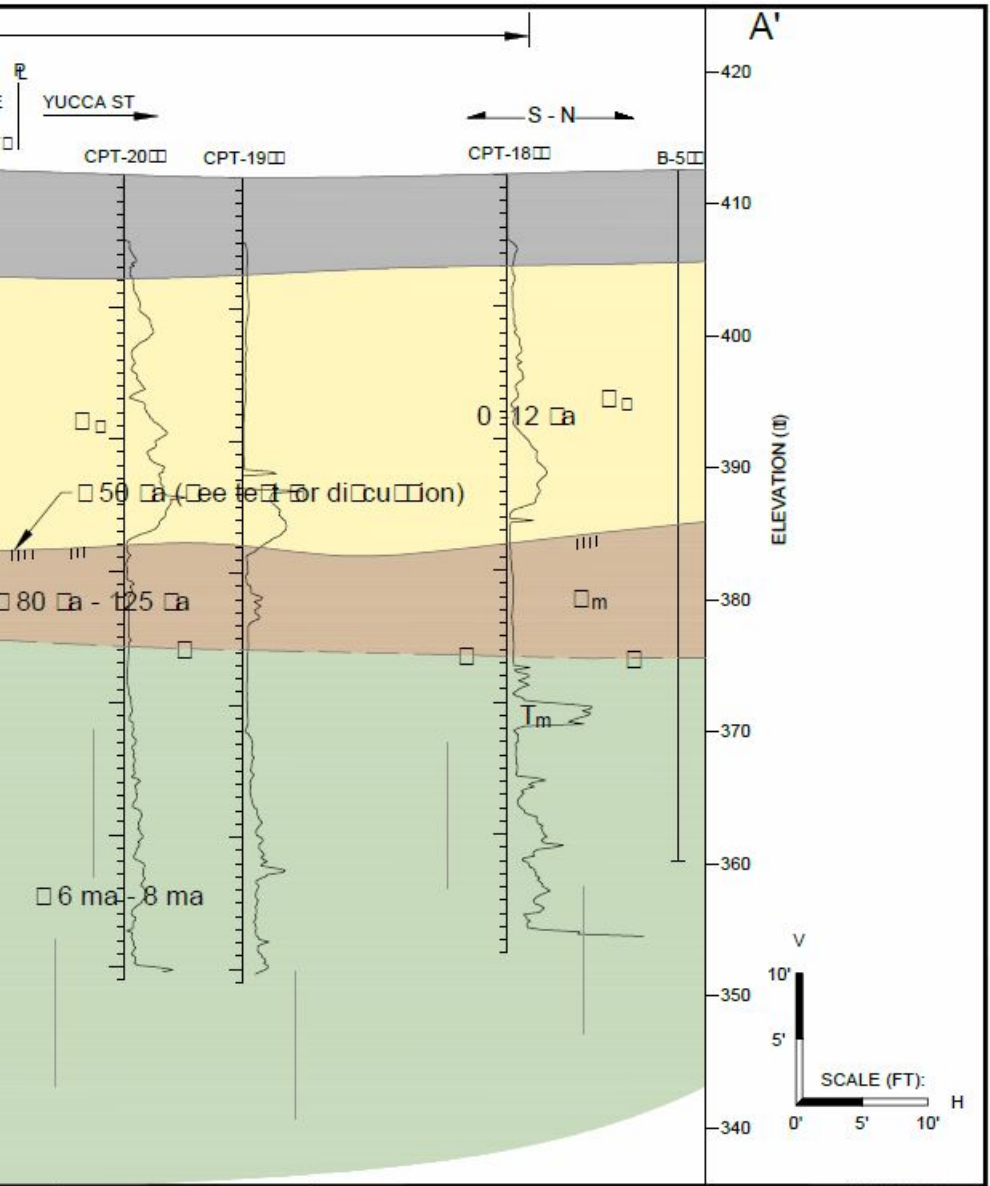
REVISION: 2/28/2015	Modified om GDC, 2014a	DEL



GROUP DELTA CONSULTANTS, INC 370 Amapola Ave. Suite 212 Torrance, CA. 90501	CROSS SECTION A-A' (CPT/SOIL CORE) EAST MILLENNIUM SITE	PROJECT NUMBER: LA-1191A SCALE: AS SHOWN PLATE NUMBER: 2

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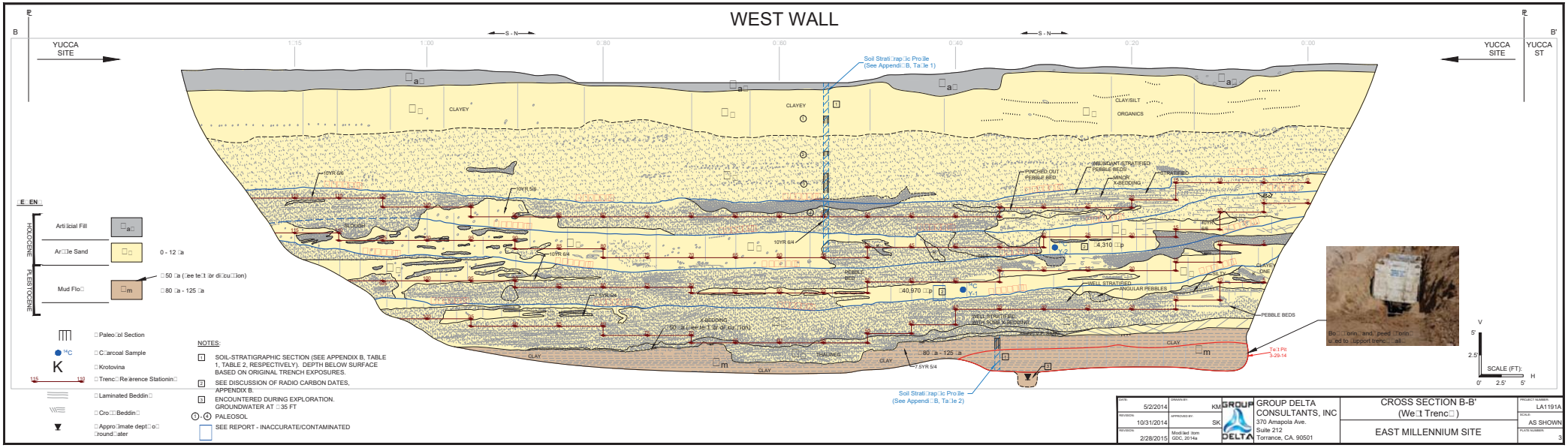

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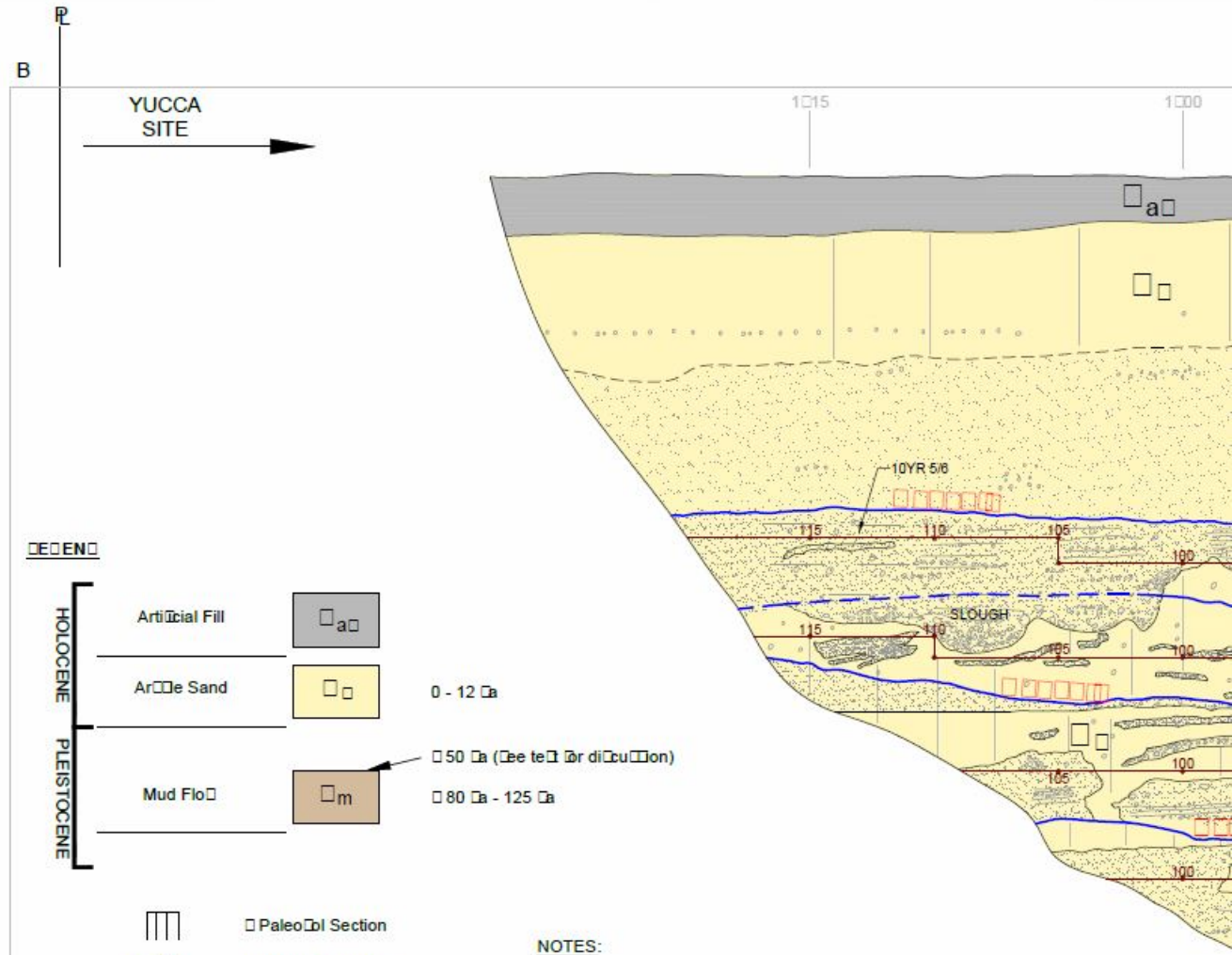
NOTES:

1. SOIL-STRATIGRAPHIC SECTION (SEE APPENDIX B, TABLE 1, TABLE 2, RESPECTIVELY). DEPTH BELOW SURFACE BASED ON ORIGINAL TRENCH EXPOSURES.
2. SEE DISCUSSION OF RADIO CARBON DATES, APPENDIX B.
3. ENCOUNTERED DURING EXPLORATION. GROUNDWATER AT □35 FT
4. ① - ⑥ PALEOSOL
5. SEE REPORT - INACCURATE/CONTAMINATED

DATE: 5/2/2014	DRAWN BY: KM	GROUP DELTA CONSULTANTS, INC 370 Amapola Ave. Suite 212 Torrance, CA. 90501	CROSS SECTION B-B' (We□t Trenc□)
REVISION: 10/31/2014	APPROVED BY: SK		EAST MILLENNIUM SITE
REVISION: 2/28/2015	Modified from GDC 2014a		PROJECT NUMBER: LA1191A SCALE: AS SHOWN PLATE NUMBER: 3



NOTES:

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① - ④ PALEOSOL

SEE REPORT - INACCURATE/CONTAMINATED

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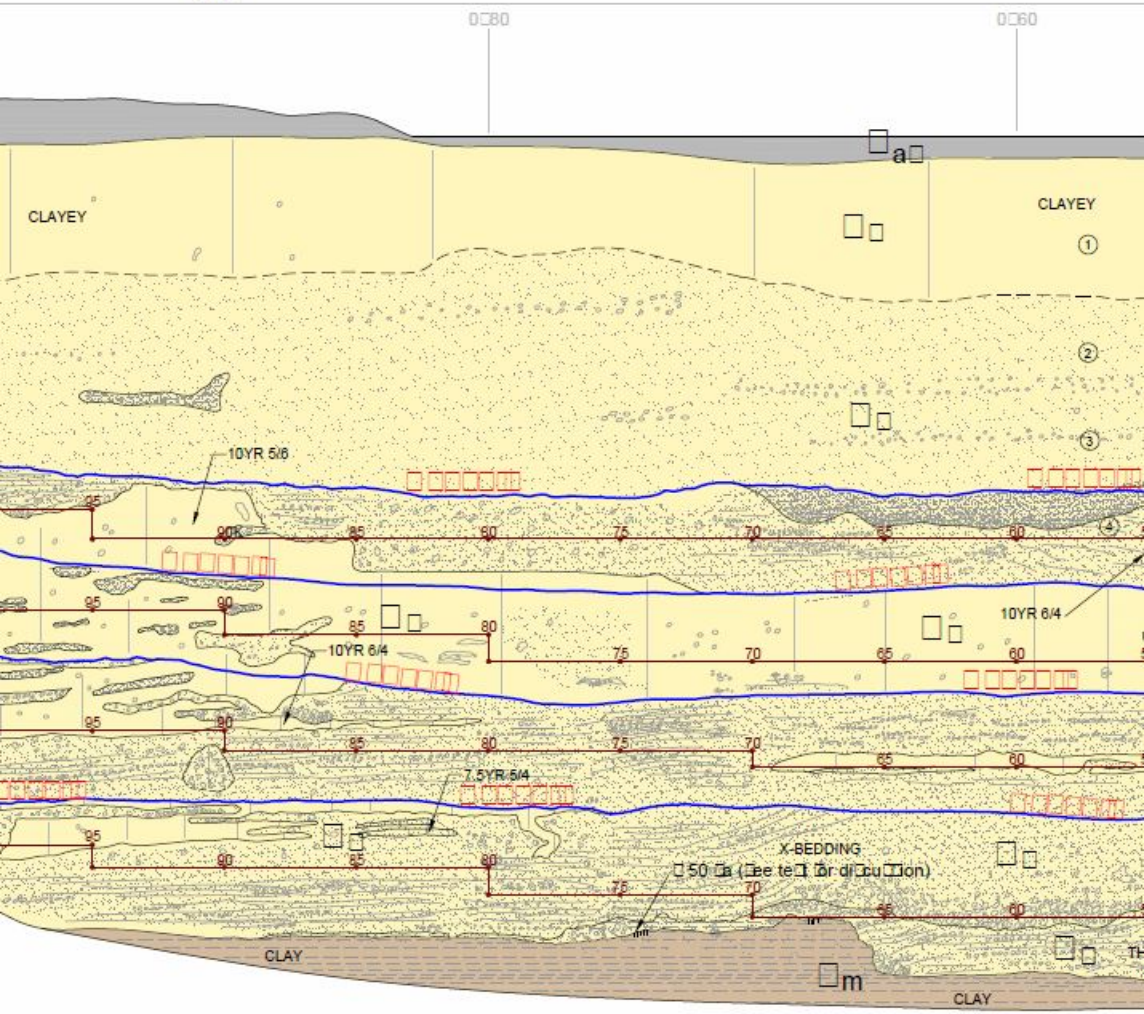
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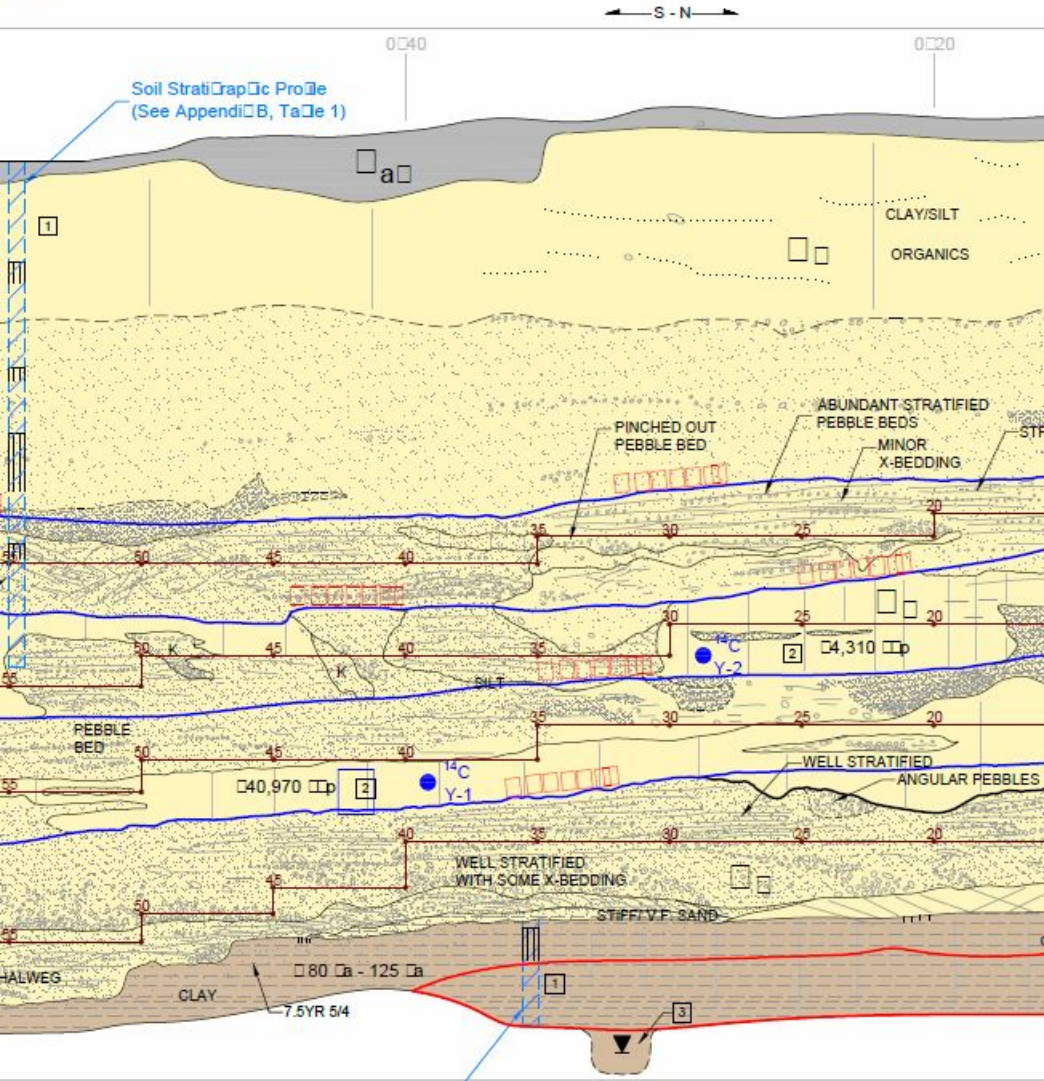

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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 14

Despite Free Internet Offers, Some Low-Income Parents Struggle To Get Kids Online For School

by Kyle Stokes in News on April 22, 2020 4:47 PM

A student receives a laptop computer for remote learning in front of L.A. Unified's Bell High School. (Frederic J. Brown/AFP via Getty Images)

Since the coronavirus struck, Tamara Solis has called four different companies offering "free" internet service. She didn't have internet at home, and her children, ages 8 and 10, need to get online to do schoolwork.

But on every call, something happened that led Solis to conclude many of these offers were not truly "free."

One company told Solis they don't serve her address; she lives in Watts. Another transferred Solis to the "sales department," so she hung up. A third company asked Solis for her Social Security number, which led her to wonder, "Why? They said it was going to be free."

Solis finally talked to her mobile phone carrier. At first, they offered her a *paid* plan. Solis talked them down to a free month, which is already up.

Being unable to access these companies' offers left Solis in tears: "I cry because it's like a lie to the people."

Before the pandemic, Solis didn't mind that her kids were without internet at home. She wanted them outside, "playing with dirt, with the dogs, with the bunnies — not too much on the tablet, not too much on YouTube."

It took the pandemic — and her children's disconnection from school because of it — to convince her she was on the wrong side of the "great big digital divide" that leaves most of the families in her neighborhood without internet.

"It's not because I want it," Solis said, "it's because we need it ... You need the internet at home."

REPORT: PARENTS STRUGGLE TO ACCESS DEALS

Since the coronavirus forced schools to move most instruction online, internet providers have promoted deals aimed at bridging this digital divide.

AT&T and Charter Spectrum, among others providers, have both announced offers for two free months of internet service. While the particulars differ, the offers generally target low-income families whose children are at particular risk of falling behind in distance learning because they lack an internet connection.

Solis is likely not the only parent struggling to access these deals, according to a report released Wednesday by the organization that runs the school Solis' children attend.

Staff of the Partnership for L.A. Schools, who posed as customers in Watts seeking to access advertised free services, were told by both AT&T and Spectrum reps that "no free trial" was available — unless they signed up for full-cost service that would begin in 60 days.

And that's if the company even offered internet at their address. Of the six providers the Partnership called, only AT&T served most of Watts' 90002 zip code. Spectrum was not available at most Watts addresses the Partnership tried.

The Partnership's Findings (p. 3)

Company	What They Promoted	What We Found
AT&T	60-day free internet access to qualifying limited income households; for continuing households the rate is $10/month.	Most callers were told that no free trial is available. For the few who were offered a free trial, they had to sign on for a $59.99/month offer after the 60 days. Low-income families are being offered a $10/month plan for 5-10 Mbps, with no free trial available. If customers cannot provide a social security number, a $99 deposit is required.
Charter Spectrum	Free Spectrum broadband and WiFi access for 60 days to households with students who do not already have a Spectrum broadband subscription.	No home internet service in most of Watts 90002 zip code. For customers where Spectrum service is offered, free trial requires them to sign on for a $54.99/month offer after the 60 days. Existing customers cannot downgrade their services.

Partnership staff posed as potential customers from Watts and made 50 calls to six different internet companies and reported their findings. Spokesmen for both AT&T and Spectrum disputed some of what the Partnership found.
View the entire document with DocumentCloud

THE COMPANIES RESPOND

Many of the report's claims perplexed spokesmen for both AT&T and Spectrum, who said their companies' offers of free- or low-cost internet are genuine.

AT&T has long offered a $5 or $10 per month service for low-income families, said spokesman Jim Kimberly. He said after the pandemic hit, AT&T expanded eligibility requirements for the service and made it free for new customers — with no disconnection fees.

Overall, the report "confuses" this offering for AT&T's standard, full-cost service, Kimberly said.

But Kimberly also said anyone looking to sign up for this discounted AT&T service has to call a different, dedicated phone number — so maybe that explains why the Partnership reported being offered full-cost service.

(**NOTE:** *There's more information on low-cost internet offers and LAUSD's device distribution at the end of this story.*)

Spectrum's spokesman Dennis Johnson also disputed the report's claim that his company is attempting to upsell potential low-income customers.

Since March 16, the company has offered two months of "free internet ... for families with school-aged children and professional educators who are not currently Spectrum Internet customers" — also with no cancellation costs.

Johnson said the report is incorrect in saying Spectrum doesn't serve Watts. He said the company's service is widely available in South and East L.A., though it's possible some apartment buildings aren't wired with their service.

More broadly, Johnson said the number of families signing up suggests that there are fewer barriers than the Partnership suggests. While he couldn't disclose exact figures, Johnson said "response to our free internet offer has been strong."

'THIS IS A PR WIN'

But the Partnership is standing by the report, saying it reflects common concerns of parents from the organization's 18 low-income L.A. Unified School District campuses in Watts, South L.A. and Boyle Heights.

A handful of parents at Partnership schools were still unaware of these offers of low-cost internet service. Even larger chunks reported long waits on the phone for service — particularly for callers requesting to speak to a customer service rep in Spanish.

Rafael Balderas, principal of Bell High School, stands between stacks of laptop computers for distribution to students amid the coronavirus pandemic on April 15, 2020. (Frederic J. Brown/AFP via Getty Images)

The Partnership also reported that AT&T requires a $99 deposit for any person signing up for service without a Social Security number — which is a barrier for families living in the U.S. without authorization. (AT&T spokesman Jim Kimberly said the company requires no such deposit on its low-income service.)

"This is a public relations win for [these companies] to announce special offers during this time," said Chase Stafford, the Partnership's director of policy and planning and the lead researcher on the project.

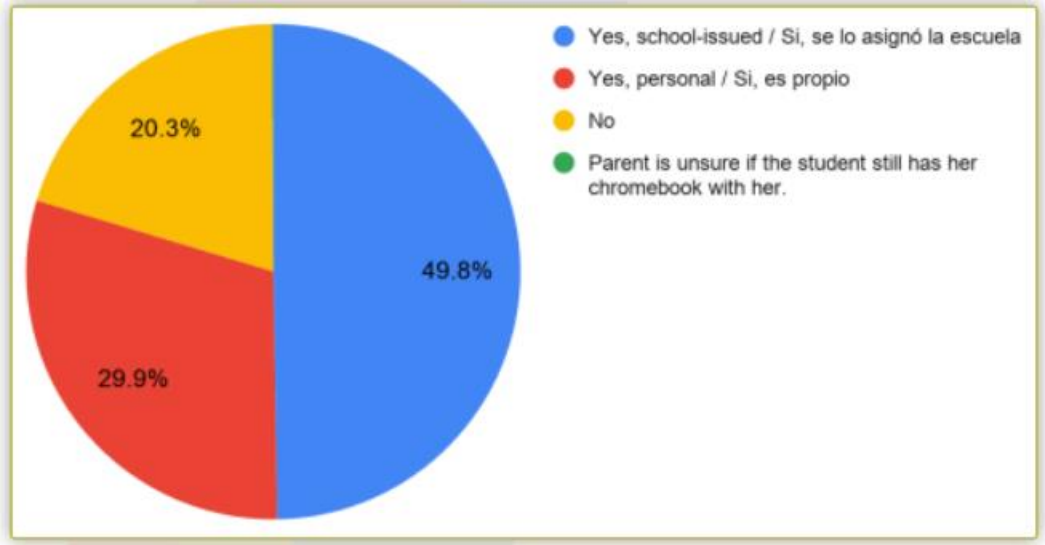
"That's great," said Stafford. "We want companies who deserve praise to get it. But we need to ensure that actual services match up to what they're saying in announcements."

'EARLY PROGRESS'

The Partnership's report mostly lauds LAUSD's efforts to close the digital divide so far: "We commend L.A. Unified's swift decision" to spend $100 million on laptop purchases and contracts with wireless carriers to distribute internet hotspots.

"We are encouraged by early progress," the report said.

'Does Your Student Have A Laptop Or Tablet To Use?' (p. 9)



The results of a survey of more than 1,000 parents at LAUSD campuses in Watts, South L.A. and Boyle Heights operated by the Partnership for L.A. Schools.
View the entire document with DocumentCloud

Of around 1,000 parents the Partnership surveyed, around half had received a school-issued laptop. Another 30% had their own device for students to use.

As of April 4, roughly 20% of parents from the Partnership's low-income schools still did not have a laptop.

Device distribution has progressed significantly since then — though on KPCC's AirTalk on Tuesday, LAUSD's Chief Academic Officer Alison Yoshimoto-Towery said that the district will likely be distributing devices through mid-May.

Earlier this week, Watts parent Tamara Solis got her hands on the device she needed: an internet hotspot provided by LAUSD. Her second grader and fourth grader should be able to access distance learning lessons now.

She's cautiously optimistic — but she doesn't know how well it will work with two students, and two devices, connected to it at the same time.

"I'm still waiting to see how it's working," she said. "I'm not going to tell you it's 100% good."

WHAT LOW-COST HOME INTERNET OPTIONS ARE AVAILABLE?

Here are a few options:

- **AT&T:** The company's Access program offers internet service at $5-10 per month for low-income families. Through April 30, the company is offering two months of Access

service for free. They've also expanded eligibility to all households enrolled in Head Start or receiving free or reduced-price meals at school. **Families can apply here or call: 855-220-5211 (in English) or 855-220-5225 (in Spanish)**. For all other households, AT&T has paused disconnections and late fees through May 13, and is also "temporarily" waiving overage fees on home internet data.

- **Charter Spectrum:** Teachers and families with school-aged children who aren't already Spectrum customers can sign up for two free months of internet service. After those 60 days, a spokesman says the company will offer a "discounted promotional price" for another 10 months. Customers can cancel at any time. Spectrum also offers low-cost service for certain qualifying low-income households. **Families can sign up here or call 844-488-8395.**
- Starting on March 20, existing **T-Mobile** customers on smartphone plans will receive an additional 20 gigabytes of data to use their phones as hotspots for the next 60 days. The company is also expanding data allowances for schools using their wireless plans.
- **L.A. Unified School District** families who need access to either a laptop or an internet hotspot — and haven't been contacted by their school — are encouraged to call the district's hotline: 213-443-1300.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 15

UNITED STATES DISTRICT COURT

for the

Central District of California

In the Matter of the Search of: Information associated with account identified as ray.sw.chan@gmail.com that is within the possession, custody, or control of Google, Inc.	)	Case No. 2:18-MJ-1881

WARRANT PURSUANT TO 18 U.S.C. § 2703

To: Any Authorized Law Enforcement Officer

An application by a federal law enforcement officer requests the production and search of the following data:

See Attachment A

The data to be produced and searched, described above, are believed to contain the following:

See Attachment B

I find that the affidavit, or any recorded testimony, establishes probable cause to produce and search the data described in Attachment A, and to seize the data described in Attachment B. Such affidavit is incorporated herein by reference.

AUTHORIZED LAW ENFORCEMENT OFFICER/S IS/ARE HEREBY COMMANDED to serve this warrant on Google, Inc. in the daytime, between the hours of 6:00 a.m. and 10:00 p.m., within 14 days from the date of its issuance.

GOOGLE, INC. IS HEREBY COMMANDED to produce the information described in Attachment A within 10 calendar days of the date of service of this order. **GOOGLE, INC. IS FURTHER COMMANDED** to comply with the further orders set forth in Attachment B, and, pursuant to 18 U.S.C. § 2705(b), shall not notify any person, including the subscriber(s) of the account/s identified in Attachment A, of the existence of this warrant.

The officer executing this warrant, or an officer present during the execution, shall prepare an inventory as required by law, and shall promptly return this warrant and the inventory to the United States Magistrate Judge on duty at the time of the return through a filing with the Clerk's Office.

AUTHORIZED LAW ENFORCEMENT OFFICER/S IS/ARE FURTHER COMMANDED to perform the search of the data provided by Google, Inc. pursuant to the procedures set forth in Attachment B.

Date and time issued: 7/20/2018 @ 1:18 pm

/ S / ALEXANDER F. MACKINNON
Judge's signature

City and State: Los Angeles, CA

Alexander F. MacKinnon, U.S. Magistrate Judge
Printed name and title

AUSA: Veronica Dragalin (x0647)

Return

Case No:	*Date and time warrant served on provider:*
2:18-MJ-01881	07/20/2018 5:00pm

Inventory made in the presence of: SA Andy Smith

Inventory of data seized:
[Please provide a description of the information produced.]

- Return record provided as downloadable link for:

ray.sw.chan@gmail.com.

Certification

I declare under penalty of perjury that I am an officer involved in the execution of this warrant, and that this inventory is correct and was returned along with the original warrant to the designated judge through a filing with the Clerk's Office.

Date: 11/27/2018

Executing officer's signature

SA Andy Smith
Printed name and title

ATTACHMENT A

PROPERTY TO BE SEARCHED

This warrant applies to information associated with the account identified as **ray.sw.chan@gmail.com** and being used by RAYMOND CHAN, that is within the possession, custody, or control of Google, Inc., a company that accepts service of legal process at its headquarters located in Mountain View, California, regardless of where such information is stored, held, or maintained.

ATTACHMENT B

ITEMS TO BE SEIZED

I. SEARCH PROCEDURE

1. The search warrant will be presented to personnel of Google, Inc. (the "PROVIDER"), who will be directed to isolate the information described in Section II below.

2. To minimize any disruption of service to third parties, the PROVIDER's employees and/or law enforcement personnel trained in the operation of computers will create an exact duplicate of the information described in Section II below.

3. The PROVIDER's employees will provide in electronic form the exact duplicate of the information described in Section II below to the law enforcement personnel specified below in Section IV.

4. With respect to contents of wire and electronic communications produced by the PROVIDER (hereafter, "content records," see Section II.10.a below), law enforcement agents and/or individuals assisting law enforcement and acting at their direction (the "search team") will examine such content records pursuant to search procedures specifically designed to identify items to be seized under this warrant. The search shall extract and seize only the specific items to be seized under this warrant (see Section III below). The search team may use forensic examination and searching tools, such as "EnCase" and "FTK" (Forensic Tool Kit), which tools may use hashing and other sophisticated techniques.

5. If the search team encounters immediately apparent contraband or other evidence of a crime outside the scope of the items to be seized, the team shall immediately discontinue its search pending further order of the Court and shall make and retain notes detailing how the contraband or other evidence of a crime was encountered, including how it was immediately apparent contraband or evidence of a crime.

6. The search team will complete its search of the content records as soon as is practicable but not to exceed 120 days from the date of receipt from the PROVIDER of the response to this warrant. The government will not search the content records beyond this 120-day period without first obtaining an extension of time order from the Court.

7. Once the search team has completed its review of the content records and created copies of the items seized pursuant to the warrant, the original production from the PROVIDER will be sealed -- and preserved by the search team for authenticity and chain of custody purposes -- until further order of the Court. Thereafter, the search team will not access the data from the sealed original production which fell outside the scope of the items to be seized absent further order of the Court.

8. The special procedures relating to digital data found in this warrant govern only the search of digital data pursuant to the authority conferred by this warrant and do not apply to any search of digital data pursuant to any other court order.

9. Pursuant to 18 U.S.C. § 2703(g) the presence of an agent is not required for service or execution of this warrant.

II. INFORMATION TO BE DISCLOSED BY THE PROVIDER

10. To the extent that the information described in Attachments A is within the possession, custody, or control of the PROVIDER, including any information that has been deleted but is still available to the PROVIDER, or has been preserved pursuant to a request made under 18 U.S.C. § 2703(f), the PROVIDER is required to disclose the following information to the government for the **TARGET ACCOUNT** listed in Attachment A:

a. All contents of all wire and electronic communications, including services such as Gmail, associated with **ray.sw.chan@gmail.com,** and limited to that which occurred on or after May 24, 2018,[1] and all contents associated with **ray.sw.chan@gmail.com,** and limited to that which occurred on or after April 1, 2013, including:

i. All records (including content records and the stored application data) pertaining to the Google Document publicly available at https://docs.google.com/document/d/1PxaIuhLMVwuJEbWJ4OpUB2i1kC3iougbLTEwjNHPjbc/edit?usp=sharing_eil&ts=5adce9d1, including logs of accounts that accessed or edited the document;

ii. All records (including content records and the stored application data) pertaining to any Google service

[1] To the extent it is not reasonably feasible for the PROVIDER to restrict any categories of records based on this date restriction (for example, because a date filter is not available for such data), the PROVIDER shall disclose those records in its possession at the time the warrant is served upon it.

associated with the **TARGET ACCOUNT**, including services such as Android, Google Play and Android Market (including payment information), Google Groups, use of Google Chrome or Google Chrome Sync (including the content of the data that is synced between different devices and the identity of such devices), Google Talk, Google Calendar, Google Docs, Google Drive, Google Services, Google+, Has Google Profile, Has Plusone, Google Photos (formerly Picasa), Tasks, iGoogle, Web History, Google Talk, Google Voice, and Hangouts;

iii. All records (including content records and the stored application data) associated with the **TARGET ACCOUNT** pertaining to Location History and Google Maps, including custom maps, changes and edits to public places, starred places, private labels of locations, and saved locations.

b. All other records and information, including:

i. All records related to authenticating the user of the **TARGET ACCOUNT**, including use of two-factor authentication or App passwords used to allow access via a mobile device and the identity of those devices accessing the **TARGET ACCOUNT**;

ii. All records relating to any settings applied by the user of the **TARGET ACCOUNT** to cause a message to expire, to require a recipient to insert a password value to read a message, to control a recipient's ability to forward a message, or to retract access to a message already sent.

III. INFORMATION TO BE SEIZED BY THE GOVERNMENT

11. For the **TARGET ACCOUNT** listed in Attachment A, the search team may seize:

a. All information described above in Section II.10.a that constitutes evidence, contraband, fruits, or instrumentalities of violations of 18 U.S.C. §§ 371 (Conspiracy), 666 (Bribery and Kickbacks Concerning Federal Funds), 1341, 1343, and 1346 (Deprivation of Honest Services), 1951 (Extortion), and 1956 (Money Laundering), and 31 U.S.C. § 5324(a)(3) (Structuring a Financial Transaction to Evade a Reporting Obligation), those violations involving RAYMOND CHAN, JOSE HUIZAR, GEORGE ESPARZA, WEI HUANG, RICKY ZHENG, GEORGE CHIANG, DERON WILLIAMS, FUER YUAN, YAN YAN, CURREN PRICE, JOEL JACINTO, AVE JACINTO, and SHAWN KUK, occurring after April 1, 2013, namely:

i. Information relating to who created, accessed, or used the TARGET ACCOUNT, including records about their identities and whereabouts.

ii. All records relating to JOSE HUIZAR, GEORGE ESPARZA, WEI HUANG, RICKY ZHENG, GEORGE CHIANG, DERON WILLIAMS, YAN YAN, CURREN PRICE, MASON SITU, LINCOLN LEE, JOEL JACINTO, AVE JACINTO, SHAWN KUK, SHENZHEN NEW WORLD GROUP, SHENZHEN NEW WORLD INVESTMENT, INC., HAZENS, the LA Hotel Downtown, the Sheraton Universal Hotel, and Luxe Hotel.

iii. All records relating to Las Vegas, including any receipts, reservation confirmations, flight itineraries, photographs, and bank records relating to Southwest Airlines, the Palazzo, Caesar's Palace, the Wynn, and the Cosmopolitan.

iv. All financial records relating to JOSE HUIZAR, his mother (ISIDRA HUIZAR), and his brother (SALVADOR HUIZAR), and their respective bank accounts including, but not limited to, those ending in #0843, #2634, #3900 and #3208.

v. All records relating to development projects in and around Los Angeles that relate to foreign investors to include, but not limited to, HAZENS, GREENLAND, OCEANWIDE and other foreign investors not yet identified.

vi. All records relating to Salesian High School Gala, Proposition HHH, El Grito, and other fundraising expeditions/campaign contributions.

vii. All records relating to projects in and around Los Angeles, in which HUIZAR or HUIZAR's staff, KUK, ESPARZA, JACINTO, CHAN, CHIANG, or WILLIAMS assisted in acquiring permits, licenses or other official city processes.

viii. All records related to meetings, event invitations, dinners, fundraising events, and community events including radar screens.

ix. All records related to La Vue, Ho Kee Café, and other meeting locations being utilized by the violators.

b. All records and information described above in Section II.10.b.

IV. PROVIDER PROCEDURES

12. IT IS ORDERED that the PROVIDER shall deliver the information set forth in Section II within 10 days of the service of this warrant. The PROVIDER shall send such

information to:

SA Andrew Civetti
11000 Wilshire Blvd.
Los Angeles, CA 90024
310-996-4564 (Phone) 310-996-3764 (Fax)
ACivetti@fbi.gov

13. IT IS FURTHER ORDERED that the PROVIDER shall provide the name and contact information for all employees who conduct the search and produce the records responsive to this warrant.

14. IT IS FURTHER ORDERED, pursuant to 18 U.S.C. § 2705(b), that the PROVIDER shall not notify any person, including the subscriber(s) of the account identified in Attachment A, of the existence of the warrant, until further order of the Court, until written notice is provided by the United States Attorney's Office that nondisclosure is no longer required, or until one year from the date the PROVIDER complies with this warrant or such later date as may be set by the Court upon application for an extension by the United States. Upon expiration of this order, at least ten business days prior to disclosing the existence of the warrant, the PROVIDER shall notify the agent identified in paragraph 12 above of its intent to so notify.

FILED
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CLERK U.S. DISTRICT COURT
CENTRAL DIST. OF CALIF.
LOS ANGELES
BY:

UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

October 2019 Grand Jury

UNITED STATES OF AMERICA, Plaintiff, v. MITCHELL ENGLANDER, Defendant.	CR No. 20CR00035-JFW I N D I C T M E N T [18 U.S.C. § 1001(a)(1): Falsifying Material Facts; 18 U.S.C. § 1001(a)(2): Making False Statements; 18 U.S.C. § 1512(b)(3): Tampering with a Witness, Victim, or Informant and Obstruction of Justice]

The Grand Jury charges:

INTRODUCTORY ALLEGATIONS

At times relevant to this Indictment:

A. THE CORRUPTION INVESTIGATION INTO THE LOS ANGELES CITY COUNCIL

1. The Federal Bureau of Investigation ("FBI") in Los Angeles and the United States Attorney's Office ("USAO") for the Central District of California were conducting a federal criminal investigation into public corruption throughout the City of Los Angeles (the "City") related to multiple suspected "pay-to-play" schemes (the "Federal Investigation"). The Federal Investigation involved multiple City officials, developers, investors, consultants,

lobbyists, and other close associates working in furtherance of the potentially illegal schemes.

B. RELEVANT PERSONS AND ENTITIES

2. All legislative power in the City was vested in the City Council and was exercised by ordinance, subject to a veto by the Mayor. The City was split into fifteen City Council Districts ("CD"s), which covered different geographic areas. The City Council was composed of members who were elected from each district. City Councilmembers and their staff members were agents of the City of Los Angeles, a government that received more than $10,000 per fiscal year in funds from the United States in the form of grants, contracts, subsidies, loans, guarantees, insurance, and other forms of federal assistance.

3. Defendant MITCHELL ENGLANDER was the councilmember for CD 12 in the San Fernando Valley from 2011 until he resigned on December 31, 2018 with almost two years remaining on his term. Defendant ENGLANDER served as the Council President Pro-Tempore and was on the Planning and Land Use Management ("PLUM") Committee until his resignation from City Council in December 2018. While a councilmember, defendant ENGLANDER also served on other various City committees, including as the Chair of the Public Safety Committee, and member of the Budget and Finance Committee. Defendant ENGLANDER was also a reserve member of the Los Angeles Police Department.

4. Under the California Political Reform Act, Cal. Gov. Code Sections 81000, et seq., every elected official and public employee who made or influenced governmental decisions was required to submit a Statement of Economic Interest, also known as the Form 700. The Form 700 was filed annually in April for the previous year. The Form

700 was designed to provide transparency and accountability, including by: (1) providing the public with information about an official's personal financial interests to determine whether officials were making decisions free from conflicts of interest; and (2) reminding the public official of potential conflicts of interest so the official could abstain from making or participating in governmental decisions that would raise those conflicts of interest.

5. Businessperson A operated businesses in the City relating to major development projects. Defendant ENGLANDER first met Businessperson A in or around 2016. Businessperson A was seeking to increase his business opportunities in the City. Among the ways Businessperson A would accomplish this was to provide certain elected and other public officials with cash payments, gambling chips, hotel rooms, luxury outings, escort services, and expensive meals.

6. City Staffer A was City Councilmember A's special assistant from approximately June 2013 until approximately January 2018.

7. City Staffer B was a high-ranking staff member for defendant ENGLANDER until approximately June 2017.

8. Lobbyist A and Lobbyist B were lobbyists registered with the City. Lobbyist B was also a close associate of defendant ENGLANDER.

9. Developer A was a real estate developer and architect in the City who operated his own architectural, planning, and development firm.

10. Developer B was the chief executive officer and owner of a construction company in the City.

11. Confide was a company that provided an end-to-end encrypted messaging application. On its website, Confide boasted that it "is

known for its self-destructing messaging system that deletes messages immediately after reading."

C. BACKGROUND ON CITY PROCESSES

12. Within the City, large-scale development projects required a series of applications and approvals prior to, during, and after construction. These applications and approvals occurred in various City departments, including the City Council, the PLUM Committee, the Economic Development Committee, the Los Angeles Planning Department, the Los Angeles Department of Building and Safety, the Area Planning Commission, the City Planning Commission, and the Mayor's Office.

13. Each part of the City approval process required official actions by public officials. These included entitlements, variances, general plan amendments, subsidies, incentives, public benefits, scheduling agendas for the various committees, and overall approvals. The process allowed for public hearings, feasibility studies, environmental impact reports, and other steps in the life of development projects.

14. Even for projects that were not going through the City approval process, City officials could benefit, or take adverse action against, a project by advocating for, pressuring, or seeking to influence other City officials, departments, business owners, and stakeholders.

D. FINANCIAL BENEFITS FROM BUSINESSPERSON A TO DEFENDANT ENGLANDER AND OTHERS

June 2017 Las Vegas Trip

15. On or about June 1, 2017, defendant ENGLANDER traveled to Las Vegas with, among others, Businessperson A, City Staffer A, City Staffer B, Lobbyist A, and Developer A (the "June 2017 Las Vegas

trip"). Businessperson A provided defendant ENGLANDER, City Staffer A, City Staffer B, and others with hotel rooms at a resort and casino (the "Resort and Casino"). Specifically, Businessperson A provided them use of Businessperson A's "comps," which were hotel-provided amenities ordinarily limited to VIP customers who, like Businessperson A, were typically provided such status because of the amount of money that customer had provided the hotel in the past and in order to incentivize further business. Businessperson A also provided the group transportation from the Las Vegas airport to the Resort and Casino.

16. On or about June 1, 2017, defendant ENGLANDER accepted an envelope containing $10,000 in cash from Businessperson A in the Resort and Casino's bathroom.

17. On or about June 1, 2017, Businessperson A, in front of the group, provided defendant ENGLANDER and the rest of the group casino chips with which to gamble. Businessperson A provided defendant ENGLANDER approximately $1,000 in casino chips. After defendant ENGLANDER finished gambling, he, in front of the group and in view of the casino surveillance cameras, returned the casino chips to Businessperson A.

18. On or about June 1, 2017, Businessperson A provided dinner and drinks for defendant ENGLANDER, City Staffer A, City Staffer B, Lobbyist A, Developer A, and others at a restaurant inside the Resort and Casino. Businessperson A was charged approximately $2,481 for the dinner and drinks for the group.

19. On or about the evening of June 1, 2017 and into the early morning of June 2, 2017, defendant ENGLANDER, Businessperson A, City Staffer A, City Staffer B, Lobbyist A, and Developer A took a

limousine provided by the Resort and Casino to a nightclub at another hotel (the "nightclub"). At the nightclub, Businessperson A paid approximately $24,000 for bottle service and alcohol for defendant ENGLANDER, Businessperson A, City Staffer A, City Staffer B, Lobbyist A, Developer A, and others. Developer A paid another approximately $10,000 for bottle service and alcohol for the group and others at the nightclub.

20. After the group returned to the Resort and Casino in the early morning of June 2, 2017, Businessperson A told defendant ENGLANDER that Businessperson A was going to order female escorts for the group to come to their hotel. When two escorts arrived to the Resort and Casino, Businessperson A paid approximately $300-400 in cash for their services and instructed one of the escorts to go to defendant ENGLANDER's hotel room to provide him with services.

21. On or about June 3, 2017, the day after the Las Vegas trip, City Staffer B sent Businessperson A a text message thanking Businessperson A for the enjoyable Las Vegas trip. The text message stated nothing about City Staffer B or defendant ENGLANDER reimbursing Businessperson A for any portion of the Las Vegas trip.

Palm Springs Event and Lunch

22. From on or about June 10 through June 12, 2017, defendant ENGLANDER attended a golf tournament at the Morongo Casino Resort and Spa in Palm Springs, California (the "Palm Springs event"). On or about June 12, 2017, at the Palm Springs event, defendant ENGLANDER accepted an envelope containing $5,000 in cash from Businessperson A in a bathroom.

23. On June 19, 2017, approximately one week after the Palm Springs event, defendant ENGLANDER, Businessperson A, and Developer B

had lunch so that defendant ENGLANDER would introduce Businessperson A and his company and product to Developer B.

24. After the lunch on June 19, 2017, Developer B sent defendant ENGLANDER and Businessperson A an email thanking Businessperson A for lunch and seeking to set up a further meeting and "presentation" from Businessperson A.

E. THE INVESTIGATION OF BENEFITS RECEIVED BY DEFENDANT ENGLANDER FROM BUSINESSPERSON A

25. Beginning on or about June 5, 2017, based on information obtained in a judicially authorized intercepted phone call referencing benefits received by public officials from Businessperson A, the FBI and USAO began specifically investigating whether Businessperson A had provided personal benefits to defendant ENGLANDER, City Staffer A, Councilmember A, or City Staffer B, and whether those public officials, including defendant ENGLANDER, had accepted such personal benefits.

26. On July 11, 2017, the FBI contacted City Staffer B and informed him that it sought a voluntary interview with him regarding an ongoing investigation. On July 13, 2017, the FBI contacted City Staffer B again and informed him that it sought a voluntary interview with him regarding an ongoing investigation.

27. On July 19, 2017, the FBI and USAO interviewed Businessperson A, with Businessperson A's counsel present, regarding the Federal Investigation, including the 2017 Las Vegas trip. On or about August 10, 2017, Businessperson A began cooperating with the FBI and USAO in the Federal Investigation.

28. On August 16, 2017, the FBI and USAO interviewed City Staffer B, with City Staffer B's counsel present, regarding the Federal Investigation, including the 2017 Las Vegas trip.

29. The Introductory Allegations are incorporated into each count of this Indictment.

COUNT ONE

[18 U.S.C. § 1001(a)(1)]

A. SCHEME TO FALSIFY AND CONCEAL MATERIAL FACTS

30. From in or about August 2017, to on or about December 31, 2018, in Los Angeles County, within the Central District of California, and elsewhere, in a matter within the jurisdiction of the executive branch of the government of the United States, namely, the USAO and FBI, defendant ENGLANDER knowingly and willfully falsified, concealed, and covered up by trick, scheme, and device material facts, namely that:

a. Defendant ENGLANDER had accepted from Businessperson A items of value, such as cash payments, escort services, hotel rooms, luxury outings, and expensive meals;

b. Defendant ENGLANDER had attempted to coordinate statements he made to the FBI and USAO with Businessperson A; and

c. Defendant ENGLANDER had counseled Businessperson A to lie to and mislead the FBI and USAO.

B. OPERATION OF THE SCHEME

31. Defendant ENGLANDER carried out the trick, scheme, and device, in substance, by conducting an obstruction and witness tampering campaign in the following manner:

a. After learning about the Federal Investigation, in or around August 2017, defendant ENGLANDER privately sent an encrypted message to Businessperson A via Confide. Defendant ENGLANDER stated in his message that he wanted to reimburse Businessperson A for portions of the June 2017 Las Vegas trip.

b. After the FBI contacted defendant ENGLANDER on or about September 1, 2017, to seek a voluntary interview with him

regarding an ongoing investigation, defendant ENGLANDER sent a check payable to Businessperson A that made it appear as if defendant ENGLANDER had written the check to Businessperson A to reimburse him for certain expenses related to their Las Vegas trip prior to the FBI asking to interview defendant ENGLANDER and prior to the FBI interviewing City Staffer B. On September 14, 2017, Businessperson A received a FedEx package containing a $442 check (check number 4387) from defendant ENGLANDER payable to Businessperson A that bore a date of August 4, 2017. The package also contained a second $442 check (check number 1095) from City Staffer B payable to Businessperson A, which also bore a date of August 4, 2017. A note included in the package from defendant ENGLANDER indicated the checks were for "Vegas expenses."

c. On October 4, 2017, defendant ENGLANDER met Businessperson A, who was acting at the direction of law enforcement, for lunch in Downtown Los Angeles. During the lunch, defendant ENGLANDER and Businessperson A discussed the June 2017 Las Vegas trip and the Federal Investigation, including that Businessperson A had been interviewed and their understanding that City Staffer A and City Staffer B also had been interviewed by the FBI. Defendant ENGLANDER told Businessperson A that he had an upcoming interview with the FBI; he further stated that City Staffer B told defendant ENGLANDER to tell the FBI that defendant ENGLANDER had received casino chips from Businessperson A, but that defendant ENGLANDER had returned those chips after gambling. Defendant ENGLANDER agreed to call Businessperson A after defendant ENGLANDER's interview with the FBI.

d. On October 19, 2017, defendant ENGLANDER, with defense counsel present, was interviewed by the FBI and USAO regarding the

Federal Investigation, including the 2017 Las Vegas trip and his interactions with Businessperson A (the "first interview"). Defendant ENGLANDER declined to have the FBI record the interview. During this interview, after being advised it was a crime to lie to the federal government, defendant ENGLANDER falsely stated on multiple occasions that, other than his lawyers and his wife, defendant ENGLANDER had not informed anyone, including Businessperson A, about his upcoming interview with the FBI.

e. On January 31, 2018, Businessperson A, acting at the direction of law enforcement, contacted defendant ENGLANDER via Confide. Specifically, Businessperson A wrote: "Hi Councilman, I got invite for your Feb/06th event, looking forward to seeing you, btw, my attorney got call from FBI asking to follow up about the check." Defendant ENGLANDER responded: "Fantastic. See you then. I got a call too. Very stupid. They are waiting [sic] their time with this."

f. On January 31, 2018 and February 1, 2018, defendant ENGLANDER and Businessperson A, who was acting at the direction of law enforcement, discussed the Federal Investigation via Confide. During this exchange, defendant ENGLANDER asked: "What exactly are they asking?" After Businessperson A stated that the FBI was interested in the Las Vegas reimbursement checks, Businessperson A wrote: "If we talk about FBI stuff should [be] in person." Defendant ENGLANDER responded: "That's why I suggested a different phone number." Defendant ENGLANDER then provided a different phone number, and Businessperson A agreed to call that new phone number later that evening.

g. On February 1, 2018, Businessperson A, acting at the direction of law enforcement, left a voicemail message for defendant

ENGLANDER on the new phone number defendant ENGLANDER had provided to Businessperson A.

h. Between February 2 and February 5, 2018, defendant ENGLANDER and Businessperson A, who was acting at the direction of law enforcement, exchanged messages via Confide. During this exchange, they agreed to discuss the Federal Investigation at defendant ENGLANDER's fundraiser on February 6, 2018.

i. During the fundraiser on February 6, 2018, defendant ENGLANDER and Businessperson A, who was acting at the direction of law enforcement, had a private conversation during which they discussed the Federal Investigation. During this conversation:

i. Defendant ENGLANDER instructed Businessperson A to falsely inform the FBI that defendant ENGLANDER and Businessperson A did not talk about their respective FBI interviews. Specifically, defendant ENGLANDER told Businessperson A: "you and I have never had a conversation. . . . They are going to ask."

ii. Defendant ENGLANDER instructed Businessperson A how to answer certain questions from the FBI, including: "you should just say 'I don't know.'"

iii. Defendant ENGLANDER instructed Businessperson A to falsely state that defendant ENGLANDER had repeatedly attempted to reimburse Businessperson A for defendant ENGLANDER's hotel room and dinner in Las Vegas.

iv. Defendant ENGLANDER told Businessperson A not to tell the FBI anything about Businessperson A providing escort services to defendant ENGLANDER. Specifically, regarding the "massage lady," defendant ENGLANDER instructed Businessperson A: "Don't say it. . . . Don't mention. . . . No, no, don't mention it."

v. Defendant ENGLANDER agreed to meet Businessperson A after defendant ENGLANDER's FBI interview to discuss the interview.

j. On February 7, 2018, at approximately 8:24 a.m. and 10:10 a.m., prior to defendant ENGLANDER's interview with the FBI that day, defendant ENGLANDER attempted to call Businessperson A via WhatsApp, an encrypted end-to-end messaging service that can also be used for phone calls. In response, Businessperson A, at the direction of law enforcement, sent a message via WhatsApp to defendant ENGLANDER, writing: "sorry miss your call, but may not good ideal [sic] talk on the phone." Defendant ENGLANDER responded: "Just a quick question." Businessperson A then called defendant ENGLANDER via WhatsApp. During the conversation, defendant ENGLANDER asked Businessperson A whether Businessperson A had told the FBI about the use of escorts during the June 2017 Las Vegas trip. Businessperson A stated that he had not, to which defendant ENGLANDER responded: "[T]hat's what I wanted to confirm. . . . I appreciate it."

k. On February 7, 2018, defendant ENGLANDER, with counsel present, was interviewed by the FBI and the USAO regarding the Federal Investigation, including the June 2017 Las Vegas trip and interactions with Businessperson A (the "second interview"). Defendant ENGLANDER declined to have the FBI record the interview. During the interview, after being advised it was a crime to lie to the federal government, defendant ENGLANDER made the following false statements:

i. Defendant ENGLANDER falsely stated on multiple occasions that he was unaware that Businessperson A intended to attend defendant ENGLANDER's fundraiser the prior night.

ii. Defendant ENGLANDER falsely stated that he and Businessperson A did not discuss the FBI, the Federal Investigation, or defendant ENGLANDER's upcoming FBI interview during the fundraiser.

iii. Defendant ENGLANDER falsely stated that he had never been told the amount of money Businessperson A paid at the nightclub for the bottle service and alcohol for the group during their June 2017 Las Vegas trip.

iv. Defendant ENGLANDER falsely stated that Businessperson A did not provide defendant ENGLANDER benefits other than a hotel room, dinner, and beverage service during their June 2017 Las Vegas trip.

v. Defendant ENGLANDER falsely stated he had no plans to discuss his FBI interview with anyone after it occurred.

l. From February 8 to February 12, 2018, defendant ENGLANDER and Businessperson A, who was acting at the direction of law enforcement, exchanged messages via Confide. Defendant ENGLANDER, under the pretense of helping Businessperson A obtain business, arranged for the two to meet on February 12, 2018. On February 12, 2018, defendant ENGLANDER called Businessperson A to change the time and location of their meeting set for that day.

m. On February 12, 2018, defendant ENGLANDER met with Businessperson A in defendant ENGLANDER's car in Downtown Los Angeles. Once Businessperson A entered defendant ENGLANDER's car, defendant ENGLANDER told Businessperson A to "hold on," and turned on the stereo to play music at a very loud volume in an effort to obstruct possible listening devices. Defendant ENGLANDER drove in circles and did not go to any specific location. During this time,

defendant ENGLANDER and Businessperson A discussed the Federal Investigation and their FBI interviews. Among other things:

i. Defendant ENGLANDER stated he did not "want to be out there in public" for their discussion.

ii. Defendant ENGLANDER repeatedly instructed Businessperson A to lie to the FBI and tell the FBI that he and Businessperson A did not have a conversation about their FBI interviews. Specifically, defendant ENGLANDER told Businessperson A that the FBI "asked if you and I ever talked at all about the meeting with them. We never had a conversation." Defendant ENGLANDER further instructed Businessperson A regarding how to answer this topic of the two meeting to discuss the FBI interviews: "We never did, never did. . . . You don't mention it at all."

iii. Defendant ENGLANDER told Businessperson A what questions the FBI would ask Businessperson A and how to answer them. Specifically, defendant ENGLANDER stated, the FBI was going to "ask 'Did I ever contact you about how much we needed to reimbursement [sic].' Just say, say, 'I don't remember. We were trying to get together for a long time and he's busy and I'm busy, blah, blah.'"

iv. Defendant ENGLANDER repeatedly instructed Businessperson A how to respond to FBI questions about the use of escorts during the June 2017 Las Vegas trip. Specifically, defendant ENGLANDER instructed Businessperson A to falsely tell the FBI: "if they check your phone records and called, just go, 'I called just to see how much money.' . . . . Say, 'I was so drunk I don't remember calling.' . . . . Or, 'I don't remember, maybe I dialed the wrong number, I don't know, I don't remember.' . . . . No, just say, 'I don't remember.'"

v. Defendant ENGLANDER instructed Businessperson A to lie about their use of Confide. Specifically, defendant ENGLANDER instructed Businessperson A: "No, no, we never had discussions. Nothing ever about Confide."

vi. Defendant ENGLANDER instructed Businessperson A to lie to the FBI about their conversation at the fundraiser. Specifically, defendant ENGLANDER instructed Businessperson A to say Businessperson A "shook my hand and said hello. That was it."

vii. Defendant ENGLANDER instructed Businessperson A that, if the FBI had checked their phone records regarding escort services during the June 2017 Las Vegas trip, to falsely tell the FBI: "'No, I didn't hire anybody.'"

viii. At the conclusion of the conversation, defendant ENGLANDER agreed to introduce Businessperson A to defendant ENGLANDER's builder "friend," and defendant ENGLANDER agreed to tour Businessperson A's showroom.

n. On or about April 2, 2018, defendant ENGLANDER reported $1,202 worth of gifts/benefits on his Form 700 for the year 2017, but did not report, among other things, the $15,000 cash he received from Businessperson A as a gift or benefit.

o. On November 20, 2018, defendant ENGLANDER met with Businessperson A, who was acting at the direction of law enforcement. During this meeting, they discussed recent FBI actions regarding the Federal Investigation. This discussion included:

i. When Businessperson A referred to "the cash" that Businessperson A had provided to defendant ENGLANDER in the restroom in Las Vegas on or about June 1, 2017, defendant ENGLANDER stated, "I'm not going to say anything" to the FBI about it.

ii. Defendant ENGLANDER agreed that Businessperson A should omit that they talked about the content of their FBI interviews during their meeting that day and instead falsely state the discussion was about defendant ENGLANDER's new job. Specifically, defendant ENGLANDER told Businessperson A: "They're gonna say, 'When was the last time you talked [with defendant ENGLANDER]?'" Businessperson A responded: "I tell them the truth, we were eating lunch." Defendant ENGLANDER then stated: "I get it, I get it. Just catch up. . . . [A]bout the new job."

p. On December 31, 2018, defendant ENGLANDER, with defense counsel present, was interviewed by the FBI and USAO regarding the Federal Investigation, including the June 2017 Las Vegas trip and interactions with Businessperson A (the "third interview"). Defendant ENGLANDER declined to have the FBI record the interview. During the third interview, after being advised that lying to the federal government was a crime, defendant ENGLANDER made the following false statements:

i. When asked whether he received any benefits other than casino chips (which he paid back), dinners, and a hotel room, defendant ENGLANDER falsely responded, "Not that I recall."

ii. Defendant ENGLANDER falsely stated that Businessperson A never provided cash payments to defendant ENGLANDER.

iii. Defendant ENGLANDER falsely stated that he told Businessperson A to "share everything, be transparent, and share everything" with the FBI.

iv. Defendant ENGLANDER falsely stated that he could not recall if he had ever used Confide at all or, if he had, with whom he had used it.

COUNT TWO

[18 U.S.C. § 1001(a)(2)]

32. On or about October 19, 2017, in Los Angeles County, within the Central District of California, in a matter within the jurisdiction of the executive branch of the government of the United States, namely, the FBI and USAO, defendant MITCHELL ENGLANDER knowingly and willfully made materially false statements and representations to the FBI and USAO knowing that these statements and representations were untrue. Specifically, on multiple occasions, defendant ENGLANDER stated that, other than his lawyers and his wife, defendant ENGLANDER had not informed anyone, including Businessperson A, about his upcoming interview with the FBI. In fact, as defendant ENGLANDER knew, on October 4, 2017, defendant ENGLANDER had repeatedly informed Businessperson A about his upcoming interview with the FBI.

COUNT THREE

[18 U.S.C. § 1512(b)(3)]

33. On or about February 6, 2018, in Los Angeles County, within the Central District of California, defendant MITCHELL ENGLANDER, knowingly and with the intent to hinder, delay, and prevent the communication to law enforcement officers of information relating to the commission and possible commission of Federal offenses, namely: federal program bribery, in violation of Title 18, United States Code, Section 666; mail and wire fraud, in violation of Title 18, United States Code, Sections 1341 and 1343; and making false statements, in violation of Title 18, United States Code, Section 1001, attempted to corruptly persuade Businessperson A by instructing Businessperson A to provide false and misleading information and omit relevant information during Businessperson A's interview with the FBI and USAO, including, but not limited to, instructing Businessperson A to:

a. falsely state that defendant ENGLANDER and Businessperson A did not discuss the content of their FBI interviews with each other;

b. falsely state that Businessperson A did not know facts relevant to the Federal Investigation that Businessperson A in fact knew;

c. falsely state that defendant ENGLANDER had repeatedly attempted to reimburse Businessperson A for defendant ENGLANDER's hotel room and dinner in Las Vegas; and

d. omit that defendant ENGLANDER and others had sought to utilize and had utilized a female escort or "massage lady" during the June 2017 Las Vegas trip.

COUNT FOUR

[18 U.S.C. § 1001(a)(2)]

34. On or about February 7, 2018, in Los Angeles County, within the Central District of California, in a matter within the jurisdiction of the executive branch of the government of the United States, namely, the USAO and FBI, defendant MITCHELL ENGLANDER knowingly and willfully made the following materially false statements and representations to the FBI and USAO knowing that these statements and representations were untrue:

a. Defendant ENGLANDER falsely stated that he was unaware that Businessperson A intended to attend defendant ENGLANDER's fundraiser the prior night. In fact, as defendant ENGLANDER knew, on January 31, 2018 and February 5, 2018, via Confide conversations, defendant ENGLANDER and Businessperson A had confirmed that Businessperson A would attend the fundraiser.

b. Defendant ENGLANDER falsely stated that he and Businessperson A did not discuss, at the fundraiser or any other time, the FBI, the Federal Investigation, or defendant ENGLANDER's second interview. In fact, as defendant ENGLANDER knew, the day prior to defendant ENGLANDER's second interview, he and Businessperson A had discussed the FBI, the Federal Investigation, and defendant ENGLANDER's second interview, including what questions to expect, what to say, and what not to say during upcoming FBI interviews. Moreover, immediately prior to defendant ENGLANDER's interview that day, defendant ENGLANDER reached out to Businessperson A and spoke about the FBI and USAO interviews.

c. Defendant ENGLANDER falsely stated that he had never been told by Businessperson A the amount of money Businessperson A

paid at the nightclub for the bottle service and alcohol for the group during their June 2017 Las Vegas trip. In fact, as defendant ENGLANDER knew, the day prior to defendant ENGLANDER's second interview, Businessperson A told defendant ENGLANDER that he had spent between approximately $20,000 and $25,000 at the nightclub for the group.

d. Defendant ENGLANDER falsely stated that Businessperson A did not provide defendant ENGLANDER benefits other than a hotel room, dinner, and beverage service during their Las Vegas trip. In fact, as defendant ENGLANDER knew, Businessperson A did provide defendant ENGLANDER with the services of a female escort or "massage lady" during their Las Vegas trip and, the day prior to defendant ENGLANDER's second interview, the two had repeatedly discussed that topic. Moreover, immediately prior to defendant ENGLANDER's interview that day, defendant ENGLANDER reached out to Businessperson A and spoke about escorts.

e. Defendant ENGLANDER falsely stated that he did not instruct anyone, including Businessperson A, what to say to the FBI. In fact, as defendant ENGLANDER knew, the day prior to defendant ENGLANDER's second interview, he told Businessperson A, what questions to expect, what to say, and what not to say during upcoming FBI interviews.

f. Defendant ENGLANDER falsely stated that, other than his lawyers and his wife, he had not informed anyone about his second interview. In fact, as defendant ENGLANDER knew, on February 6, 2018, defendant ENGLANDER had repeatedly informed Businessperson A about defendant ENGLANDER's second interview.

g. Defendant ENGLANDER falsely stated that had no plans to discuss his second interview with anyone after it occurred. In fact, as defendant ENGLANDER knew, the day prior to defendant ENGLANDER's second interview, he planned to meet with Businessperson A to discuss defendant ENGLANDER's second interview after it occurred.

COUNT FIVE

[18 U.S.C. § 1512(b)(3)]

35. On or about February 12, 2018, in Los Angeles County, within the Central District of California, defendant MITCHELL ENGLANDER, knowingly and with the intent to hinder, delay, and prevent the communication to law enforcement officers of information relating to the commission and possible commission of Federal offenses, namely: federal program bribery, in violation of Title 18, United States Code, Section 666; mail and wire fraud, in violation of Title 18, United States Code, Sections 1341 and 1343; and making false statements, in violation of Title 18, United States Code, Section 1001, attempted to corruptly persuade Businessperson A to provide false and misleading information and omit relevant information during Businessperson A's interview with the FBI and USAO, including, but not limited to, instructing Businessperson A to:

a. falsely state that defendant ENGLANDER and Businessperson A did not discuss the content of their FBI interviews with each other;

b. falsely state that defendant ENGLANDER had repeatedly attempted to reimburse Businessperson A for defendant ENGLANDER's hotel room and dinner in Las Vegas;

c. falsely state that Businessperson A did "not remember" relevant facts that Businessperson A in fact remembered;

d. falsely state the circumstances around Businessperson A providing the services of a female escort or "massage lady" to defendant ENGLANDER and others during the June 2017 Las Vegas trip; and

e. omit any information about their use of Confide.

COUNT SIX

[18 U.S.C. § 1512(b)(3)]

36. On or about November 20, 2018, in Los Angeles County, within the Central District of California, defendant MITCHELL ENGLANDER, knowingly and with the intent to hinder, delay, and prevent the communication to law enforcement officers of information relating to the commission and possible commission of Federal offenses, namely, federal program bribery, in violation of Title 18, United States Code, Section 666; mail and wire fraud, in violation of Title 18, United States Code, Sections 1341 and 1343; and making false statements, in violation of Title 18, United States Code, Section 1001, attempted to corruptly persuade Businessperson A by encouraging Businessperson A to provide false and misleading information and omit relevant information during Businessperson A's interview with the USAO and FBI, including, but not limited to, by agreeing that Businessperson A should:

a. omit that defendant ENGLANDER had ever received cash from Businessperson A; and

b. falsely state that defendant ENGLANDER and Businessperson A had not discussed the FBI during their meeting that day.

COUNT SEVEN

[18 U.S.C. § 1001(a)(2)]

37. On or about December 31, 2018, in Los Angeles County, within the Central District of California, in a matter within the jurisdiction of the executive branch of the government of the United States, namely, the USAO and FBI, defendant ENGLANDER knowingly and willfully made the following materially false statements and representations to the FBI and USAO knowing that these statements and representations were untrue:

a. When asked whether he received any benefits other than casino chips (which he paid back), dinners, and a hotel room, defendant ENGLANDER falsely responded, "Not that I recall." In fact, as defendant ENGLANDER knew, Businessperson A did provide defendant ENGLANDER with the services of a female escort or "massage lady" and $10,000 in cash during the 2017 Las Vegas trip. Moreover, the two had several conversations about the "massage lady" Businessperson A provided during the 2017 Las Vegas trip.

b. When asked whether Businessperson A ever provided cash or payments to him, defendant ENGLANDER falsely stated, "Not that I recall" and that "it would be something I would reject." In fact, as defendant ENGLANDER knew, Businessperson A provided defendant ENGLANDER $10,000 cash in a bathroom during the June 2017 Las Vegas trip and $5,000 cash in a bathroom at the Palm Springs event for a total of $15,000 in 2017.

c. Defendant ENGLANDER falsely stated that, during his November 20, 2018 meeting with Businessperson A, he told Businessperson A to "share everything, be transparent, and share everything" with the FBI. In fact, as defendant ENGLANDER knew, he

did not provide such instructions and, instead, repeatedly agreed that Businessperson A should omit certain information.

d. When asked with whom he communicated using Confide, defendant ENGLANDER falsely stated "I do not remember" and he was "not sure if I ever used Confide." In fact, as defendant ENGLANDER knew, he had Confide registered to him on his phone at the time of the third interview and had recently used Confide to discuss relevant

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matters with Businessperson A and Lobbyist B. Moreover, on February 12, 2018, defendant ENGLANDER had instructed Businessperson A to lie to the FBI about their use of Confide.

A TRUE BILL

/s/
Foreperson

NICOLA T. HANNA
United States Attorney

Brandon Fox

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CENTRAL DIST. OF CALIF.
LOS ANGELES
BY

UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, Plaintiff, v. JUSTIN JANGWOO KIM, Defendant.	CR No. 20CR00154-JC I N F O R M A T I O N [18 U.S.C. § 666(a)(2): Bribery Concerning Programs Receiving Federal Funds]

The United States Attorney charges:

INTRODUCTORY ALLEGATIONS

At times relevant to this Information:

A. RELEVANT PERSONS AND ENTITIES

1. The City of Los Angeles (the "City") was a government that received more than $10,000 per fiscal year in funds from the United States, including from August 1, 2016 to July 31, 2017, in the form of grants, contracts, subsidies, loans, guarantees, insurance, and other forms of federal assistance. The City was split into fifteen City Council Districts ("CDs"), which covered different geographic areas. The City Council was composed of members who were elected from each district. City Councilmembers and their staff members were

agents of the City. All legislative power in the City was vested in the City Council and was exercised by ordinance, subject to a veto by the Mayor.

2. Defendant JUSTIN JANGWOO KIM was a real estate appraiser and consultant for real estate developers with projects in Los Angeles and a major fundraiser for Councilmember A.

3. Councilmember A was the Councilmember for a City Council District ("CD-A"). Councilmember A served on the Planning and Land Use Management ("PLUM") Committee, a body appointed by the City Council President that oversaw many of the most significant commercial and residential development projects in the City. Councilmember A also served on the Economic Development Committee.

4. City Staffer A-1 worked for the City on Councilmember A's staff in CD-A.

5. Developer C, owner of Company C, was a real estate owner and developer who owned commercial properties in the City, including a property held by Company C located in Councilmember A's District, purchased in 2008. Developer C and Company C were planning on building a residential complex on the property ("Project C").

6. Lobbyist B was a consultant for real estate developers with projects in the City and a major fundraiser for Councilmember A. Lobbyist B was a principal officer of Political Action Committee 1 ("PAC 1"), which was formed to benefit the campaign of a relative of Councilmember A for the CD-A seat.

7. Labor Organization A was an unincorporated association of individuals and labor organizations. Its members included labor unions.

8. Lobbyist C was a consultant and lobbyist for real estate developers with projects in the City and a close associate of the Executive Director of Labor Organization A.

B. BACKGROUND ON CITY PROCESSES

9. Within the City, large-scale development projects required a series of applications and approvals prior to, during, and after construction. These applications and approvals occurred in various City departments, including the City Council, PLUM Committee, the Economic Development Committee, the Los Angeles Planning Department, the Los Angeles Department of Building and Safety, the Area Planning Commission, the City Planning Commission, and the Mayor's Office.

10. Each part of the City approval process required official actions by public officials. These included entitlements, variances, general plan amendments, subsidies, incentives, public benefits, scheduling agendas for the various committees, and overall approvals. The process allowed for public hearings, feasibility studies, environmental impact reports, and other steps in the life of development projects.

11. Even for projects that were not going through the City approval process, City officials could benefit, or take adverse action against, a project by advocating for, pressuring, or seeking to influence other City officials, departments, business owners, and stakeholders.

12. Certain unions and labor organizations often used the California Environmental Quality Act ("CEQA") as a tool to pressure private developers to sign collective bargaining agreements, project labor agreements, maintenance labor agreements, labor neutrality agreements, and other union contracts. CEQA allowed unions and labor

organizations to file objections to Initial Studies, Mitigated Negative Declarations, and Draft and Final Environmental Impact Reports, which could delay a construction project and increase costs of environmental review and project development. In the City, CEQA objections were appealable to the PLUM Committee and the City Council.

C. THE PROJECT C BRIBERY AGREEMENT AND PAYMENT

13. Between August 2016 and July 2017, Developer C agreed to provide a $500,000 cash bribe to Councilmember A, through defendant KIM, in exchange for Councilmember A's assistance on Developer C's project, Project C. Developer C, through defendant KIM, initially provided $400,000 in cash that Developer C intended for Councilmember A between February and March 2017. Councilmember A directed City Staffer A-1 to hold on to $200,000 of the total bribe payment for Councilmember A. City Staffer A-1 and defendant KIM each kept a portion of the remaining $200,000 bribe payment for themselves. In exchange, Developer C, through defendant KIM and City Staffer A-1, sought to use Councilmember A's influence as the Councilmember of CD-A and member of the PLUM Committee to cause Labor Organization A to withdraw, abandon, or otherwise lose its appeal opposing Project C, thereby allowing Project C to move forward in its City approval process. In July 2017, Developer C provided defendant KIM the remaining $100,000 in cash intended for Councilmember A, which defendant KIM kept for himself.

14. Specifically, in the summer of 2016, Labor Organization A filed an appeal requesting to suspend all activity to implement Project C that required City approval until Project C was brought into compliance with the requirements of CEQA by correcting certain

deficiencies (the "appeal"). The appeal prevented Project C from progressing through the rest of the City approval processes, including approvals by the PLUM Committee and City Council.

15. On August 8, 2016, Developer C asked defendant KIM to obtain Councilmember A's assistance to deal with the appeal, which could ultimately reach the PLUM Committee of which Councilmember A was a member.

16. On August 9, 2016, Developer C sent a copy of the appeal to defendant KIM by e-mail, which defendant KIM then forwarded to City Staffer A-1.

17. On September 1, 2016, defendant KIM, Councilmember A, City Staffer A-1, and another individual met for dinner and later visited a Korean karaoke establishment in Los Angeles. While at the karaoke establishment, defendant KIM asked Councilmember A for assistance with the appeal on Project C, and Councilmember A agreed to help. Defendant KIM then called Developer C and asked Developer C to join them at the karaoke establishment, which Developer C did.

18. On September 2, 2016, defendant KIM and City Staffer A-1 met for lunch in Los Angeles. At Councilmember A's direction, City Staffer A-1 expressed to defendant KIM that Councilmember A would not help Project C for free and that Councilmember A would require a financial benefit in exchange for help ensuring Project C moved forward through the City approval process.

19. On September 3, 2016, defendant KIM and Developer C met at a bowling alley in Little Tokyo. Defendant KIM conveyed to Developer C the message from Councilmember A and City Staffer A-1, namely that Councilmember A's assistance on Project C would require that Councilmember A receive a financial benefit.

20. On January 17, 2017, defendant KIM, Councilmember A, and Developer C's business associates met at Councilmember A's City Hall office to discuss, among other things, Project C. Shortly before the meeting, City Staffer A-1 sent defendant KIM a series of text messages, writing: "Let's you and I meet with [the] CM [Councilmember A] after to talk about [Project C]. Make those ask about ... [Labor Organization A]." Defendant KIM responded: "Yes." During a private portion of the meeting that included only defendant KIM, Councilmember A, and City Staffer A-1, defendant KIM again asked Councilmember A for assistance with the appeal, and Councilmember A responded that Councilmember A could help. Councilmember A also stated that Councilmember A wanted defendant KIM to be a major supporter when Councilmember A's relative ran for Councilmember A's seat as the councilmember for CD-A.

21. On January 18, 2017, defendant KIM and City Staffer A-1 met at a coffee shop in Little Tokyo. During this meeting, City Staffer A-1 told defendant KIM that Lobbyist C stated it would cost approximately $1.2 million to $1.4 million to hire a lobbyist to attempt to resolve the appeal and allow Project C to move forward in the City approval process. After this meeting, defendant KIM conveyed the cost of $1.2 million to $1.4 million to Developer C. Developer C made a counteroffer for Councilmember A to resolve the appeal for $500,000 in cash to Councilmember A.

22. In approximately February 2017, defendant KIM conveyed Developer C's counteroffer of $500,000 cash for Councilmember A to City Staffer A-1, who then conveyed this counteroffer to Councilmember A.

23. Between February 2, 2017 and February 10, 2017, defendant KIM had conversations with City Staffer A-1 and Developer C, including via text messages, discussing the negotiation of the bribe payment from Developer C to Councilmember A.

24. In or around February 2017, defendant KIM and City Staffer A-1 met at a restaurant in Los Angeles to discuss the bribe payment amount. Defendant KIM and City Staffer A-1 discussed that Developer C agreed to pay $500,000 in cash in exchange for Councilmember A's assistance in resolving the appeal so that Project C could move forward in the City approval process, including approvals by the PLUM Committee and City Council. Thereafter, City Staffer A-1 told Councilmember A that Councilmember A would collect $300,000 of the total $500,000 cash bribe payment.

25. In approximately February and March 2017, Councilmember A and City Staffer A-1 discussed the appeal on Project C. Councilmember A stated that Councilmember A had conveyed to Lobbyist C that Councilmember A had to support Project C, meaning that Councilmember A would oppose the appeal in the PLUM Committee. According to Councilmember C, Lobbyist C agreed to discuss the issue with the Executive Director of Labor Organization A.

26. On February 14, 2017, City Staffer A-1 had a text message conversation with Lobbyist C, about a private meeting with Councilmember A. Specifically, City Staffer A-1 wrote: "My boss [Councilmember A] asked if you guys can have a one on one on Tuesday at 830am?... Just you and the Councilman."

27. On February 22, 2017, City Staffer A-1 had a text message conversation with Lobbyist C, about another private meeting at Councilmember A's request. Specifically, City Staffer A-1 wrote: "Hi

[Lobbyist C], free tomorrow to meet? Councilman asked me to meet with you." Lobbyist C responded: "Yea. Let me loop in [another individual]." City Staffer A-1 then replied: "Cool. But I still need to talk to you one on one per my bosses [Councilmember A] request." Lobbyist C responded: "No problem. Misunderstood."

28. On March 1, 2017, City Staffer A-1 sent a text message to Lobbyist C regarding the appeal, asking: "Everything good?" Lobbyist C then replied: "Think so, You?" City Staffer A-1 responded: "Yes sir.. just checking in."

29. On March 3, 2017, Lobbyist C sent City Staffer A-1 a text message informing City Staffer A-1: "Appeal [was] dropped today."

30. Later that day, City Staffer A-1 informed defendant KIM that Councilmember A had held up Councilmember A's end of the bargain and resolved the appeal. Soon thereafter, defendant KIM informed Developer C that Councilmember A held up Councilmember A's end of the agreement and helped resolve the appeal.

31. In approximately February or March 2017, defendant KIM met with Developer C at a commercial building in Los Angeles and received a paper bag from Developer C containing $400,000 in cash, which was intended to be a bribe Developer C agreed to pay for Councilmember A's assistance in resolving the appeal. After receiving $400,000 in cash from Developer C, defendant KIM met with City Staffer A-1 in a car in Los Angeles, and gave City Staffer A-1 cash to deliver to Councilmember A. Defendant KIM kept some cash for himself for facilitating the bribe payment.

32. On March 14, 2017, at 4:48 p.m., City Staffer A-1 sent a text message to Councilmember A, asking: "Are you home?"

Councilmember A responded: "Yes." City Staffer A-1 then wrote: "Can I stop by? Just finished meeting with JUSTIN [KIM]."

33. On March 14, 2017, at approximately 5:15 p.m., Councilmember A and City Staffer A-1 met at Councilmember A's residence. City Staffer A-1 told Councilmember A that Developer C had provided $400,000 in cash to date, and that Developer C would provide the remaining $100,000 later. City Staffer A-1 stated that defendant KIM had provided $200,000 of that cash to City Staffer A-1 to date. At the meeting, City Staffer A-1 showed Councilmember A a liquor box filled with approximately $200,000 cash. Councilmember A told City Staffer A-1 to hold on to and hide the money at City Staffer A-1's residence until Councilmember A asked for it.

D. DEFENDANT KIM'S FURTHER PROFIT FROM THE PROJECT C BRIBERY SCHEME

34. In order to continue to profit from the bribery scheme, in or around July 2017, defendant KIM falsely told Developer C that Councilmember A asked for the remaining $100,000 bribe payment. Developer C agreed to provide the remaining $100,000 of the agreed-upon $500,000 bribe to be paid to Councilmember A for resolving the appeal. Defendant KIM met with Developer C at an office in Los Angeles and received an additional $100,000 in cash from Developer C. Defendant KIM kept this money for himself.

35. Defendant KIM failed to declare any of the cash he received from Developer C for his role in facilitating the Project C bribery scheme on his federal income tax return for 2017, as required.

E. DEFENDANT KIM'S SUPPORT FOR COUNCILMEMBER A AND COUNCILMEMBER A'S RELATIVE

36. During the bribery scheme, defendant KIM and City Staffer A-1 strategized ways to protect Councilmember A to ensure

Councilmember A's power and relevance within the City, including repeatedly discussing being loyal to Councilmember A, because it meant securing future financial opportunities for defendant KIM and City Staffer A-1. Defendant KIM frequently referred to Councilmember A as defendant KIM's "boss."

37. Defendant KIM supported City Staffer A-1's and Councilmember A's succession plan that would maintain or increase financial opportunities for them after Councilmember A's term as councilmember of CD-A expired. These discussions included plans to elect Councilmember A's relative for the CD-A seat, ensuring political control for them and their allies, and developing the Project C bribery scheme in CD-A. On multiple occasions, defendant KIM discussed with City Staffer A-1 the need to ensure Councilmember A's relative was elected for their own political and financial benefit and their own long-term plan.

38. On April 15, 2017, in a telephone call between defendant KIM and City Staffer A-1, they discussed their common purpose in ensuring that Councilmember A remained in power and that Councilmember A's relative succeeded Councilmember A. Specifically, defendant KIM stated: "But more importantly, [City Staffer A-1], your interests, my interests, that's what I told everyone, alright? We want to make sure [Councilmember A's relative] gets elected."

39. On April 17, 2017, in a telephone call between defendant KIM and City Staffer A-1, they again discussed their common purpose in ensuring that Councilmember A remained in power. Specifically, defendant KIM stated: "[T]hat's why we can't make mistakes with [Councilmember A] from now on." City Staffer A-1 responded: "Well,

we got to, uh, protect the ship, right, from sinking itself." Defendant KIM affirmed.

40. On April 28, 2017, in a telephone call between defendant KIM and City Staffer A-1, they discussed their long-term plan to maintain their own political and financial interests. Specifically, City Staffer A-1 stated: "[Councilmember A's relative] wins, we have another twelve years in the City." Later in the same call, City Staffer A-1 stated: "You and I have a twenty year plan and we got to where we want to be." Defendant KIM responded: "[T]hat would be ideal."

41. On May 2, 2017, in a telephone call between defendant KIM and City Staffer A-1, they discussed their commitment to Councilmember A and confirming they all knew they were working towards a common purpose. Specifically, defendant KIM stated: "[W]e're the most loyal guys." City Staffer A-1 responded: "I think it's important to tell [Councilmember A], like, 'Look boss, we're your loyal people.' ... [W]e've showed our loyalty, you've showed your loyalty."

42. On or around June 22, 2017, defendant KIM met with Councilmember A, City Staffer A-1, and Lobbyist B to discuss establishing two political action committees ("PACs") to raise money for the campaign of Councilmember A's relative. During this meeting, Councilmember A suggested having defendant KIM find an associate to serve as the "face" of one of the PACs to disguise Councilmember A's involvement and the PAC's connection to CD-A.

F. DEFENDANT KIM'S ACTIONS SHOWING HIS CONSCIOUSNESS OF GUILT

43. On May 18, 2017, the FBI conducted a voluntary interview of defendant KIM regarding a public corruption investigation. During

the interview, defendant KIM minimized his close relationship with City Staffer A-1 and the frequency with which they communicated with each other. During the interview, the FBI told defendant KIM about an ongoing grand jury investigation and asked defendant KIM not to reveal the interview to others because it may negatively impact the federal grand jury investigation. Defendant KIM told the FBI he agreed not to reveal such information to others.

44. Nevertheless, on May 18, 2017, approximately one hour after the first FBI interview, defendant KIM called City Staffer A-1 and informed City Staffer A-1 that he talked to the FBI. Defendant KIM told City Staffer A-1 that the FBI "know[s] exactly who you are," that the FBI had conducted surveillance at one of City Staffer A-1's local hangouts, and warned City Staffer A-1: "Don't take our boss [Councilmember A] over there."

45. On July 10, 2017, the FBI conducted a second voluntary interview of defendant KIM. Defendant KIM falsely stated that he did not tell anyone that he met with the FBI, other than his wife and Friend A. Among other things, defendant KIM also falsely stated that: (1) he had not asked anything from anyone in City Council and (2) he never provided any type of benefits including money or items to City Staffer A-1.

46. On July 11, 2017, in a telephone call, defendant KIM told City Staffer A-1 that he had a second interview with the FBI. City Staffer A-1 warned that "you might not want to talk on the phone." Defendant KIM disclosed that the FBI had photographs of City Staffer A-1 and defendant KIM. Defendant KIM then stated: "Just letting you know, [City Staffer A-1]. This is one place I didn't want us to be."

47. The next day, on July 12, 2017, defendant KIM and City Staffer A-1 met in person in a car near City Staffer A-1's residence, and then drove around in the car. During this meeting, defendant KIM and City Staffer A-1 discussed the FBI investigation.

48. On or about March 20, 2019, after the FBI seized defendant KIM's phone pursuant to a federal search warrant, defendant KIM met Developer C at a coffee shop in Little Tokyo to discuss their concerns regarding the FBI investigation. Defendant KIM disclosed to Developer C that he told his attorney about the $500,000 bribe payment to Councilmember A. Developer C got upset and told defendant KIM he should have lied to the attorney. Developer C stated that now the two could not match stories.

G. COUNCILMEMBER A SEEKS TO COLLECT THE PROJECT C BRIBE PAYMENT FROM CITY STAFFER A-1

49. On December 28, 2017, Councilmember A and City Staffer A-1 met at City Hall, in Councilmember A's private bathroom, to discuss various topics, including the cash bribe City Staffer A-1 was holding for Councilmember A. Councilmember A mentioned that Councilmember A had "a lot of expenses" because Councilmember A's relative was running to be the councilmember for CD-A. Councilmember A stated: "I'm gonna need money." Councilmember A referred to the $200,000 cash bribe payment that Councilmember A asked City Staffer A-1 to keep at City Staffer A-1's residence, stating: "That is mine, right? That is mine." City Staffer A-1 responded: "Yup." Councilmember A and City Staffer A-1 agreed to wait until April 1, 2018, for City Staffer A-1 to provide the $200,000 cash to Councilmember A, to allow some cooling off period after City Staffer A-1's interviews with the FBI during the summer.

50. In or around April 2018, Councilmember A and City Staffer A-1 communicated by telephone and agreed to postpone their meeting to deliver Councilmember A's bribery cash to October 1, 2018.

51. In or around September and October 2018, Councilmember A sent City Staffer A-1 a series of unanswered text messages regarding the October 1, 2018 meeting and expected delivery of Councilmember A's cash bribe. Specifically, on September 30, 2018, Councilmember A wrote: "Hey [City Staffer A-1]. Tomorrow is October first. When we gonna meet?" On October 4, 2018, Councilmember A wrote: "Hey [City Staffer A-1]. So we gonna meet up like u said we would after October?"

52. On October 5, 2018, defendant KIM and Councilmember A met at a hotel in Pasadena. Councilmember A asked defendant KIM to turn off his cellphone during the meeting to ensure their meeting was not recorded. Councilmember A stated that Councilmember A had not gotten Councilmember A's share and held up two fingers, referring to the $200,000, which was Councilmember A's share of the bribe payment from Developer C in exchange for Councilmember A's help with the appeal. Councilmember A explained that Councilmember A did not get Councilmember A's share of the bribe payment because City Staffer A-1 was still holding on to the cash.

53. Councilmember A continued to try to meet with City Staffer A-1 to obtain Councilmember A's portion of the bribe proceeds. On October 14, 2018, Councilmember A sent a text message to City Staffer A-1, writing: "[City Staffer A-1]. I've been trying to connect with you. We have a meeting that was supposed to occur on October 1." On October 20, 2018, Councilmember A wrote: "[City Staffer A-1]. I've been trying to reach u. When are we going to meet and square up?"

On October 22, 2018, Councilmember A wrote: "Sounds like u don't ever want to meet and face up to your commitment to meet on October 1 and u are using other pretexts as to why u don't want to meet. You are using excuses as for the real reason u don't want to meet and u know it. U told me October. Now What? Each time comes up and u don't want to meet at all? U want it all and that's the real reason why you don't want to meet and are using all kind of excuses. One more time, when are we going to meet?"

COUNT ONE

[18 U.S.C. § 666(a)(2), § 2(a)]

54. From on or about August 8, 2016 to approximately July 2017, in Los Angeles County, within the Central District of California, defendant JUSTIN JANGWOO KIM, both individually and aiding and abetting Developer C and others known and unknown to the United States Attorney, corruptly gave, offered, and agreed to give things of value to Councilmember A and City Staffer A-1, both agents of the City of Los Angeles, intending to influence and reward Councilmember A and City Staffer A-1 in connection with business, transactions, and series of transactions of the City of Los Angeles, having a value of $5,000 or more. Specifically, defendant KIM, on behalf of Developer C, corruptly gave, offered, and agreed to give to Councilmember A and City Staffer A-1 $500,000 in cash, intending to influence and reward Councilmember A and City Staffer A-1 in connection with Councilmember

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A and City Staffer A-1 using their official positions to assist Developer C and Company C in connection with Labor Organization A's appeal opposing Project C in the PLUM Committee.

NICOLA T. HANNA
United States Attorney

Brandon Fox

BRANDON D. FOX
Assistant United States Attorney
Chief, Criminal Division

MACK E. JENKINS
Assistant United States Attorney
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Public Corruption and Civil
Rights Section

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05/13/2020
CENTRAL DISTRICT OF CALIFORNIA
BY: AP DEPUTY

UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, Plaintiff, v. GEORGE CHIANG, Defendant.	CR No. 2:20-cr-00203-PA I N F O R M A T I O N [18 U.S.C. § 1962(d): Racketeer Influenced and Corrupt Organizations Conspiracy]

The United States Attorney charges:

INTRODUCTORY ALLEGATIONS

At times relevant to this Information:

A. BACKGROUND ON CITY PROCESSES

1. All legislative power in the City of Los Angeles (the "City") was vested in the City Council and was exercised by ordinance subject to a veto by the Mayor. The City was divided into fifteen City Council Districts covering different geographic areas. The City Council was composed of fifteen members elected from single-member districts.

2. To prevent former City officials from exercising or appearing to exercise improper influence over City decisions, the Los

Angeles Municipal Code, Sections 49.5.1 et seq., contained “revolving door” restrictions. The restrictions imposed a lifetime ban on receiving compensation to attempt to influence City action on a specific matter in which the City official personally and substantially participated in during their City service. The restrictions also imposed a one-year ban, or “cooling-off” period, during which the City official was prohibited from attempting to influence action on a matter pending before the City official’s former City agency for compensation, regardless of participation in that matter.

3. Within the City, large-scale development projects required a series of applications and approvals prior to, during, and after construction. These applications and approvals occurred in various City departments, including the City Council, the Planning and Land Use Management (“PLUM”) Committee, the Economic Development Committee, the Los Angeles Planning Department, the Los Angeles Department of Building and Safety (“LADBS”), the Area Planning Commission, the City Planning Commission, and the Mayor’s Office.

4. Each part of the City approval process required official actions by public officials. These included entitlements, variances, general plan amendments, subsidies, incentives, public benefits, scheduling agendas for the various committees, and overall approvals. The process allowed for public hearings, feasibility studies, environmental impact reports, and other steps in the life of development projects.

5. Even for projects that were not going through the City approval process, City officials could benefit, or take adverse action against, a project by advocating for, pressuring, or seeking

to influence other City officials, departments, business owners, and stakeholders.

6. Developers typically hired consultants and/or lobbyists to assist in guiding projects through the development process and City departments, including interfacing with the City Council office that represented the district in which the project was located.

B. RELEVANT PERSONS AND ENTITIES

7. Defendant GEORGE CHIANG was a real estate broker and development consultant in the City. From 2006 to 2014, defendant CHIANG was primarily engaged in property management and the sale of residential and commercial property in the San Gabriel Valley. In 2014, defendant CHIANG established a corporation offering consulting services under the name Synergy Alliance Advisors, Inc. ("Synergy").

8. Councilmember A was the Councilmember for a City Council District ("CD-A"). Councilmember A served on the PLUM Committee, a body appointed by the City Council President that oversaw many of the most significant commercial and residential development projects in the City. Councilmember A also served on the Economic Development Committee.

9. City Staffer A-1 and City Staffer A-2 worked for the City on Councilmember A's staff.

10. Relative A-1 was a relative of Councilmember A. Beginning no later than 2007, Relative A-1 received a bi-weekly payment of approximately $2,500 from Law Firm A as part of her employment with Law Firm A tasked with marketing and business development. Between approximately July 2012 and January 2016, Relative A-1 received regular employment payments from High School A, totaling approximately $150,000, as a fundraiser for the school. In or about

September 2018, Relative A-1 formally announced her candidacy to succeed Councilmember A as Councilmember for CD-A.

11. Councilmember A's Associate was a close associate of Councilmember A, and operated Company A in the City.

12. Justin Kim was a real estate appraiser and consultant for real estate developers with projects in the City and a major fundraiser for Councilmember A.

13. Individual 1 was the General Manager of the LADBS until in or about May 2016. In or about May 2016, Individual 1 was appointed by the Mayor as the City's Deputy Mayor for Economic Development. As Deputy Mayor, Individual 1 directed LADBS and the Planning Department, among other City departments. In or about July 2017, Individual 1 retired from the City and formally began working as a consultant with defendant CHIANG at Synergy in downtown Los Angeles. Beginning on or about August 1 2017, Individual 1 was the sole owner of Individual 1's Company, a real estate firm located in downtown Los Angeles.

14. CCC Investment Group, Inc. ("CCC Investment") was a real estate brokerage and consulting firm created by defendant CHIANG and Individual 1 on or around August 15, 2017.

15. Planning Commission Official was a member of the mayoral-appointed City Planning Commission.

16. City Staffer D was a high-ranking staff member for a councilmember in one of the City's districts.

17. Company D was, according to its website, one of the top real estate companies in China with projects worldwide. Company D, through its subsidiaries, acquired a property located in CD-A in 2014, and planned to redevelop the property into a mixed-use

development that was to include 80,000 square feet of commercial space, 650 residential units, and 300 hotel rooms, and would be valued at several hundred million dollars ("Project D").

18. Chairman D was the Chairman of Company D.

19. General Manager D was the general manager of Project D until he was terminated from that role in approximately January 2017.

20. Synergy Consultant was hired by Synergy to consult on Project D.

21. PAC A was a political action committee formed to primarily benefit Relative A-1's campaign for the CD-A seat.

22. These Introductory Allegations are incorporated by reference into the sole count of this Information.

COUNT ONE

[18 U.S.C. § 1962(d)]

A. THE RACKETEERING ENTERPRISE

23. Defendant CHIANG and others known and unknown to the United States Attorney, were members and associates of the CD-A Enterprise, a criminal organization whose members and associates engaged in, among other things, bribery, extortion, and mail and wire fraud, including through the deprivation of the honest services of City officials and employees, and money laundering. The CD-A Enterprise operated within the Central District of California and elsewhere.

24. The CD-A Enterprise, including its leaders, members, and associates, constituted an "enterprise," as defined by Title 18, United States Code, Section 1961(4), that is, a group of individuals associated in fact. The CD-A Enterprise constituted an ongoing organization whose members functioned as a continuing unit for a common purpose of achieving the objectives of the enterprise. The CD-A Enterprise engaged in, and its activities affected, interstate and foreign commerce.

B. OBJECTIVES OF THE ENTERPRISE

25. The objectives of the CD-A Enterprise included, but were not limited to, the following:

a. enriching the members and associates of the CD-A Enterprise through means that included bribery, extortion, and mail and wire fraud, including through the deprivation of the honest services of City officials and employees;

b. advancing the political goals and maintaining the control and authority of the CD-A Enterprise by elevating members and associates of the CD-A Enterprise to, and maintaining those

individuals' placement in, prominent elected office, through means that included bribery and mail and wire fraud, including through the deprivation of the honest services of City officials and employees;

c. concealing the financial activities of the CD-A Enterprise, through means that included money laundering and structuring; and

d. protecting the CD-A Enterprise by concealing the activities of its members and associates and shielding the CD-A Enterprise from detection by law enforcement, the City, the public, and others, through means that included obstructing justice.

C. RICO CONSPIRACY

26. Beginning on a date unknown to the United States Attorney, but no later than January 1, 2014, and continuing to in or about December 2018, in Los Angeles County, within the Central District of California and elsewhere, defendant CHIANG, a person employed by and associated with the CD-A Enterprise, conspired with others known and unknown to the United States Attorney to unlawfully and knowingly violate Title 18, United States Code, Section 1962(c), that is, to conduct and participate, directly and indirectly, in the conduct of the CD-A Enterprise's affairs through a pattern of racketeering activity, as that term is defined in Title 18, United States Code, Sections 1961(1) and 1961(5), consisting of multiple acts:

a. involving bribery, in violation of California Penal Code Sections 67 and 68;

b. indictable under Title 18, United States Code, Sections 1341, 1343, and 1346 (Mail and Wire Fraud, including through the Deprivation of Honest Services);

c. indictable under Title 18, United States Code, Section 1951 (Extortion);

d. indictable under Title 18, United States Code, Section 1952 (Interstate and Foreign Travel in Aid of Racketeering Enterprises);

e. indictable under Title 18, United States Code, Sections 1956 and 1957 (Money Laundering);

f. indictable under Title 18, United States Code, Section 1512 (Obstruction of Justice and Witness Tampering); and

g. indictable under Title 31, United States Code, Section 5324 (Structuring Transactions to Evade Reporting Requirement).

27. It was a further part of the conspiracy that defendant CHIANG agreed that a conspirator would commit at least two acts of racketeering activity in the conduct of the affairs of the enterprise.

D. MEANS BY WHICH THE OBJECT OF THE CONSPIRACY WAS TO BE ACCOMPLISHED

28. Defendant CHIANG and other members and associates of the CD-A Enterprise agreed to conduct the affairs of the CD-A Enterprise through the following means, among others:

a. In order to enrich its members and associates, the CD-A Enterprise operated a pay-to-play scheme within the City of Los Angeles, wherein public officials demanded financial benefits from developers and their proxies in exchange for officials acts. Specifically, through a scheme that involved bribery, mail and wire fraud, and extortion, Councilmember A, City Staffer A-1, Individual 1 and other City officials demanded, solicited, accepted, and agreed to accept from developers and their proxies, including defendant CHIANG,

some combination of the following types of financial benefits, among others: (1) cash; (2) consulting and retainer fees; (3) favorable loans; (4) casino chips at casinos; (5) flights on private jets and commercial airlines; (6) stays at luxury hotels; (7) expensive meals; (8) spa services; (9) event tickets to concerts, shows, and sporting events; (10) escort and prostitution services; and (11) other gifts.

b. In exchange for such financial benefits from developers and their proxies, Councilmember A, City Staffer A-1, Individual 1 and other City officials agreed to perform and performed the following types of official acts, among others: (1) filing motions in various City committees to benefit projects; (2) voting on projects in various City committees, including the PLUM Committee, and City Council; (3) taking, or not taking, action in the PLUM Committee to expedite or delay the approval process and affect project costs; (4) exerting pressure on other City officials to influence the approval process of projects; (5) negotiating with and exerting pressure on labor unions to resolve issues on projects; (6) exerting pressure on developers with projects pending before the City to affect their business practices; and (7) taking official action to enhance the professional reputation and marketability of businesspersons in the City.

c. In order to protect and hide the financial payments that flowed from the developers and their proxies to the public officials, the CD-A Enterprise engaged in money laundering and other activities to conceal monetary transactions and bribe payments. Specifically, members and associates of the CD-A Enterprise engaged in the following activities, among others: (1) storing large amounts of cash in one’s residence; (2) providing cash to family members and

associates; (3) directing payments to family members, associates, and entities to avoid creating a paper trail between the developers, their proxies and public officials; (4) using family members and associates to pay expenses; (5) depositing cash at ATMs and banks in amounts under $10,000 to avoid bank reporting requirements; and (6) failing to disclose payments and benefits received on Form-700s and on tax returns.

d. In order to maintain its power and control, members and associates of the CD-A Enterprise used their positions and relationships to illicitly ensure a political power base filled with only their allies and to monopolize significant official City positions, resources, and financial support. Specifically, through bribery, members and associates of the CD-A Enterprise raised funds from developers and their proxies with projects in CD-A for the following, among others: (1) Councilmember A's re-election campaigns and officeholder accounts; (2) Relative A-1's election campaign for the CD-A seat; (3) Political Action Committees formed purportedly to benefit a broad array of candidates and causes but, in fact, utilized to benefit Relative A-1's election campaign.

e. In order to protect the CD-A Enterprise and avoid detection by law enforcement, the City, the public, and others, members and associates of the CD-A Enterprise engaged in the following types of obstructive conduct: (1) lying to law enforcement in an effort to impede the investigation into criminal conduct of the CD-A Enterprise; (2) attempting to corruptly influence the statements of others to law enforcement; and (3) using encrypted messaging applications, including those utilizing a self-destructing message system, to communicate about the affairs of the CD-A Enterprise.

E. OVERT ACTS

29. In furtherance of the conspiracy and to accomplish the object of the conspiracy, on or about the following dates, defendant CHIANG and others known and unknown to the United States Attorney, committed and caused to be committed various overt acts within the Central District of California, and elsewhere, including the following:

PROJECT D BRIBERY SCHEMES

30. Between November 2014 and November 2018, Councilmember A solicited financial benefits from Company D, including from Chairman D, General Manager D, and its consultants (defendant CHIANG and Individual 1), in exchange for Councilmember A's official acts to benefit Project D. In exchange for official acts from Councilmember A to benefit Project D, defendant CHIANG, Chairman D, General Manager D, and Individual 1 agreed to facilitate and provide financial benefits to Councilmember A, including $66,000 in consulting fees to a Councilmember A's Associate, a trip to China for Councilmember A and his family, event tickets, expenses, and a $100,000 contribution to PAC A to benefit Relative A-1's campaign for the CD-A seat.

31. Between January 2017 and June 2017, while Individual 1 was a Deputy Mayor, defendant CHIANG and Individual 1 agreed that Individual 1 would assist defendant CHIANG and Project D in exchange for future payment. Specifically, Individual 1 agreed to perform and did perform official acts in his capacity as Deputy Mayor to benefit Project D. In exchange, defendant CHIANG agreed to share consulting fees and bonus payments from Company D with Individual 1, and

provided approximately $112,000 directly and indirectly to Individual 1 between October and December 2017.

a) Early Corrupt Relationship between Company D and Councilmember A

32. In 2014, Company D, through its subsidiaries, acquired a property located in CD-A for more than $100 million and planned a massive redevelopment, Project D, that would include retail space, residential units, and hotel rooms.

33. In or around January 2015, defendant CHIANG began working as a consultant for Company D on Project D, earning approximately $5,000 per month.

34. Beginning in early 2014, defendant CHIANG and Individual 1 facilitated the introduction of Councilmember A to Company D and Chairman D. For example, on November 4, 2014, defendant CHIANG sent an email to City Staffer A-1 with the subject line "[Councilmember A] Fundraising," writing: "Can you get me in touch with [Councilmember A]? [Individual 1] and I had dinner with [Company D] last night regarding pledging their support so I want to discuss this to prepare the Councilman's dinner with them this Thursday."

35. In subsequent months, defendant CHIANG provided in-kind contributions to Councilmember A's re-election campaign, including printers, stamps, and food.

36. On September 7, 2015, Individual 1, in his capacity as the then General Manager of LADBS, communicated with Councilmember A and defendant CHIANG regarding Project D. Specifically, Individual 1 sent a group text message to Councilmember A and defendant CHIANG, writing: "Per our conversation a few days ago, I am sending you this text message to suggest to you the names of the people whom you

should invite to the biweekly [Company D]-Planning meeting. On [Company D] side, [General Manager D], GEORGE CHIANG, (whom I include in this text message), and [an attorney] should be invited. They may bring others. On the Planning side, [a Planning official] should be invited and you need to demand his presence. I am certain that he would bring others. [A public official] represented the mayor's office should also be invited. At your first meeting, please stress that this will be a standing biweekly meeting until the TFAR matter is determined. Please let me know if there is anything that I can be is assistance. Best, [Individual 1]."

37. On September 8, 2015, defendant CHIANG sent a group text message to Councilmember A and Individual 1, writing: "Dear [Councilmember A] and [Individual 1], thank you for making this arrangement possible. As the clock ticks, the chairman [D] is beginning to feel weary about our progress. I just need to make sure that he sees the light at the end of the tunnel. Once again, thank you both for all of your support hopefully I can bring some good news within the near future. Like always, please let me know if I can be helpful. Thanks, GEORGE [CHIANG]."

38. In 2015, High School A planned a gala event and fundraiser on September 18, 2015. In or around September 2015, at Councilmember A's direction, City Staffer A-1 solicited donations to the high school gala event from developers and consultants with projects pending in Councilmember A's district, including a $10,000 contribution from Company D, which Company D paid.

39. In or around 2015 or 2016, Councilmember A, through City Staffer A-1, asked defendant CHIANG to have Company D set up a

monthly retainer with Law Firm A, from which Relative A-1 received bi-weekly paychecks of approximately $2,500.

40. In approximately 2016, at a meeting that defendant CHIANG attended, Councilmember A told Chairman D that there was no need to involve the City's Mayor in the approval process of Project D because Councilmember A was the one in control of the PLUM committee. Councilmember A stated that the City's Mayor could not provide help to Chairman D and it was Councilmember A who drove the project. In addition, Councilmember A told defendant CHIANG privately to tell Chairman D that as far as the success of Project D was concerned, Chairman D did not need anyone else in the City but Councilmember A.

b) $66,000 Bribe to Councilmember A's Associate in Exchange for Motion

41. Between November 2015 and November 2016, Councilmember A solicited financial benefits from Company D, including from defendant CHIANG (its consultant), Chairman D, and General Manager D, in exchange for Councilmember A's official acts to benefit Project D. Specifically, Chairman D and General Manager D agreed to provide indirect financial benefits to Councilmember A in the form of consulting fees to Councilmember A's Associate in exchange for Councilmember A introducing a motion to benefit Project D. Defendant CHIANG facilitated part of this arrangement, as described further below.

42. On November 11, 2015, defendant CHIANG and Councilmember A, City Staffer A-1, Chairman D, and General Manager D met over dinner at a restaurant in Arcadia, California. At the meeting, defendant CHIANG translated for Councilmember A and Chairman D as they discussed obtaining Councilmember A's support for Project D. In

addition, in the same conversation, Councilmember A asked Chairman D to hire Councilmember A's associate on Company D's project. Chairman D told Councilmember A to discuss the details with General Manager D.

43. On November 16, 2015, defendant CHIANG sent an email to City Staffer A-1, copying General Manager D, confirming the new agreement between Councilmember A and Chairman D. Defendant CHIANG stated: "Now with a common consensus in place for [Project D], we would like to roll this project full speed ahead. Therefore, I would like to request the biweekly standing meeting to restart.... From this point on, we would like to communicate all aspects of our project with your [CD-A] office FIRST prior to any other offices in the city family.... [P]lease be ready to coordinate with Mayor's office, Planning Department, and all other related parties so we can drive on a singular track."

44. On December 8, 2015, as part of this new agreement, defendant CHIANG and Councilmember A met in person at a coffee shop in Los Angeles to discuss a consulting agreement to pay Councilmember A's Associate. At the meeting, defendant CHIANG told Councilmember A that General Manager D would work with Councilmember A on retaining Councilmember A's Associate. Councilmember A told defendant CHIANG that Relative A-1 would be involved with getting the retainer consummated.

45. Between December 8, 2015 and December 16, 2015, at a meeting at the site of Project D, General Manager D asked defendant CHIANG if defendant CHIANG's consulting firm Synergy could hire Councilmember A's Associate if, in return, Company D would increase the retainer with Synergy to cover that cost. Defendant CHIANG declined.

46. On December 16, 2015, defendant CHIANG facilitated an introduction between Relative A-1 and Chairman D's relative. Relative A-1 met with Chairman D's relative at a café in Pasadena, California, to discuss an arrangement whereby Chairman D's relative's company would pay a company affiliated with Councilmember A's Associate, purportedly for real estate advice.

47. On April 19, 2016, Councilmember A sent a text message to defendant CHIANG, stating that Councilmember A "would like to briefly speak with [General Manager D]" about an "[u]pdate on some of my meetings with [Relative A-1]." Defendant CHIANG responded: "Let me call [General Manager D] right now and get back to you."

48. On April 26, 2016, Councilmember A sent a text message to defendant CHIANG and asked: "Everything good?" Defendant CHIANG responded, "Yes sir!" Councilmember A subsequently answered: "Cool. The more I think about our project, the more I get excited about it. Let's meet every two weeks or so to see how things are going.... I think it'll be great!"

49. In May 2016, Company A and Chairman D's relative's company executed an agreement whereby Company A would purportedly "provide marketing analysis for Real Estate and Land Development Opportunities in the Greater Southern California Area in the total amount of $11,000.00 per month for services rendered. The term of this agreement is one (1) year with one (1) option year." In reality, defendant CHIANG prepared the monthly marketing analysis reports and delivered them to Councilmember A, who then provided them to Councilmember A's Associate, who collected the $11,000 monthly retainer. Defendant CHIANG, Councilmember A, Chairman D, and General Manager D understood that the monthly retainer payments were intended

to be and were indirect bribe payments to Councilmember A in exchange for Councilmember A's official acts to benefit Project D.

50. On May 31, 2016, defendant CHIANG and Councilmember A had a conversation via text message regarding Councilmember A obtaining the monthly reports purportedly prepared by Company A (but in fact prepared by defendant CHIANG) pursuant to the consulting agreement with Chairman D's relative regarding real estate and land development opportunities.

Real Estate Report #1

51. On May 31, 2016, defendant CHIANG delivered to Councilmember A his first real estate report that they intended would be passed off as being created by Company A pursuant to its $11,000 per month consulting agreement with Chairman D's relative.

52. Between May 31, 2016 and June 8, 2016, Councilmember A met with Councilmember A's Associate and delivered the first real estate report he received from defendant CHIANG.

53. On June 8, 2016, Councilmember A's Associate caused his employee to send an email to Chairman D's relative transmitting the first report and first invoice for May 2016.

54. On June 15, 2016, pursuant to the consulting agreement, Chairman D's relative sent the first wire payment of $11,000 to Company A, to a Union Bank account ending in 6345.

55. On June 23, 2016, Relative A-1 deposited $400 in cash into her Bank of America account ending in 4340.

Real Estate Report #2

56. On July 1, 2016, defendant CHIANG met with Councilmember A at a coffee shop in Los Angeles, where defendant CHIANG delivered his second real estate report.

57. On July 14, 2016, Councilmember A met with Councilmember A's Associate and delivered the second real estate report he received from defendant CHIANG.

58. On July 14, 2016, Councilmember A's Associate caused his employee to send an email to Chairman D's relative transmitting the second report and second invoice for June 2016.

59. On July 19, 2016, pursuant to the consulting agreement, Chairman D's relative sent the second wire payment of $11,000 to Company A, to a Union Bank account ending in 6345.

Real Estate Report #3

60. On August 1, 2016, defendant CHIANG met with Councilmember A at a restaurant in Los Angeles, where defendant CHIANG delivered his third real estate report.

61. On August 10, 2016, Councilmember A met with Councilmember A's Associate at a restaurant and delivered the third real estate report he received from defendant CHIANG.

62. On August 11, 2016, Councilmember A's Associate caused his employee to send an email to Chairman D's relative transmitting the third report and third invoice for July 2016.

63. On August 16, 2016, Relative A-1 deposited $500 in cash into her Bank of America account ending in 4340.

64. On August 17, 2016, pursuant to the consulting agreement, Chairman D's relative sent the third wire payment of $11,000 to Company A, to a Union Bank account ending in 6345.

Real Estate Report #4

65. On September 2, 2016, defendant CHIANG met with Councilmember A at a coffee shop in Los Angeles, where defendant CHIANG delivered his fourth real estate report.

66. On September 8, 2016, Councilmember A met with Councilmember A's Associate and delivered the fourth real estate report he received from defendant CHIANG.

67. On September 8, 2016, Councilmember A's Associate caused his employee to send an email to Chairman D's relative transmitting the fourth report and fourth invoice for August 2016.

68. On September 9, 2016, pursuant to the consulting agreement, Chairman D's relative sent the fourth wire payment of $11,000 to Company A, to a Union Bank account ending in 6345.

69. On September 15, 2016, Relative A-1 deposited $500 in cash into her Bank of America account ending in 4340.

Real Estate Report #5

70. On October 4, 2016, defendant CHIANG met with Councilmember A at Councilmember A's residence, where defendant CHIANG delivered his fifth real estate report.

71. On October 14, 2016, Councilmember A met with Councilmember A's Associate over breakfast and delivered the fifth real estate report he received from defendant CHIANG.

72. On October 14, 2016, Councilmember A's Associate caused his employee to send an email to Chairman D's relative transmitting the fifth report and fifth invoice for September 2016.

73. On November 9, 2016, Relative A-1 deposited $800 in cash into her Bank of America account ending in 4340.

74. On November 14, 2016, pursuant to the consulting agreement, Chairman D's relative sent the fifth wire payment of $11,000 to Company A, to a Union Bank account ending in 6345.

Real Estate Report #6

75. On November 3, 2016, defendant CHIANG met with Councilmember A at a coffee shop in Los Angeles, where defendant CHIANG delivered his sixth and final real estate report.

76. On November 3, 2016, Councilmember A met with Councilmember A's Associate and delivered the sixth real estate report he received from defendant CHIANG.

77. On November 22, 2016, Councilmember A, in his official capacity, presented a written motion in the Economic Development committee to benefit Project D.

78. On November 23, 2016, Councilmember A's Associate caused his employee to send an email to Chairman D's relative transmitting the sixth report and sixth invoice for October 2016.

79. On November 30, 2016, pursuant to the consulting agreement, Chairman D's relative sent the sixth wire payment of $11,000 to Company A, to a Union Bank account ending in 6345.

80. On December 2, 2016, Relative A-1 deposited $1,000 in cash into her Bank of America account ending in 4340.

81. On December 6, 2016, Relative A-1 deposited $500 in cash into her Bank of America account ending in 4340.

82. On December 9, 2016, defendant CHIANG and Councilmember A met to discuss Councilmember A's filing of the Project D motion in exchange for retainer fees facilitated by defendant CHIANG, Chairman D, and General Manager D to Councilmember A's Associate.

83. On December 10, 2016, defendant CHIANG and Individual 1 discussed not disclosing that defendant CHIANG had told Individual 1 the arrangement Councilmember A had with Company D. Specifically, defendant CHIANG sent a text message to Individual 1, writing: "please don't tell [Councilmember A] [I] told you about the meeting I had with him. He told me not to tell anyone even [City Staffer A-1]."

84. On December 13, 2016, the City Council adopted the Project D motion Councilmember A presented. Councilmember A voted "yes" on the matter in City Council.

85. On December 13, 2016, defendant CHIANG, Councilmember A, and General Manager D met at the site of Project D to discuss Project D and Councilmember A's agreement to expedite the project going forward.

86. On December 21, 2016, Relative A-1 deposited $500 in cash into her Bank of America account ending in 4340.

c) Additional Benefits to Councilmember A and Other Officials in Exchange for Official Acts

87. In or around April 2017, at Councilmember A's request, defendant CHIANG organized and coordinated a trip for Councilmember A and his family members to visit Chairman D in China. Defendant CHIANG coordinated and paid approximately $500 for visa fees, and arranged for transportation for Councilmember A and his family in Hong Kong.

88. Between April 15, 2017 and April 23, 2017, Councilmember A and his family visited Chairman D in Hong Kong and China. Chairman D paid for certain transportation, meals, and lodging for Councilmember A and his family members.

89. On April 27, 2017, at Councilmember A's request, defendant CHIANG provided concert tickets to Councilmember A worth approximately $1,572.

90. On May 2, 2017, in a telephone call, defendant CHIANG and City Staffer A-1 discussed the mutually beneficial financial relationship between Chinese developers and Councilmember A and Individual 1. Specifically, City Staffer A-1 told defendant CHIANG: "Looking from your perspective, you bank on [Individual 1], and [Councilmember A]'s office to do, one of the main points with [Councilmember A], for your Chinese clients for example, 'entitlements, PLUM,' you got to use that and we gotta keep making his motherfucking, him happy."

91. On May 3, 2017, in a telephone call, defendant CHIANG and City Staffer A-1 discussed the possibility of law enforcement detecting their bribery schemes. City Staffer A-1 stated: "If shit does hit the fan, it's like, 'Hey man, we were all told, [Councilmember A] told us to do it.'" Defendant CHIANG responded: "I understand that, but we can really be [Councilmember A]'s accessories because the first thing he is going to do is throw all the dirt on you."

92. On May 10, 2017, in a telephone call, City Staffer A-1 told defendant CHIANG: "So today we had a productive day where [Councilmember A] told [City Staffer A-2], let's streamline the [Company D] project."

93. On May 10, 2017, in a telephone call, City Staffer A-1 told defendant CHIANG: "[Councilmember A's] approach is that he's going to um, strong arm everyone ... to the PAC. [Company D], [another company]. 'This is what I want right now. This is my wife, this is

what we are doing.' So his idea in his mind is that okay, people are going to support us because they don't want people to fuck with projects, you know."

94. On May 13, 2017, via a text message conversation, Councilmember A expressed his eagerness to benefit Chairman D in connection with Project D. Councilmember A wrote to defendant CHIANG: "But the 2 tower is better for chairman [D] and his choice? [Because] if he wanted the 3 towers and that is the best choice, we can make that happen."

95. On May 19, 2017, at Councilmember A's request, defendant CHIANG paid approximately $1,000 for alcohol for a party for Councilmember A's relative.

96. On May 21, 2017, City Staffer A-1 requested event tickets from defendant CHIANG for City Staffer A-2, who had been working on Project D. Specifically, City Staffer A-1 wrote: "Also, can we please work on three tickets for lakers? Any game. Want to take care of [City Staffer A-2]. I can let [City Staffer A-2] know u were the one getting him 4 tickets." On May 22, 2017, defendant CHIANG purchased four Lakers tickets for approximately $630, and subsequently gave the tickets to City Staffer A-1 to provide to City Staffer A-2.

97. On June 11, 2017, in a telephone call, defendant CHIANG and City Staffer A-1 again discussed the possibility of law enforcement detecting their bribery schemes. City Staffer A-1 stated: "[E]veryone already knows man, if [Councilmember A] gets busted, which most likely he will, he'll be like, '[City Staffer A-1] did it,' or '[Businessperson A] did it,' or, you know, '[another person]

did it,' or 'Chairman did it.'" In response, defendant CHIANG stated that "for everybody to kind of be part of it is dangerous."

98. On June 19, 2017, at Councilmember A's request, defendant CHIANG provided concert tickets to Councilmember A worth $1,670.

99. On June 23, 2017, in a telephone call, defendant CHIANG and Kim discussed using Councilmember A's influence as a councilmember going forward and Councilmember A's requests for financial benefits. Specifically, Kim stated: "this is my agenda, not only do I want to make money, GEORGE [CHIANG], I want to show you and other Chinese developer, assuming [Councilmember A] is there, how much motivation he's going to have to push everything around for my project, those are my agenda." In response, defendant CHIANG asked if Councilmember A understood "what he needs to do in three and a half years." Kim replied: "Yes, yes. Everything is set. You're gonna see some differences, alright GEORGE?" Defendant CHIANG then asked to meet with Kim, stating that Councilmember A was asking for "some very stupid requests." Kim responded: "I'm not going to make a comment," to which defendant CHIANG stated: "Yeah, let's not talk about this on the phone."

100. On August 24, 2017, defendant CHIANG again asked for Councilmember A's help on Project D. Specifically, defendant CHIANG sent a text message to Councilmember A, writing: "Hi Boss, wanted to give you heads up: [A Company D employee] spoke to chairman [D] and CPC [City Planning Commission] needs to be 9/14/17 otherwise the loan commitment from lender will be lost for the project." The next day, defendant CHIANG again sent a message to Councilmember A, writing: "Hi Boss, we met with planning yesterday and went through the outstanding items for 9/14/17 CPC. We would need a motion from your

office to direct the TFAR allocation by next week before council recess to make the 9/14/17 CPC hearing."

101. On August 24, 2017, in a telephone call, defendant CHIANG told Individual 1: "Do or die, because if we lose the September 14 [CPC hearing date], then we lose all loan commitments from the lender ... you know, probably not looking at a project." Individual 1 responded: "You mentioned to [Councilmember A] this is a big issue." Defendant CHIANG responded: "Yes, yes, I did, I told him ... the motion is very important in order for us to move forward.... We all spoke to the Chairman [D], and the Chairman [D] is willing to make a lot of sacrifices."

102. On September 1, 2017, at defendant CHIANG's request, Councilmember A presented a written motion in the PLUM committee to benefit Company D, allowing Project D to move forward with its application and approval process before the CPC and City Council.

103. On September 1, 2017, Councilmember A notified defendant CHIANG that Councilmember A held up his end of the bargain to help Company D. Specifically, Councilmember A wrote to defendant CHIANG in a text message: "We got the motion in today."

104. In or around September 2017, Councilmember A used his official position to pressure other officials, including officials in the Planning Department and in the Mayor's office, to influence the approval of Project D by the CPC.

105. On September 14, 2017, Councilmember A wrote to defendant CHIANG in a text message: "Congrats. Yeah we [CD-A office] were calling mayors office to tell his commission to calm down. It's expected from cpc they throw a lot of junk at projects these days. Not over but make sure u relay to chairman [D] that we were helpful."

106. On September 14, 2017, in a telephone call, Councilmember A told defendant CHIANG: "You know, whatever it was, we'll fix it in PLUM.... Did the boss [Chairman D], you call the boss [Chairman D] already? ... Did you tell him that my office was helpful?" Defendant CHIANG responded: "I told [Chairman D] everything." Councilmember A then stated: "Okay, cool, cool, cool. Good, good.... Do we have a schedule for PLUM already?"

107. In or around November 2017, Councilmember A asked defendant CHIANG to make a commitment on behalf of Company D to contribute $100,000 to Relative A-1's campaign in exchange for continued favorable official acts by Councilmember A to benefit Project D. Defendant CHIANG, on behalf of Company D, told Councilmember A he could confirm Chairman D's commitment of $100,000 to PAC A.

108. On December 5, 2017, the PLUM Committee, including Councilmember A, voted to approve Project D.

109. On December 12, 2017, the City Councilmembers present at a hearing voted to adopt the PLUM Committee report for Project D, which approved the entitlements and allowed Company D to move forward in the City approval process.

110. In early 2018, defendant CHIANG provided approximately $800 in cash to City Staffer A-1.

111. On January 24, 2018, defendant CHIANG, Chairman D, Individual 1, Councilmember A, and Relative A-1 met for dinner at Chairman D's hotel in San Gabriel, California. At the dinner, Chairman D pledged his commitment and support for Relative A-1's campaign for the CD-A seat.

112. On February 12, 2018, via a text message conversation, Councilmember A and defendant CHIANG further confirmed the agreement

to have Company D contribute to PAC A to benefit Relative A-1's campaign. Councilmember A wrote to defendant CHIANG: "fundraiser for PAC will call u today."

113. On March 9, 2018, Councilmember A submitted a resolution in the PLUM Committee to benefit Company D, allowing Project D to move forward in its approval process.

114. On March 20, 2018, the City Councilmembers present at a hearing voted to adopt the Company D resolution submitted by Councilmember A on March 9, 2018.

115. On March 29, 2018, defendant CHIANG and Councilmember A met at Councilmember A's residence to discuss Company D's support and the $100,000 contribution to the PAC to benefit Relative A-1's campaign. Later the same day, Councilmember A acknowledged defendant CHIANG's agreement to facilitate a contribution to Relative A-1's campaign, writing in a text message to defendant CHIANG: "Thanks again for all your help."

116. On April 23, 2018, defendant CHIANG wrote to Individual 1 via text message: "Below are items I'm talking to [Councilmember A] about: 1) tell [Councilmember A] that [Chairman D] is coming in June, we can talk about the PAC at that time."

117. On April 23, 2018, defendant CHIANG and Councilmember A met at Councilmember A's residence to discuss Councilmember A's continued support for Project D in exchange for Company D's agreement to contribute $100,000 to PAC A to benefit Relative A-1's campaign.

118. On May 18, 2018, defendant CHIANG and Individual 1 met with Councilmember A for breakfast at a restaurant in Boyle Heights. Councilmember A stated that he needed the PAC contribution as soon as possible. Councilmember A stated he wanted the contribution now so

that when Relative A-1 announced her candidacy, she would have money to pour into the campaign and scare everyone else from running against her. Councilmember A stated that other developers already contributed in amounts of $50,000, $100,000, and $200,000.

119. On June 12, 2018, the City Council, including Councilmember A, voted to approve the Development Agreement for Project D. The same day, Councilmember A wrote to defendant CHIANG in a text message: "Da [Development Agreement] for [Company D] just passed council today. Does that mean project has been fully entitled? Is that our last vote?"

120. On June 18, 2018, Councilmember A wrote to defendant CHIANG in a text message: "When is the chairman [D] coming in to town? We need to finalize pac stuff. Thanks."

121. On July 30, 2018, the ordinance authorizing the execution of the Development Agreement for Project D went into effect. The same day, Councilmember A wrote to defendant CHIANG in a text message: "any news on when [Chairman D] is coming in to town? Hoping to catch dinner with him and talk about [Relative A-1] campaign." Defendant CHIANG responded: "Hi Boss, [Individual 1] is working on it. I let you know after I see him in office tomorrow."

122. On October 8, 2018, Councilmember A followed up regarding Company D's commitment to PAC A, writing to defendant CHIANG in a text message: "Hey GEORGE [CHIANG]... have time to meet soon to tie up some loose ends re the [Company D] project?"

123. On October 16, 2018, defendant CHIANG and Councilmember A met at Councilmember A's residence and discussed Company D's agreement to contribute to PAC A to benefit Relative A-1's campaign,

as promised, in exchange for Councilmember A taking multiple official acts to benefit Project D.

d) Benefits to Individual 1 in Exchange for His Official Acts

124. In or around January 2017, while Individual 1 was the Deputy Mayor for Economic Development, defendant CHIANG, Individual 1, and Individual 1's relative strategized to have Synergy, defendant CHIANG's consulting firm, take over navigating the City approval process for Project D. Defendant CHIANG negotiated a lucrative consulting contract with Company D that included a monthly retainer of $35,000. The consulting contract was later modified to include three significant milestone bonus payments: (1) $100,000 for successfully completing a Planning Department advisory hearing in May 2017; (2) $150,000 for CPC approval in September 2017; and (3) $185,000 for PLUM Committee and City Council approval in December 2017. Defendant CHIANG agreed with Individual 1 to pay a portion of these fees to Individual 1, in exchange for Individual 1's assistance on Project D in Individual 1's official capacity as Deputy Mayor. As Deputy Mayor, Individual 1 exerted power over and influence on various City departments, including the Planning Department and the CPC.

125. On January 2, 2017, Individual 1 sent an email to defendant CHIANG and Individual 1's relative, with an attached chart depicting "People Who Influence the Project." The "Elected Officials" who influenced the project included Councilmember A and others.

126. On January 13, 2017, defendant CHIANG, Individual 1, and Individual 1's relative discussed Synergy taking control of the City approval process for Project D. Defendant CHIANG wrote in a group text message: "met with chairman [D] again today. He had already

instructed us to move forward on the project. I need to spend some time and lay everything out. So I need to skip training tomorrow to put my thoughts into context and send it to you and [Individual 1's relative]. Also, my retainer has been confirmed verbally so I need [Individual 1's relative] to modify it on paper for signature. Thank you!" Individual 1 responded: "No problem. We should meet after you put your thoughts together."

127. On January 26, 2017, defendant CHIANG discussed Synergy taking over Project D with Individual 1 and another consultant. Specifically, defendant CHIANG wrote to Individual 1 and Synergy Consultant in a text message: "everything went as planned. Chairman [D] spent the first part of meeting yelling at everything about how their current approach is wrong. Now Synergy takes full control. Then he walked out. The meeting was productive."

128. On February 3, 2017, defendant CHIANG sent a text message to Individual 1, writing: "Meeting with chairman [D] was good report to you tomorrow. Thank you!"

129. On February 8, 2017, Individual 1, using his power and influence as the Deputy Mayor, coordinated a meeting between the Deputy Planning Director and representatives of Company D, including defendant CHIANG and Chairman D.

130. On or around March 13, 2017, Individual 1 used his official position as the Deputy Mayor to pressure subordinate City officials to take favorable official actions on Project D. Specifically, on March 13, 2017, Individual 1 sent a group text message to defendant CHIANG, Individual 1's relative, and Synergy Consultant: "Hi [Synergy Consultant], talked to [a Fire Department official] about travel distance and tract map. He still help. Make sure we pay expedite for

the the fire review of three tract map. [...] Still wait for [a Transportation Department official] to call back." Defendant CHIANG responded: "Thank you [Brother]!" Synergy Consultant responded: "You are the greatest...I will call [the Fire Department official] first."

131. On March 28, 2017, defendant CHIANG informed Individual 1 about his negotiations with Company D on the Synergy consulting payments, in which Individual 1 had a vested interest, specifically the agreement to receive a portion of the consulting fees and bonus payments. Specifically, defendant CHIANG wrote to Individual 1 in a text message: "Last night I spoke to chairman [D] about late monthly payment and stop of service he said it was all misunderstanding asked me to go to [Company D] office this afternoon. Let me know if you want to have meeting today? Completely up to you but I will drop by regardless to drop everything off. Thank you!"

132. On March 28, 2017, Company D paid Synergy a monthly retainer fee of $35,000 by check.

133. On March 28, 2017, Company D paid Synergy $46,666 by check as back pay for monthly retainers for February 2017 and January 2017.

134. On May 11, 2017, Individual 1 reached out to Planning Commission Official by text message from Individual 1's personal cell phone to Planning Commission Official's personal cell phone. Individual 1 requested a meeting with Planning Commission Official in Hollywood, instead of Planning Commission Official's office.

135. On May 12, 2017, Individual 1 and Planning Commission Official met in Hollywood to discuss the upcoming CPC hearing for Project D. Planning Commission Official had the ability to impose requirements on Project D that would increase costs for Company D. Planning Commission Official also needed to vote to approve the

project at the CPC hearing. At the meeting, Individual 1, in his capacity as Deputy Mayor, exerted pressure over a Mayor-appointed public official to influence Planning Commission Official's official actions. Specifically, Individual 1 urged Planning Commission Official to approve Project D. Individual 1's motivation in convincing Planning Commission Official to vote to approve the project was to obtain a portion of defendant CHIANG's consulting fees from Company D for successfully reaching the CPC hearing benchmark.

136. On May 18, 2017, Company D issued a $100,000 check as the first bonus payment to Synergy for successfully reaching the Planning Department advisory hearing scheduled on May 24, 2017.

137. Consistent with his agreement to share the bonus payment with Individual 1, defendant CHIANG asked Individual 1 if Individual 1 wanted his share of the first bonus payment in check form. Individual 1 told defendant CHIANG to wait until later and that he preferred getting a bigger check at a later date.

138. On or around June 22, 2017, in a telephone call, Individual 1 asked defendant CHIANG "when are you going to ... get the cash for me for the 20 grand?" Defendant CHIANG responded, "I got it sitting in the car," referring to $20,000 cash. Individual 1 then instructed defendant CHIANG to "just keep it there for now."

139. On June 30, 2017, Individual 1 retired from the City as a public official.

140. On or around August 3, 2017, during the time in which City laws prohibited Individual 1 from lobbying City officials, defendant CHIANG, Individual 1, and City Staffer D, who worked as a staff member for City Councilmember D, met at Individual 1 and defendant CHIANG's office to discuss Project D. Individual 1 asked City

Staffer D to speak to Mayor Staffer 1 to ask Mayor Staffer 1 to put pressure on the CPC to approve Project D. City Staffer D agreed to do so.

141. On or about August 8, 2017, Individual 1 had a meeting with City Staffer D's relative in downtown Los Angeles at the office of CCC Investment. At the meeting, Individual 1 and City Staffer D's relative discussed an arrangement for a consulting agreement that would pay City Staffer D's relative.

142. On or about August 29, 2017, at Individual 1's request, defendant CHIANG executed a consulting agreement between CCC Investment and City Staffer D's relative. The consulting agreement provided for compensation of $1,000 per month, effective September 1, 2017, for four consecutive months. At Individual 1's request, between October 2017 and December 2017, CCC Investment ultimately paid City Staffer D's relative approximately $2,000 for "consulting services."

143. On August 11, 2017, during the time in which City laws prohibited Individual 1 from lobbying City officials, Individual 1 discussed the plan for Individual 1 and defendant CHIANG to "run[] the show" on Project D. Specifically, Individual 1 sent a group text message to defendant CHIANG and Synergy Consultant: "Good morning [Synergy Consultant], can you please email me whatever you have drafted on our proposal in handling the permits for Company D? GEORGE [CHIANG] and I may talk to Chairman [D] today. The purpose is just to convince him that we will be the one running the show."

144. On August 19, 2017, Individual 1 texted defendant CHIANG: "Working on a 1 pager, in English and Chinese, that layouts all the departments, permits, and clearances for the [Company D] project.

Chairman [D].” Individual 1 then added: “To show the complexity of our work. Will be done tomorrow. Then you revise and w chat to him. That will be our tool for discussion.”

145. On September 13, 2017, in a telephone call, Individual 1 confirmed that he worked on Project D as Deputy Mayor and that he was prohibited from appearing at the CPC hearing for the project. Specifically, an associate asked Individual 1: “Are you going to the CPC meeting tomorrow for [Company D]?” Individual 1 replied: “No, no, absolutely not. You know this is right now I’m not really involved with that part. Because that part they started when I was still in the Mayor’s office. Because I cannot, I cannot.”

146. On September 14, 2017, in a telephone call, Individual 1 confirmed that he worked on Project D for the prior nine months, including while serving as Deputy Mayor. Specifically, Individual 1 told an associate: “Oh my God, you know we were, we were working so hard the last nine months. This is big, this is [Company D], this is $700 million project, man, I’m telling you.” The associate replied: “[Chairman D] better really treat you well when you go to visit him.” Individual 1 responded: “Let’s put it this way, we are good, but we’re not cheap. Let’s put it this way, the check is coming, that’s the huge thing, okay?”

147. On September 14, 2017, Individual 1 confirmed that Individual 1 influenced Company D’s CPC approval and that Individual 1 expected a second bonus payment from Company D, in the form of a portion of defendant CHIANG’s bonus, for reaching the second CPC hearing milestone. Specifically, after the CPC approval, Individual 1 sent a text message to his relative, writing: “CPC approved [Project D]! We are moving on to PLUM.” Individual 1’s

relative responded: “Good news for milestones,” referring to the bonus payments. Individual 1 then wrote: “[Mayor Official 1] and [Mayor Official 2] talked to the commissioners. [City Staffer D] asked [Mayor Staffer 1]. You know who asked [City Staffer D].” Individual 1’s relative responded: “Congrats!” Individual 1 answered: “To all of us! Still waiting for the 2nd payment.”

148. On September 14, 2017, in a telephone call, Individual 1 told an associate: “The big job, the [Company D] job, they approved it in Planning Commission, but we were so worried because there is, there’s a thick head, who is the uh, who’s the president of the Commission. And uhhh, luckily, we use, we pull all the political, you know, chains, we got the Council, we got the Mayor’s office, talked to him and so, so you know, he modified the conditions a little bit but it’s still good, okay. So we’re very happy, very happy.” The associate replied: “In LA does it mean that it still has to go to the Council?” Individual 1 responded: “It has to go to PLUM, is the Planning and Land Use Committee, which is a Council Committee, and then go to Council, but those are easy, those are all good brothers, okay? This is the toughest one.”

149. On October 19, 2017, Company D issued a $150,000 check as the second bonus payment to Synergy for Project D successfully completing the CPC hearing on September 14, 2017.

150. On December 14, 2017, Company D issued a $185,000 check as the third bonus payment to Synergy for Project D successfully completing the PLUM hearing on December 5, 2017, and the City Council hearing on December 12, 2017.

151. Between January 2017 and December 2017, Company D paid Synergy approximately $772,536 in consulting fees and bonuses for its

work on Project D. During that time period, Synergy paid Individual 1's Company $93,939.97, and Individual 1's relative $19,000. This approximately $112,000 paid by defendant CHIANG through Synergy indirectly to Individual 1 was in exchange for Individual 1's actions in shepherding Project D through the various City approval processes while Individual 1 was Deputy Mayor.

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CLERK, U.S. DISTRICT COURT
05/13/2020
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BY: AP DEPUTY

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UNITED STATES OF AMERICA

UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, Plaintiff, v. GEORGE CHIANG, Defendant.	No. CR 2:20-cr-00203-PA COOPERATION PLEA AGREEMENT FOR DEFENDANT GEORGE CHIANG

1. This constitutes the plea agreement between GEORGE CHIANG ("defendant") and the United States Attorney's Office for the Central District of California ("the USAO") in the above-captioned case. This agreement is limited to the USAO and cannot bind any other federal, state, local, or foreign prosecuting, enforcement, administrative, or regulatory authorities.

DEFENDANT'S OBLIGATIONS

2. Defendant agrees to:

a. Give up the right to indictment by a grand jury and, at the earliest opportunity requested by the USAO and provided by the Court, appear and plead guilty to a one-count information in the form attached to this agreement as Exhibit 1 or a substantially similar form, which charges defendant with Racketeer Influenced and Corrupt Organization ("RICO") Conspiracy, in violation of 18 U.S.C. § 1962(d).

b. Not contest the Factual Basis agreed to in this agreement.

c. Abide by all agreements regarding sentencing contained in this agreement.

d. Appear for all court appearances, surrender as ordered for service of sentence, obey all conditions of any bond, and obey any other ongoing court order in this matter.

e. Not commit any crime; however, offenses that would be excluded for sentencing purposes under United States Sentencing Guidelines ("U.S.S.G." or "Sentencing Guidelines") § 4A1.2(c) are not within the scope of this agreement.

f. Be truthful at all times with the United States Probation and Pretrial Services Office and the Court.

g. Pay the applicable special assessment at or before the time of sentencing unless defendant has demonstrated a lack of ability to pay such assessment.

3. Defendant further agrees to cooperate fully with the USAO, the Federal Bureau of Investigation ("FBI"), and, as directed by the USAO, any other federal, state, local, or foreign prosecuting, enforcement, administrative, or regulatory authority. This cooperation requires defendant to:

a. Respond truthfully and completely to all questions that may be put to defendant, whether in interviews, before a grand jury, or at any trial or other court proceeding.

b. Attend all meetings, grand jury sessions, trials or other proceedings at which defendant's presence is requested by the USAO or compelled by subpoena or court order.

c. Produce voluntarily all documents, records, or other tangible evidence relating to matters about which the USAO, or its designee, inquires.

4. For purposes of this agreement: (1) "Cooperation Information" shall mean any statements made, or documents, records, tangible evidence, or other information provided, by defendant pursuant to defendant's cooperation under this agreement or pursuant to the letter agreement previously entered into by the parties dated December 21, 2018 (the "Letter Agreement"); and (2) "Plea Information" shall mean any statements made by defendant, under oath, at the guilty plea hearing and the agreed to factual basis statement in this agreement.

THE USAO'S OBLIGATIONS

5. The USAO agrees to:

a. Not contest the Factual Basis agreed to in this agreement.

b. Abide by all agreements regarding sentencing contained in this agreement.

c. At the time of sentencing, provided that defendant demonstrates an acceptance of responsibility for the offenses up to and including the time of sentencing, recommend a two-level reduction in the applicable Sentencing Guidelines offense level, pursuant to

U.S.S.G. § 3E1.1, and recommend and, if necessary, move for an additional one-level reduction if available under that section.

6. The USAO further agrees:

a. Not to offer as evidence in its case-in-chief in the above-captioned case or any other criminal prosecution that may be brought against defendant by the USAO, or in connection with any sentencing proceeding in any criminal case that may be brought against defendant by the USAO, any Cooperation Information. Defendant agrees, however, that the USAO may use both Cooperation Information and Plea Information: (1) to obtain and pursue leads to other evidence, which evidence may be used for any purpose, including any criminal prosecution of defendant; (2) to cross-examine defendant should defendant testify, or to rebut any evidence offered, or argument or representation made, by defendant, defendant's counsel, or a witness called by defendant in any trial, sentencing hearing, or other court proceeding; and (3) in any criminal prosecution of defendant for false statement, obstruction of justice, or perjury.

b. Not to use Cooperation Information against defendant at sentencing for the purpose of determining the applicable guideline range, including the appropriateness of an upward departure, or the sentence to be imposed, and to recommend to the Court that Cooperation Information not be used in determining the applicable guideline range or the sentence to be imposed. Defendant understands, however, that Cooperation Information will be disclosed to the United States Probation and Pretrial Services Office and the Court, and that the Court may use Cooperation Information for the purposes set forth in U.S.S.G § 1B1.8(b) and for determining the sentence to be imposed.

c. In connection with defendant's sentencing, to bring to the Court's attention the nature and extent of defendant's cooperation.

d. If the USAO determines, in its exclusive judgment, that defendant has both complied with defendant's obligations under paragraphs 2 and 3 above and provided substantial assistance to law enforcement in the prosecution or investigation of another ("substantial assistance"), to move the Court pursuant to U.S.S.G. § 5K1.1 to fix an offense level and corresponding guideline range below that otherwise dictated by the sentencing guidelines, and to recommend a term of imprisonment within this reduced range.

DEFENDANT'S UNDERSTANDINGS REGARDING COOPERATION

7. Defendant understands the following:

a. Any knowingly false or misleading statement by defendant will subject defendant to prosecution for false statement, obstruction of justice, and perjury and will constitute a breach by defendant of this agreement.

b. Nothing in this agreement requires the USAO or any other prosecuting, enforcement, administrative, or regulatory authority to accept any cooperation or assistance that defendant may offer, or to use it in any particular way.

c. Defendant cannot withdraw defendant's guilty plea if the USAO does not make a motion pursuant to U.S.S.G. § 5K1.1 for a reduced guideline range or if the USAO makes such a motion and the Court does not grant it or if the Court grants such a USAO motion but elects to sentence above the reduced range.

d. At this time the USAO makes no agreement or representation as to whether any cooperation that defendant has

provided or intends to provide constitutes or will constitute substantial assistance. The decision whether defendant has provided substantial assistance will rest solely within the exclusive judgment of the USAO.

e. The USAO's determination whether defendant has provided substantial assistance will not depend in any way on whether the government prevails at any trial or court hearing in which defendant testifies or in which the government otherwise presents information resulting from defendant's cooperation. That is, whether any other person, after trial, is found guilty or not guilty of any offense will have no effect on the government's sentencing recommendation for defendant.

NATURE OF THE OFFENSES

8. Defendant understands that for defendant to be guilty of the crime charged in count one, that is, RICO Conspiracy, in violation of 18 U.S.C. § 1962(d), the following must be true:

a. First, there was an agreement between two or more persons that: (i) an enterprise, namely, the CD-A Enterprise would exist, as alleged in the Information; and (ii) a member of the agreement associated with the CD-A Enterprise would conduct or participate, directly or indirectly, in the conduct of the CD-A Enterprise affairs through a pattern of racketeering activity, as described in the Information;

b. Second, defendant became a member of the agreement knowing of its purpose and agreeing to further or facilitate it; and

c. Third, the CD-A Enterprise would or did engage in, or its activities would or did affect, interstate or foreign commerce. An "enterprise" includes a group of people associated together for a

common purpose of engaging in a course of conduct over a period of time. "Racketeering activity" refers to the commission of multiple acts chargeable under provisions of federal and state law listed in the RICO Act, including Honest Services Fraud through Mail and Wire Fraud, in violation of 18 U.S.C. §§ 1346, 1341, and 1343, and Giving or Offering a Bribe, in violation of California Penal Code § 67, and Requesting or Taking a Bribe, in violation of California Penal Code § 68. A "pattern of racketeering activity" is at least two racketeering acts, the last of which occurred within ten years of the commission of a prior act of racketeering, that have a relationship to each other and pose a threat of continuity. Conduct forms a pattern if it consists of criminal acts that have the same or similar purposes, results, participants, victims, or methods of commission, or otherwise are interrelated by distinguishing characteristics and are not isolated. Defendant admits that defendant is, in fact, guilty of this offense as described in count one of the Information.

PENALTIES

9. Defendant understands that the statutory maximum sentence that the Court can impose for a violation of 18 U.S.C. § 1962(d) is: 20 years' imprisonment; a 3-year period of supervised release; a fine of $250,000 or twice the gross gain or gross loss resulting from the offense, whichever is greatest; and a mandatory special assessment of $100.

10. Defendant understands that supervised release is a period of time following imprisonment during which defendant will be subject to various restrictions and requirements. Defendant understands that if defendant violates one or more of the conditions of any supervised release imposed, defendant may be returned to prison for all or part

of the term of supervised release authorized by statute for the offense that resulted in the term of supervised release, which could result in defendant serving a total term of imprisonment greater than the statutory maximum stated above.

11. Defendant understands that, by pleading guilty, defendant may be giving up valuable government benefits and valuable civic rights, such as the right to vote, the right to possess a firearm, the right to hold office, and the right to serve on a jury. Defendant understands that he is pleading guilty to a felony and that it is a federal crime for a convicted felon to possess a firearm or ammunition. Defendant understands that the conviction in this case may also subject defendant to various other collateral consequences, including but not limited to revocation of probation, parole, or supervised release in another case and suspension or revocation of a professional license. Defendant understands that unanticipated collateral consequences will not serve as grounds to withdraw defendant's guilty plea.

FACTUAL BASIS

12. Defendant admits that defendant is, in fact, guilty of the offense to which defendant is agreeing to plead guilty. Defendant and the USAO agree to the statement of facts attached hereto as Attachment A and agree that this statement of facts is sufficient to support a plea of guilty to the charge described in this agreement and to establish the Sentencing Guidelines factors set forth in paragraph 14 below but is not meant to be a complete recitation of all facts relevant to the underlying criminal conduct or all facts known to either party that relate to that conduct.

SENTENCING FACTORS

13. Defendant understands that in determining defendant's sentence the Court is required to calculate the applicable Sentencing Guidelines range and to consider that range, possible departures under the Sentencing Guidelines, and the other sentencing factors set forth in 18 U.S.C. § 3553(a). Defendant understands that the Sentencing Guidelines are advisory only, that defendant cannot have any expectation of receiving a sentence within the calculated Sentencing Guidelines range, and that after considering the Sentencing Guidelines and the other § 3553(a) factors, the Court will be free to exercise its discretion to impose any sentence it finds appropriate up to the maximum set by statute for the crime of conviction.

14. Defendant and the USAO agree to the following applicable Sentencing Guidelines factors:

Base Offense Level:	12	U.S.S.G. §§ 2E1.1(a)(2); 2C1.1(a)(1)
More than 1 Bribe:	+2	U.S.S.G. § 2C1.1(b)(1)
Bribe Value >$250,000:	+12	U.S.S.G. §§ 2C1.1(b)(2); 2B1.1(b)(1)(G)
Elected Official:	+4	U.S.S.G. § 2C1.1(b)(3)

Defendant and the USAO reserve the right to argue that additional specific offense characteristics, adjustments, and departures under the Sentencing Guidelines are appropriate.

15. Defendant understands that there is no agreement as to defendant's criminal history or criminal history category.

16. Defendant and the USAO reserve the right to argue for a sentence outside the sentencing range established by the Sentencing

Guidelines based on the factors set forth in 18 U.S.C. § 3553(a)(1), (a)(2), (a)(3), (a)(6), and (a)(7).

WAIVER OF CONSTITUTIONAL RIGHTS

17. Defendant understands that by pleading guilty, defendant gives up the following rights:

a. The right to persist in a plea of not guilty.

b. The right to a speedy and public trial by jury.

c. The right to be represented by counsel – and if necessary have the Court appoint counsel - at trial. Defendant understands, however, that, defendant retains the right to be represented by counsel – and if necessary have the Court appoint counsel – at every other stage of the proceeding.

d. The right to be presumed innocent and to have the burden of proof placed on the government to prove defendant guilty beyond a reasonable doubt.

e. The right to confront and cross-examine witnesses against defendant.

f. The right to testify and to present evidence in opposition to the charges, including the right to compel the attendance of witnesses to testify.

g. The right not to be compelled to testify, and, if defendant chose not to testify or present evidence, to have that choice not be used against defendant.

h. Any and all rights to pursue any affirmative defenses, Fourth Amendment or Fifth Amendment claims, and other pretrial motions that have been filed or could be filed.

WAIVER OF APPEAL OF CONVICTION

18. Defendant understands that, with the exception of an appeal based on a claim that defendant's guilty plea was involuntary, by pleading guilty defendant is waiving and giving up any right to appeal defendant's conviction on the offense to which defendant is pleading guilty. Defendant understands that this waiver includes, but is not limited to, arguments that the statute to which defendant is pleading guilty is unconstitutional, and any and all claims that the statement of facts provided herein is insufficient to support defendant's plea of guilty.

LIMITED MUTUAL WAIVER OF APPEAL OF SENTENCE

19. Defendant agrees that, provided the Court imposes a total term of imprisonment of no more than 70 months, defendant gives up the right to appeal all of the following: (a) the procedures and calculations used to determine and impose any portion of the sentence; (b) the term of imprisonment imposed by the Court; (c) the fine imposed by the Court, provided it is within the statutory maximum; (d) to the extent permitted by law, the constitutionality or legality of defendant's sentence, provided it is within the statutory maximum; (e) the term of probation or supervised release imposed by the Court, provided it is within the statutory maximum; and (g) any of the following conditions of probation or supervised release imposed by the Court: the conditions set forth in General Order 20-04 of this Court; the drug testing conditions mandated by 18 U.S.C. §§ 3563(a)(5) and 3583(d).

20. The USAO agrees that, provided all portions of the sentence are at or below the statutory maximum specified above, the USAO gives up its right to appeal any portion of the sentence.

RESULT OF WITHDRAWAL OF GUILTY PLEA

21. Defendant agrees that if, after entering a guilty plea pursuant to this agreement, defendant seeks to withdraw and succeeds in withdrawing defendant's guilty plea on any basis other than a claim and finding that entry into this plea agreement was involuntary, then (a) the USAO will be relieved of all of its obligations under this agreement, including in particular its obligations regarding the use of Cooperation Information; (b) in any investigation, criminal prosecution, or civil, administrative, or regulatory action, defendant agrees that any Cooperation Information and any evidence derived from any Cooperation Information shall be admissible against defendant, and defendant will not assert, and hereby waives and gives up, any claim under the United States Constitution, any statute, or any federal rule, that any Cooperation Information or any evidence derived from any Cooperation Information should be suppressed or is inadmissible.

EFFECTIVE DATE OF AGREEMENT

22. This agreement is effective upon signature and execution of all required certifications by defendant, defendant's counsel, and an Assistant United States Attorney.

BREACH OF AGREEMENT

23. Defendant agrees that if defendant, at any time after the signature of this agreement and execution of all required certifications by defendant, defendant's counsel, and an Assistant United States Attorney, knowingly violates or fails to perform any of defendant's obligations under this agreement ("a breach"), the USAO may declare this agreement breached. For example, if defendant knowingly, in an interview, before a grand jury, or at trial, falsely

accuses another person of criminal conduct or falsely minimizes defendant's own role, or the role of another, in criminal conduct, defendant will have breached this agreement. All of defendant's obligations are material, a single breach of this agreement is sufficient for the USAO to declare a breach, and defendant shall not be deemed to have cured a breach without the express agreement of the USAO in writing. If the USAO declares this agreement breached, and the Court finds such a breach to have occurred, then:

a. If defendant has previously entered a guilty plea pursuant to this agreement, defendant will not be able to withdraw the guilty plea.

b. The USAO will be relieved of all its obligations under this agreement; in particular, the USAO: (i) will no longer be bound by any agreements concerning sentencing and will be free to seek any sentence up to the statutory maximum for the crime to which defendant has pleaded guilty; and (iii) will no longer be bound by any agreement regarding the use of Cooperation Information and will be free to use any Cooperation Information in any way in any investigation, criminal prosecution, or civil, administrative, or regulatory action.

c. The USAO will be free to criminally prosecute defendant for false statement, obstruction of justice, and perjury based on any knowingly false or misleading statement by defendant.

d. In any investigation, criminal prosecution, or civil, administrative, or regulatory action: (i) defendant will not assert, and hereby waives and gives up, any claim that any Cooperation Information was obtained in violation of the Fifth Amendment privilege against compelled self-incrimination; and (ii) defendant

agrees that any Cooperation Information and any Plea Information, as well as any evidence derived from any Cooperation Information or any Plea Information, shall be admissible against defendant, and defendant will not assert, and hereby waives and gives up, any claim under the United States Constitution, any statute, Rule 410 of the Federal Rules of Evidence, Rule 11(f) of the Federal Rules of Criminal Procedure, or any other federal rule, that any Cooperation Information, any Plea Information, or any evidence derived from any Cooperation Information or any Plea Information should be suppressed or is inadmissible.

COURT AND UNITED STATES PROBATION AND PRETRIAL SERVICES OFFICE NOT PARTIES

24. Defendant understands that the Court and the United States Probation and Pretrial Services Office are not parties to this agreement and need not accept any of the USAO's sentencing recommendations or the parties' agreements to facts or sentencing factors.

25. Defendant understands that both defendant and the USAO are free to: (a) supplement the facts by supplying relevant information to the United States Probation and Pretrial Services Office and the Court, (b) correct any and all factual misstatements relating to the Court's Sentencing Guidelines calculations and determination of sentence, and (c) argue on appeal and collateral review that the Court's Sentencing Guidelines calculations and the sentence it chooses to impose are not error, although each party agrees to maintain its view that the calculations in paragraph 14 are consistent with the facts of this case. This paragraph permits both the USAO and defendant to submit full and complete factual

information to the United States Probation and Pretrial Services Office and the Court, even if that factual information may be viewed as inconsistent with the Factual Basis agreed to in this agreement.

26. Defendant understands that even if the Court ignores any sentencing recommendation, finds facts or reaches conclusions different from those agreed to, and/or imposes any sentence up to the maximum established by statute, defendant cannot, for that reason, withdraw defendant's guilty plea, and defendant will remain bound to fulfill all defendant's obligations under this agreement. Defendant understands that no one –- not the prosecutor, defendant's attorney, or the Court –- can make a binding prediction or promise regarding the sentence defendant will receive, except that it will be within the statutory maximum.

NO ADDITIONAL AGREEMENTS

27. Defendant understands that, except as set forth herein, there are no promises, understandings, or agreements between the USAO and defendant or defendant's attorney, and that no additional promise, understanding, or agreement may be entered into unless in a writing signed by all parties or on the record in court.

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PLEA AGREEMENT PART OF THE GUILTY PLEA HEARING

28. The parties agree that this agreement will be considered part of the record of defendant's guilty plea hearing as if the entire agreement had been read into the record of the proceeding.

AGREED AND ACCEPTED

UNITED STATES ATTORNEY'S OFFICE
FOR THE CENTRAL DISTRICT OF
CALIFORNIA

NICOLA T. HANNA
United States Attorney

Veronica Dragalin — May 11, 2020

~~MACK E.~~ JENKINS
VERONICA DRAGALIN
Assistant United States Attorneys — Date

5/11/20

GEORGE CHIANG
Defendant — Date

May 11, 2020

STANLEY L. FRIEDMAN
Attorney for Defendant
GEORGE CHIANG — Date

CERTIFICATION OF DEFENDANT

I have read this agreement in its entirety. I have had enough time to review and consider this agreement, and I have carefully and thoroughly discussed every part of it with my attorney. I understand the terms of this agreement, and I voluntarily agree to those terms. I have discussed the evidence with my attorney, and my attorney has advised me of my rights, of possible pretrial motions that might be filed, of possible defenses that might be asserted either prior to or at trial, of the sentencing factors set forth in 18 U.S.C. § 3553(a), of relevant Sentencing Guidelines provisions, and of the consequences of entering into this agreement. No promises, inducements, or representations of any kind have been made to me other than those contained in this agreement. No one has threatened or forced me in any way to enter into this agreement. I am satisfied with the representation of my attorney in this matter, and I am pleading guilty because I am guilty of the charge and wish to take advantage of the promises set forth in this agreement, and not for any other reason.

5/11/20

GEORGE CHIANG
Defendant

Date

CERTIFICATION OF DEFENDANT'S ATTORNEY

I am GEORGE CHIANG's attorney. I have carefully and thoroughly discussed every part of this agreement with my client. Further, I have fully advised my client of his rights, of possible pretrial motions that might be filed, of possible defenses that might be asserted either prior to or at trial, of the sentencing factors set forth in 18 U.S.C. § 3553(a), of relevant Sentencing Guidelines provisions, and of the consequences of entering into this agreement. To my knowledge: no promises, inducements, or representations of any kind have been made to my client other than those contained in this agreement; no one has threatened or forced my client in any way to enter into this agreement; my client's decision to enter into this agreement is an informed and voluntary one; and the factual basis set forth in this agreement is sufficient to support my client's entry of a guilty plea pursuant to this agreement.

STANLEY L. FRIEDMAN
Attorney for Defendant
GEORGE CHIANG

May 11, 2020
Date

ATTACHMENT A

FACTUAL BASIS

A. Background on Relevant Persons and Entities

1. Defendant GEORGE CHIANG ("CHIANG") was a real estate broker and development consultant in the Los Angeles (the "City"). From 2006 to 2014, defendant CHIANG was primarily engaged in property management and the sale of residential and commercial property in the San Gabriel Valley.

2. In or around January 2014, defendant CHIANG met Individual 1 at an event hosted by Company D. Shortly thereafter, Individual 1 invited defendant CHIANG to lunch, where Individual 1 explained that he had been working for the City for nearly 30 years and was a very well respected General Manager of the Los Angeles Department of Building and Safety ("LADBS"). Individual 1 inquired whether defendant CHIANG would be interested in becoming a consultant to downtown Los Angeles area development projects and, if so, stated that Individual 1 would mentor defendant CHIANG and introduce him to important City officials. During the lunch meeting, Individual 1 indicated that his goal was to ensure the success of Chinese projects in Los Angeles, and that defendant CHIANG was qualified and would be a good fit. Defendant CHIANG understood that Individual 1 needed someone who did not work for the City to interface with the Chinese companies. Defendant CHIANG agreed to accept Individual 1's proposal.

3. In or around September 2014, Individual 1 instructed defendant CHIANG to open a corporation in order to accomplish Individual 1's goals. Defendant CHIANG established a corporation offering consulting services under the name Synergy Alliance

Advisors, Inc. ("Synergy"). After defendant CHIANG established Synergy, Individual 1 directed defendant CHIANG on how to interact with City officials with respect to property development and introduced defendant CHIANG to various City officials, including Councilmember A and other elected officials.

4. Beginning in approximately 2014, defendant CHIANG was a close political ally of Councilmember A, the Councilmember for Council District A ("CD-A") in the City, member of the Planning and Land Use Management ("PLUM") committee and member of the Economic Development committee. Defendant CHIANG was also a close political ally of City Staffer A-1, Councilmember A's Special Assistant and employee of the City. Through these relationships, defendant CHIANG developed a business relationship with Justin Kim ("Kim"), a major fundraiser for Councilmember A.

5. Individual 1 was the Deputy Mayor for Economic Development from approximately May 2016 to June 30, 2017.

6. On or around August 1, 2017, Individual 1 created a real estate firm and established a corporation. Individual 1 was the sole owner of Individual 1's Company.

7. On or around August 15, 2017, defendant CHIANG and Individual 1 created a real estate consulting and brokerage firm and established a corporation under the name CCC Investment Group, Inc. ("CCC Investment"). Defendant CHIANG and Individual 1 agreed to be partners of CCC Investment and to share its profits equally.

B. <u>The CD-A Enterprise</u>

8. Throughout the period described in the attached Information, the Council District A Enterprise ("CD-A Enterprise"), located in the City, is and was a criminal enterprise composed of a

group of individuals associated for a common purpose of engaging in a course of conduct, which course includes bribery and honest services fraud to achieve the goals of the enterprise. The goals of the CD-A Enterprise included, but were not limited to:

a. enriching the members and associates of the CD-A Enterprise;

b. advancing the political goals and maintaining the control and authority of the CD-A Enterprise by elevating members and associates of the CD-A Enterprise to, and maintaining those individuals' placement in, prominent political positions;

c. protecting the CD-A Enterprise from detection and prosecution by concealing the financial benefits flowing to City officials, through means that included indirect payments to family members, close associates, and consultants.

9. The CD-A Enterprise was led by Councilmember A, Councilmember for CD-A, who had jurisdiction over a large number of development projects undergoing the application and approval process in the City. Members and associates of the CD-A Enterprise conspired with one another to facilitate bribery schemes that would provide Councilmember A and other City officials financial benefits and keep members in power to maintain the CD-A Enterprise's political stronghold in the City.

10. In exchange, Councilmember A, Individual 1, and members and associates of the CD-A Enterprise, would take official action to ensure certain development projects and CD-A Enterprise associates received favored treatment from the City and thereby secure their bribe-financed influence. In addition, members and associates of the CD-A Enterprise sought political contributions from developers and

their proxies (e.g., lobbyists, consultants, etc.) to benefit Councilmember A and his allies in exchange for official acts to benefit those developers and their proxies, including defendant CHIANG.

11. As a result of its bribery and honest services fraud, throughout the period described in the attached Information, and as known to defendant CHIANG, CD-A Enterprise members and associates engaged in, and their activities in some way affected, commerce between one state and another state.

C. Defendant CHIANG's Role in the CD-A Enterprise

12. Beginning no later than January 2014, and continuing at least until December 2018, defendant CHIANG was a member of the CD-A Enterprise. In that capacity, defendant CHIANG conspired and agreed with other CD-A Enterprise members that a conspirator would commit at least two racketeering acts, in the form of conspiracy to commit bribery and honest services fraud, which acts had a relationship to one another and the CD-A Enterprise, and posed a threat of continued criminal activity. Defendant CHIANG became a member of this conspiracy knowing of this object, knowing it was illegal, and intending to help accomplish it.

13. Defendant CHIANG, along with other members and associates of the CD-A Enterprise, operated and helped to operate pay-to-play schemes within the City, wherein public officials solicited and demanded direct and indirect financial benefits from developers and their proxies in exchange for official acts. Specifically, through a scheme that involved bribery and honest services fraud, defendant CHIANG and Individual 1 offered, facilitated, and provided some combination of the following types of financial benefits to public

officials, among others: (1) cash; (2) consulting and retainer fees; (3) political contributions; (4) event tickets to concerts, shows, and sporting events; and (5) other gifts.

14. In exchange for such financial benefits from developers and their proxies, Councilmember A and Individual 1 agreed to exert and did exert pressure on other City officials to influence the approval process for projects favored by the CD-A Enterprise. In addition, Councilmember A agreed to and did file motions and vote on projects in various City bodies, including City Council and the PLUM Committee, to benefit such projects.

15. In order to advance the goals of and ensure the continued existence of the CD-A Enterprise, defendant CHIANG, City Staffer A-1, Individual 1, and Kim strategized ways to "protect" Councilmember A to ensure Councilmember A's power and relevance within the City. Defendant CHIANG coordinated with Councilmember A, City Staffer A-1, Individual 1, and Kim to ensure a succession plan that would maintain financial opportunities for each of them after Councilmember A's term as Councilmember of CD-A expired in 2020. On multiple occasions, defendant CHIANG discussed with Councilmember A, City Staffer A-1, and Individual 1 the need to ensure Relative A-1 was elected for their own political and financial benefit.

16. Also in furtherance of the racketeering conspiracy, defendant CHIANG facilitated and participated in at least the following schemes.

D. Project D Bribery Schemes

a) Early Corrupt Relationship between Company D and Councilmember A

17. In 2014, Company D, a China-based real estate development

company, through its subsidiaries, acquired Property D located in CD-A and planned to redevelop the property ("Project D").

18. In or around January 2015, defendant CHIANG began working as one of the consultants for Company D on Project D, earning approximately $5,000 per month.

19. Between March 2014 and September 2015, defendant CHIANG and Individual 1 facilitated introductions between Councilmember A and Company D and its Chairman, Chairman D. For example, on November 4, 2014, defendant CHIANG sent an e-mail to City Staffer A-1 with the subject line "Councilmember A Fundraising," writing: "Can you get me in touch with the [Councilmember A]? [Individual 1] and I had dinner with [Company D] last night regarding pledging their support so I want to discuss this to prepare the Councilman's dinner with them this Thursday." In the subsequent months, defendant CHIANG provided in-kind contributions to Councilmember A's re-election campaign, including printers, stamps, and food.

20. In or around September 2015, at Councilmember A's request, Company D contributed $10,000 to a high school gala event.

21. In or about 2015 or 2016, both Councilmember A and City Staffer A-1 asked defendant CHIANG to ask General Manager D to meet with an attorney, with the stated hope that Company D would hire the attorney to provide legal services for Company D. Later, defendant CHIANG learned that Relative A-1 worked at this law firm, when, on February 25, 2016, City Staffer A-1 forwarded to defendant CHIANG a text message from Councilmember A stating that "[Relative A-1] works at [the attorney] law firm."

22. In approximately 2016, at a meeting that defendant CHIANG attended, Councilmember A told Chairman D that there was no need to

involve the City's Mayor in the approval process of Project D because Councilmember A was the one in control of the PLUM committee. Councilmember A stated that the City's Mayor could not provide help to Chairman D and it was Councilmember A who drove the project. In addition, Councilmember A told defendant CHIANG privately to tell Chairman D that as far as Project D was concerned, Chairman D did not need anyone else but Councilmember A. Defendant CHIANG understood this to mean that Councilmember A wanted all of Chairman D's benefits including contributions and money to be directed toward Councilmember A and not other City officials.

b) $66,000 Bribe to Councilmember A in Exchange for Project D Motion

23. Between November 2015 and November 2016, Councilmember A solicited financial benefits from Company D, including from defendant CHIANG (its consultant), Chairman D, and General Manager D, in exchange for Councilmember A's official acts to benefit Project D. Specifically, Chairman D and General Manager D agreed to provide indirect financial benefits to Councilmember A in the form of consulting fees to an associate of Councilmember A in exchange for Councilmember A introducing a motion to benefit Project D. Defendant CHIANG facilitated part of this arrangement, as described further below.

24. On November 11, 2015, defendant CHIANG and Councilmember A, City Staffer A-1, Chairman D, and General Manager D met over dinner at a restaurant in Arcadia, California. At the meeting, defendant CHIANG translated for Councilmember A and Chairman D as they discussed obtaining Councilmember A's support for Project D. In addition, in the same conversation, Councilmember A asked Chairman D

to hire Councilmember A's associate on Project D. Chairman D told Councilmember A to discuss the details with General Manager D.

25. On November 16, 2015, defendant CHIANG sent an email to City Staffer A-1, copying General Manager D, confirming the new agreement between Councilmember A and Chairman D. Defendant CHIANG wrote: "Now with a common consensus in place for [Project D], we would like to roll this project full speed ahead. Therefore, I would like to request the biweekly standing meeting to restart.... From this point on, we would like to communicate all aspects of our project with your [CD-A] office FIRST prior to any other offices in the city family.... [P]lease be ready to coordinate with Mayor's office, Planning Department, and all other related parties so we can drive on a singular track."

26. On December 8, 2015, as part of this new agreement, defendant CHIANG and Councilmember A met in person at a coffee shop in Los Angeles to discuss a consulting agreement to pay one of Councilmember A's associates. At the meeting, defendant CHIANG told Councilmember A that General Manager D would work with Councilmember A on retaining Councilmember A's associate, who defendant CHIANG later learned was Councilmember A's Associate. Councilmember A told defendant CHIANG that Relative A-1 would be involved with getting the retainer consummated.

27. Between December 8, 2015 and December 16, 2015, at a meeting at Property D, General Manager D asked defendant CHIANG if defendant CHIANG's consulting firm Synergy could hire Councilmember A's Associate if, in return, Company D would increase the retainer with Synergy to cover that cost. Defendant CHIANG stated he would

not be involved with this arrangement because he felt it was not legal.

28. On December 16, 2015, defendant CHIANG facilitated an introduction between Relative A-1 and a person he knew at the time as "Auntie," who defendant CHIANG later learned was Chairman D's relative. Defendant CHIANG understood that the two would meet to discuss an arrangement facilitated by Relative A-1 whereby Chairman D's relative's company would pay a company affiliated with Councilmember A's Associate.

29. In May 2016, Company A, a real estate company registered to Councilmember A's Associate's relative, but actually operated by Councilmember A's Associate, and Chairman D's relative's company executed an agreement whereby Company A would purportedly "provide marketing analysis for Real Estate and Land Development Opportunities in the Greater Southern California Area in the total amount of $11,000.00 per month for services rendered. The term of this agreement is one (1) year with one (1) option year." In reality, defendant CHIANG prepared the monthly marketing analysis reports and delivered them to Councilmember A, who then provided them to Councilmember A's Associate, who collected the $11,000 monthly retainer. Defendant CHIANG, Councilmember A, Chairman D, and General Manager D understood that the monthly retainer payments were intended to be and were indirect bribe payments to Councilmember A in exchange for Councilmember A's official acts to benefit Project D.

30. On May 31, 2016, defendant CHIANG and Councilmember A had a conversation via text message regarding Councilmember A obtaining the monthly reports purportedly prepared by Company A (but in fact prepared by defendant CHIANG) pursuant to the consulting agreement

with Chairman D's relative regarding real estate and land development opportunities.

31. **Real Estate Report #1:** On May 31, 2016, defendant CHIANG delivered to Councilmember A his first real estate report that they intended would be passed off as being created by Company A pursuant to its $11,000 per month consulting agreement with Chairman D's relative.

32. **Real Estate Report #2:** On July 1, 2016, defendant CHIANG met with Councilmember A at a coffee shop in Los Angeles, where defendant CHIANG delivered his second real estate report.

33. **Real Estate Report #3:** On August 1, 2016, defendant CHIANG met with Councilmember A at a restaurant in Los Angeles, where defendant CHIANG delivered his third real estate report.

34. **Real Estate Report #4:** On September 2, 2016, defendant CHIANG met with Councilmember A at a coffee shop in Los Angeles, where defendant CHIANG delivered his fourth real estate report.

35. **Real Estate Report #5:** On October 4, 2016, defendant CHIANG met with Councilmember A at Councilmember A's residence, where defendant CHIANG delivered his fifth real estate report.

36. **Real Estate Report #6:** On November 3, 2016, defendant CHIANG met with Councilmember A at a coffee shop in Los Angeles, where defendant CHIANG delivered his sixth and final real estate report.

37. On November 22, 2016, Councilmember A, in Councilmember A's official capacity, presented a written motion in the Economic Development committee to benefit Project D (the "Project D motion").

38. On December 9, 2016, defendant CHIANG and Councilmember A met to discuss Councilmember A's filing of the Project D motion in

exchange for retainer fees facilitated by defendant CHIANG, Chairman D, and General Manager D to Councilmember A's Associate.

39. On December 10, 2016, defendant CHIANG wrote to Individual 1 in a text message: "please don't tell [Councilmember A] [I] told you about the meeting I had with [Councilmember A]. [Councilmember A] told me not to tell anyone even [City Staffer A-1]." Defendant CHIANG was referring to the financial arrangement Councilmember A had with Company D, and believed that Councilmember A did not want to reveal this arrangement with Company D to anyone, including City Staffer A-1.

40. On December 13, 2016, the City Council adopted the Project D motion Councilmember A presented on November 22, 2016. Councilmember A voted "yes" on the matter in City Council.

41. On December 13, 2016, defendant CHIANG, Councilmember A, and General Manager D met at Property D to discuss Project D and Councilmember A's agreement to expedite the project going forward.

c) Additional Benefits to Councilmember A and Other City Officials in Exchange for Official Acts

42. Between April 2017 and October 2018, Councilmember A solicited additional financial benefits from Company D, including from defendant CHIANG and Chairman D, in exchange for Councilmember A's additional official acts to benefit Project D. Specifically, defendant CHIANG and Chairman D agreed to facilitate a trip to China for Councilmember A and Councilmember A's family that was funded, at least in part, by defendant CHIANG and/or Chairman D, committed $100,000 to benefit Relative A-1's campaign for the CD-A seat, provided event tickets and other miscellaneous expenses at Councilmember A's request, in exchange for Councilmember A

facilitating the approval of Project D in the City Planning Commission ("CPC"), and approving Project D in the PLUM Committee, and City Council.

43. In or around April 2017, at Councilmember A's request, defendant CHIANG organized and coordinated a trip for Councilmember A and Councilmember A's family members to visit Chairman D in China. Defendant CHIANG coordinated and paid approximately $500 for visa fees, and arranged for transportation for Councilmember A and the family in Hong Kong.

44. Between April 15, 2017 and April 23, 2017, Councilmember A and Councilmember A's family visited Chairman D in Hong Kong and China.

45. On April 27, 2017, at Councilmember A's request, defendant CHIANG provided concert tickets to Councilmember A worth approximately $1,572.

46. On May 19, 2017, at Councilmember A's request, defendant CHIANG paid approximately $1,000 for alcohol for a party for Councilmember A's relative.

47. On May 21, 2017, City Staffer A-1 requested event tickets from defendant CHIANG for City Staffer A-2, a CD-A staff member, who had been working on Project D. Specifically, City Staffer A-1 wrote: "Also, can we please work on three tickets for lakers? Any game. Want to take care of [City Staffer A-2]. I can let [City Staffer A-2] know u were the one getting him 4 tickets." On May 22, 2017, defendant CHIANG purchased four Lakers tickets for approximately $630, and subsequently gave the tickets to City Staffer A-1 to provide to City Staffer A-2.

48. On June 19, 2017, at Councilmember A's request, defendant CHIANG provided concert tickets to Councilmember A worth approximately $1,670.

49. On August 24, 2017, defendant CHIANG asked for Councilmember A's help on Project D. Specifically, defendant CHIANG sent a text message to Councilmember A, writing: "Hi Boss, wanted to give you heads up: [A Company D employee] spoke to chairman [D] and CPC needs to be 9/14/17 otherwise the loan commitment from lender will be lost for the project." The next day, defendant CHIANG again sent a message to Councilmember A, writing: "Hi Boss, we met with planning yesterday and went through the outstanding items for 9/14/17 CPC. We would need a motion from your office to direct the TFAR allocation by next week before council recess to make the 9/14/17 CPC hearing."

50. On September 1, 2017, at defendant CHIANG's request, Councilmember A presented a written motion in the PLUM committee to benefit Company D, allowing Project D to move forward with its application and approval process before the CPC and City Council.

51. On September 1, 2017, Councilmember A wrote to defendant CHIANG in a text message: "We got the motion in today." Defendant CHIANG understood this message to convey that Councilmember A held up Councilmember A's end of the bargain to help Company D in exchange for financial benefits provided by defendant CHIANG and Company D.

52. In or around September 2017, Councilmember A used Councilmember A's official position to pressure other officials, including officials in the Planning Department and in Mayor's office, to influence the approval of Project D by the CPC.

53. In or around November and December 2017, Councilmember A asked defendant CHIANG to make a commitment on behalf of Company D to contribute $100,000 to Relative A-1's campaign in exchange for favorable official acts by Councilmember A to benefit Project D. Defendant CHIANG, on behalf of Company D, confirmed Chairman D's commitment of $100,000 to a Political Action Committee ("PAC"), PAC A, that was created by Councilmember A, among others, to benefit Relative A-1's campaign.

54. On December 5, 2017, the PLUM Committee, including Councilmember A, voted "yes" on the approval of Project D.

55. On December 12, 2017, the City Council members present at hearing voted to adopt the PLUM Committee report for Project D, which approved the entitlements and allowed Company D to move forward in the City approval process.

56. In early 2018, defendant CHIANG provided approximately $800 in cash to City Staffer A-1.

57. On January 24, 2018, defendant CHIANG, Chairman D, Individual 1, Councilmember A, and Relative A-1 met for dinner at Chairman D's property in San Gabriel, California. At the dinner, Chairman D pledged Chairman D's commitment and support for Relative A-1's campaign for the CD-A seat.

58. On March 9, 2018, Councilmember A submitted a resolution in the PLUM Committee to benefit Company D, allowing Project D to move forward in its approval process.

59. On March 20, 2018, the City Council members present at the hearing voted to adopt the Company D resolution submitted by Councilmember A on March 9, 2018.

60. On March 29, 2018, defendant CHIANG and Councilmember A met at Councilmember A's residence to discuss Company D's support and the $100,000 contribution to PAC A to benefit Relative A-1's campaign.

61. On March 29, 2018, Councilmember A acknowledged defendant CHIANG's agreement to facilitate a contribution to Relative A-1's campaign, writing in a text message to defendant CHIANG: "Thanks again for all your help."

62. On April 23, 2018, defendant CHIANG wrote to Individual 1 via text message: "Below are items I'm talking to [Councilmember A] about: 1) tell [Councilmember A] that [Chairman D] is coming in June, we can talk about the PAC at that time."

63. On April 23, 2018, defendant CHIANG and Councilmember A met at Councilmember A's residence to discuss Councilmember A's continued support for Project D in exchange for Company D's agreement to contribute $100,000 to the PAC to benefit Relative A-1's campaign.

64. On May 18, 2018, defendant CHIANG and Individual 1 met with Councilmember A for breakfast at a restaurant in Boyle Heights. Councilmember A stated that Councilmember A needed a PAC contribution as soon as possible. Councilmember A stated Councilmember A wanted the contribution now so that when Relative A-1 announced the candidacy, Relative A-1 would have money to pour into the campaign and scare everyone else from running against Relative A-1. Councilmember A stated that other developers already contributed in amounts of $50,000, $100,000, and $200,000.

65. On June 12, 2018, the City Council, including Councilmember A, voted to approve the Development Agreement for Project D. The same day, Councilmember A wrote to defendant CHIANG in a text message: "Da [Development Agreement] for [Company D] just passed

council today. Does that mean project has been fully entitled? Is that our last vote?"

66. On June 18, 2018, Councilmember A wrote to defendant CHIANG in a text message: "When is the chairman [D] coming in to town? We need to finalize pac stuff. Thanks."

67. On July 30, 2018, the ordinance authorizing the execution of the Development Agreement for Project D went into effect. The same day, Councilmember A wrote to defendant CHIANG in a text message: "any news on when [Chairman D] is coming in to town? Hoping to catch dinner with [Chairman D] and talk about [Relative A-1's] campaign." Defendant CHIANG responded: "Hi Boss, [Individual 1] is working on it. I let you know after I see [Individual 1] in office tomorrow."

68. On October 8, 2018, Councilmember A followed up regarding Company D, writing to defendant CHIANG in a text message: "Hey GEORGE [CHIANG]... have time to meet soon to tie up some loose ends re the [Company D] project?" Defendant CHIANG understood Councilmember A to be referencing the $100,000 commitment to the PAC to benefit Relative A-1's campaign, which was in exchange for Councilmember A's help with Project D.

69. On October 16, 2018, defendant CHIANG and Councilmember A met at Councilmember A's residence and discussed Company D's agreement to contribute to the PAC to benefit Relative A-1's campaign, as promised, in exchange for Councilmember A taking multiple official acts to benefit Project D.

d) Financial Benefits to Individual 1 in Exchange for Official Acts

70. Between January 2017 and June 2017, defendant CHIANG and

Individual 1 agreed that Individual 1 would assist defendant CHIANG and Project D in exchange for future payments to Individual 1. Specifically, Individual 1 agreed to perform and did perform official acts in the capacity of Deputy Mayor of Economic Development to benefit Project D. In addition, starting in January 2017, while Individual 1 was still Deputy Mayor, Individual 1 prepared an action item list for Project D on a weekly basis, led project meetings, and assigned tasks to defendant CHIANG and others to move the project forward. In exchange, defendant CHIANG agreed to share the lucrative consulting fee and bonus payments from Company D with Individual 1.

71. In or around January 2017, while Individual 1 was the Deputy Mayor for Economic Development, defendant CHIANG, Individual 1, and Individual 1's relative strategized to have Synergy, defendant CHIANG's consulting firm, take over navigating the City approval process for Project D. Defendant CHIANG negotiated a lucrative consulting contract with Company D that included a monthly retainer of $35,000. The consulting contract was later modified to include three significant bonus payments: (1) $100,000 for successfully completing a Planning Department advisory hearing in May 2017; (2) $150,000 for CPC approval in September 2017; and (3) $185,000 for PLUM Committee and City Council approval in December 2017. Defendant CHIANG agreed with Individual 1 to pay a portion of these fees to Individual 1, in exchange for Individual 1's assistance on Project D in Individual 1's official capacity as Deputy Mayor. As Deputy Mayor, Individual 1 exerted power over and influence on various City departments, including the Planning Department and the CPC.

72. On January 13, 2017, defendant CHIANG, Individual 1, and Individual 1's relative communicated via group text messages

regarding Synergy taking control of the City approval process for Project D. Defendant CHIANG wrote: "Hi Dailo [brother], met with chairman [D] again today. [Chairman D] had already instructed us to move forward on the project. I need to spend some time and lay everything out. So I need to skip training tomorrow to put my thoughts into context and send it to you and [Individual 1's relative]. Also, my retainer has been confirmed verbally so I need [Individual 1's relative] to modify it on paper for signature. Thank you!" Individual 1 responded: "No problem. We should meet after you put your thoughts together."

73. On January 26, 2017, defendant CHIANG discussed Synergy taking over Project D with Individual 1 and another consultant. Specifically, defendant CHIANG wrote to Individual 1 and Synergy Consultant in a text message: "Hi Dailo [brother], everything went as planned. Chairman [D] spent the first part of meeting yelling at everything about how their current approach is wrong. Now Synergy takes full control. Then he walked out. The meeting was productive."

74. On February 3, 2017, defendant CHIANG sent a text message to Individual 1, writing: "Meeting with chairman [D] was good report to you tomorrow. Thank you!"

75. On February 8, 2017, Individual 1, using Individual 1's power and influence as the Deputy Mayor, coordinated a meeting between a Planning Department official and representatives of Company D, including defendant CHIANG and Chairman D.

76. On or around March 13, 2017, Individual 1 used Individual 1's official position as the Deputy Mayor to pressure subordinate City officials to take favorable official actions on Project D.

Specifically, on March 13, 2017, Individual 1 sent a group text message to defendant CHIANG, Individual 1's relative, and Synergy Consultant: "Hi [Synergy Consultant], talked to [Fire Department Official] about travel distance and tract map. He still help. Make sure we pay expedite for the the fire review of three tract map. [...] Still wait for [Transportation Department Official] to call back." Defendant CHIANG responded: "Thank you Dailo [brother]!" Synergy Consultant responded: "You are the greatest...I will call [Fire Department Official] first."

77. On March 28, 2017, defendant CHIANG informed Individual 1 about his negotiations with Company D on the Synergy consulting payments, in which Individual 1 had a vested interest, specifically the agreement to receive a portion of the consulting fees and bonus payments. Specifically, defendant CHIANG wrote to Individual 1 in a text message: "Last night I spoke to chairman [D] about late monthly payment and stop of service [Chairman D] said it was all misunderstanding asked me to go to [Company D] office this afternoon. Let me know if you want to have meeting today? Completely up to you but I will drop by regardless to drop everything off. Thank you!"

78. On March 28, 2017, Company D paid Synergy a monthly retainer fee of $35,000 by check.

79. On March 28, 2017, Company D paid Synergy $46,666 by check as back pay for monthly retainers for February 2017 and January 2017.

80. On May 18, 2017, Company D issued a $100,000 check as the first bonus payment to Synergy for successfully reaching the Planning Department advisory hearing scheduled on May 24, 2017.

81. Consistent with his agreement to share the bonus payment with Individual 1, defendant CHIANG asked Individual 1 if Individual

1 wanted Individual 1's share of the first bonus payment in check form. Individual 1 told defendant CHIANG to wait until later and that Individual 1 preferred getting a bigger check at a later date.

82. On or around June 22, 2017, in a telephone call, Individual 1 asked defendant CHIANG "when are you going to . . . get the cash for me for the 20 grand?" Defendant CHIANG responded, "I got it sitting in the car," referring to $20,000 cash. Individual 1 then instructed defendant CHIANG to "just keep it there for now."

83. In early 2017, Individual 1 explained to defendant CHIANG that the Mayor's office had influence over CPC and the CPC commissioners. Defendant CHIANG understood that as Deputy Mayor, Individual 1 had influence over the CPC and that Individual 1 knew how to influence the CPC's approval of Project D.

84. On or around August 3, 2017, defendant CHIANG, Individual 1, and City Staffer D, a senior City official working for Councilmember D, met at Individual 1 and defendant CHIANG's office to discuss Project D. Individual 1 asked City Staffer D to speak to Mayor staffer 1 to ask Mayor staffer 1 to put pressure on the CPC to approve Project D. City Staffer D agreed to do so.

85. On or about August 8, 2017, Individual 1 had a meeting with City Staffer D's relative in downtown Los Angeles at the office of CCC Investment. At the meeting, Individual 1 and City Staffer D's relative discussed an arrangement for a consulting agreement.

86. On or about August 29, 2017, at Individual 1's request, defendant CHIANG executed a consulting agreement between CCC Investment and City Staffer D's relative. The consulting agreement provided for compensation of $1,000 per month, effective September 1, 2017, for four consecutive months. At Individual 1's request,

between October 2017 and December 2017, CCC Investment ultimately paid City Staffer D's relative approximately $2,000 for "consulting services."

87. On September 14, 2017, Individual 1 confirmed that Individual 1 influenced Company D's CPC approval and that Individual 1 expected a second bonus payment from Company D, in the form of a portion of defendant CHIANG's bonus, for reaching the second CPC hearing milestone. Specifically, after the CPC approval, Individual 1 sent a text message to Individual 1's relative, writing: "CPC approved [Project D]! We are moving on to PLUM." Individual 1's relative responded: "Good news for milestones." Individual 1 then wrote: "[Mayor official 1] and [Mayor official 2] talked to the commissioners. [City Staffer D] asked [Mayor staffer 1]. You know who asked [City Staffer D]." Individual 1's relative responded: "Congrats!" Individual 1 answered: "To all of us! Still waiting for the 2nd payment."

88. On October 19, 2017, Company D issued a $150,000 check as the second bonus payment to Synergy for Project D successfully completing the CPC hearing on September 14, 2017.

89. On December 14, 2017, Company D issued a $185,000 check as the third bonus payment to Synergy for Project D successfully completing the PLUM hearing on December 5, 2017, and the City Council hearing on December 12, 2017.

90. Between January 2017 and December 2017, Company D paid Synergy approximately $772,536 in consulting fees and bonuses for its work on Project D. During that time period, Synergy paid Individual 1's company $93,939.97, and Individual 1's relative $19,000. This approximately $112,000 paid by defendant CHIANG through Synergy

indirectly to Individual 1 was in exchange for Individual 1's actions in shepherding Project D through the various City approval processes while Individual 1 was Deputy Mayor.

FILED
CLERK, U.S. DISTRICT COURT
05/27/2020
CENTRAL DISTRICT OF CALIFORNIA
BY: DM DEPUTY

UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, Plaintiff, v. GEORGE ESPARZA, Defendant.	CR No. 2:20-cr-00208-SVW I N F O R M A T I O N [18 U.S.C. § 1962(d): Racketeer Influenced and Corrupt Organizations Conspiracy]

The United States Attorney charges:

INTRODUCTORY ALLEGATIONS

At times relevant to this Information:

A. BACKGROUND ON CITY PROCESSES

1. All legislative power in the City of Los Angeles (the "City") was vested in the City Council and was exercised by ordinance subject to a veto by the Mayor. The City was divided into fifteen City Council Districts covering different geographic areas. The City Council was composed of fifteen members elected from single-member districts.

2. Under the California Political Reform Act, Cal. Gov. Code Sections 81000, et seq., every elected official and public employee

who made or influenced governmental decisions was required to submit a Statement of Economic Interest, also known as the Form 700. The Form 700 was filed annually in April for the previous year. The Form 700 was designed to provide transparency and accountability, including by: (1) providing the public with information about an official's personal financial interests to determine whether officials were making decisions free from conflicts of interest; and (2) reminding the public official of potential conflicts of interest so the official could abstain from making or participating in governmental decisions that would raise those conflicts of interest.

3. To prevent former City officials from exercising or appearing to exercise improper influence over City decisions, the Los Angeles Municipal Code, Sections 49.5.1 et seq., contained "revolving door" restrictions. The restrictions imposed a lifetime ban on receiving compensation to attempt to influence City action on a specific matter in which the City official personally and substantially participated in during their City service. The restrictions also imposed a one-year ban, or "cooling-off" period, during which the City official was prohibited from attempting to influence action on a matter pending before the City official's former City agency for compensation, regardless of participation in that matter.

4. Within the City, large-scale development projects required a series of applications and approvals prior to, during, and after construction. These applications and approvals occurred in various City departments, including the City Council, the Planning and Land Use Management ("PLUM") Committee, the Economic Development Committee, the Los Angeles Planning Department, the Los Angeles

Department of Building and Safety ("LADBS"), the Area Planning Commission, the City Planning Commission, and the Mayor's Office.

5. Each part of the City approval process required official actions by public officials. These included entitlements, variances, general plan amendments, subsidies, incentives, public benefits, scheduling agendas for the various committees, and overall approvals. The process allowed for public hearings, feasibility studies, environmental impact reports, and other steps in the life of development projects.

6. Even for projects that were not going through the City approval process, City officials could benefit, or take adverse action against, a project by advocating for, pressuring, or seeking to influence other City officials, departments, business owners, and stakeholders.

7. Developers typically hired consultants and/or lobbyists to assist in guiding projects through the development process and City departments, including interfacing with the City Council office that represented the district in which the project was located.

B. RELEVANT PERSONS AND ENTITIES

City Officials

8. Defendant GEORGE ESPARZA worked for the City as Councilmember A's Special Assistant in a City Council District ("CD-A") until on or about December 31, 2017.

9. Councilmember A was the Councilmember for CD-A. Councilmember A was the Chair of the PLUM Committee, a body appointed by the City Council President that oversaw many of the most significant commercial and residential development projects in the

City. Councilmember A also served on the Economic Development Committee.

10. Relative A-1 was a relative of Councilmember A. Beginning no later than 2007, Relative A-1 received a bi-weekly payment of approximately $2,500 from Law Firm A as part of her employment with Law Firm A where she was tasked with marketing and business development. Between approximately July 2012 and January 2016, Relative A-1 also received regular payments from High School A, totaling approximately $150,000, as a fundraiser. In or about September 2018, Relative A-1 formally announced her candidacy to succeed Councilmember A as Councilmember for CD-A.

11. City Staffer A-2 worked for the City on Councilmember A's staff.

12. Individual 1 was the General Manager of the LADBS until in or about May 2016. In or about May 2016, Individual 1 was appointed by the Mayor as the City's Deputy Mayor for Economic Development. In or about July 2017, Individual 1 retired from the City.

13. City Staffer B was a high-ranking staff member for then CD-12 Councilmember Mitchell Englander, until approximately June 2017.

Businesspersons/Companies/Projects

14. Businessperson A operated businesses in the City relating to major development projects.

15. Developer A was a real estate developer and architect in the City who operated his own architectural, planning, and development firm.

16. Developer C, owner of Company C, was a real estate owner and developer who owned commercial properties in the City, including a property located in CD-A, purchased in 2008 for $9 million.

Developer C was planning on building a mixed-use development on the property to include 14,000 square feet of commercial space and over 200 residential units ("Project C").

17. Company D was, according to its website, one of the top real estate companies in China with projects worldwide. Company D was owned by Chairman D, a Chinese national. Company D, through its subsidiaries, acquired a property located in CD-A in 2014, which it planned to redevelop into a mixed-use development that was to include 80,000 square feet of commercial space, 650 residential units, and 300 hotel rooms. Company D expected that the development would be valued at several hundred million dollars.

18. Chairman E was the Chairman and President of Company E, a China-based real estate development company with more than $1 billion invested in projects worldwide and, according to its website, one of China's top developers. Chairman E was a Chinese national and billionaire. Company E, through its subsidiaries, acquired two development properties in the City in 2010 and 2011, respectively, including a property located in CD-A ("Property E"). Developer E planned to redevelop Property E into the tallest tower west of the Mississippi River, specifically, a 77-story skyscraper featuring a mix of residential and commercial uses ("Project E").

19. Executive Director E was the Executive Director of Company E and worked directly for Chairman E in the City.

20. Company F, Company G, Company K, and Company L were China-based real estate development companies that each owned development projects located in CD-A.

21. Company H and Company J were domestic real estate development companies that each owned development projects located in CD-A.

22. Company I owned a real estate development project located outside of CD-A that needed approvals in the PLUM and Economic Development Committees in order to move forward.

23. Labor Organization A was an unincorporated association of individuals and labor organizations. Its members included labor unions.

Consultants/Lobbyists

24. George Chiang was a real estate broker and consultant with multiple clients in CD-A.

25. Justin Kim was a real estate appraiser and consultant for real estate developers with projects in the City and a major fundraiser for Councilmember A.

26. Lobbyist B was a consultant for real estate developers with projects in the City and a major fundraiser for Councilmember A. Lobbyist B was a principal officer of a political action committee, PAC A, which was formed to primarily benefit Relative A-1’s campaign for the CD-A seat.

27. Lobbyist C was a consultant and lobbyist for real estate developers with projects in the City, including Company H, and a close associate of the Executive Director of Labor Organization

28. These Introductory Allegations are incorporated by reference into the sole count of this Information.

COUNT ONE

[18 U.S.C. § 1962(d)]

A. THE RACKETEERING ENTERPRISE

At times relevant to this Information:

29. Defendant ESPARZA, Councilmember A, Individual 1, Chiang, and others known and unknown to the United States Attorney, were members and associates of the CD-A Enterprise, a criminal organization whose members and associates engaged in, among other things, bribery, mail and wire fraud, including through the deprivation of the honest services of City officials and employees, extortion, interstate and foreign travel in aid of racketeering enterprises, money laundering, structuring, and obstruction of justice. The CD-A Enterprise operated within the Central District of California and elsewhere.

30. The CD-A Enterprise, including its leaders, members, and associates, constituted an "enterprise," as defined by Title 18, United States Code, Section 1961(4), that is, a group of individuals associated in fact. The CD-A Enterprise constituted an ongoing organization whose members functioned as a continuing unit for a common purpose of achieving the objectives of the enterprise. The CD-A Enterprise engaged in, and its activities affected, interstate and foreign commerce.

B. OBJECTIVES OF THE ENTERPRISE

31. The objectives of the CD-A Enterprise included, but were not limited to, the following:

a. enriching the members and associates of the CD-A Enterprise through means that included bribery, extortion, and mail

and wire fraud, including through the deprivation of the honest services of City officials and employees;

b. advancing the political goals and maintaining the control and authority of the CD-A Enterprise by elevating members and associates of the CD-A Enterprise to, and maintaining those individuals' placement in, prominent elected office, through means that included bribery and mail and wire fraud, including through the deprivation of the honest services of City officials and employees;

c. concealing the financial activities of the CD-A Enterprise, through means that included money laundering and structuring; and

d. protecting the CD-A Enterprise by concealing the activities of its members and associates and shielding the CD-A Enterprise from detection by law enforcement, the City, the public, and others, through means that included obstructing justice.

C. RICO CONSPIRACY

32. Beginning on a date unknown to the United States Attorney, but no later than February 2013, and continuing to in or about November 2018, in Los Angeles County, within the Central District of California and elsewhere, defendant ESPARZA, a person employed by and associated with the CD-A Enterprise, conspired with others known and unknown to the United States Attorney, including Councilmember A, Individual 1, and Chiang, to unlawfully and knowingly violate Title 18, United States Code, Section 1962(c), that is, to conduct and participate, directly and indirectly, in the conduct of the affairs of the CD-A Enterprise's through a pattern of racketeering activity, as that term is defined in Title 18, United States Code, Sections 1961(1) and 1961(5), consisting of multiple acts:

a. involving bribery, in violation of California Penal Code Sections 67 and 68;

b. indictable under Title 18, United States Code, Sections 1341, 1343, 1346 (Mail and Wire Fraud, including through the Deprivation of Honest Services);

c. indictable under Title 18, United States Code, Section 1951 (Extortion);

d. indictable under Title 18, United States Code, Section 1952 (Interstate and Foreign Travel in Aid of Racketeering Enterprises);

e. indictable under Title 18, United States Code, Sections 1956 and 1957 (Money Laundering);

f. indictable under Title 18, United States Code, Section 1512 (Obstruction of Justice and Witness Tampering); and

g. indictable under Title 31, United States Code, Section 5324 (Structuring Transactions to Evade Reporting Requirement).

33. It was a further part of the conspiracy that defendant ESPARZA agreed that a conspirator would commit at least two acts of racketeering activity in the conduct of the affairs of the enterprise.

D. MEANS BY WHICH THE OBJECT OF THE CONSPIRACY WAS TO BE ACCOMPLISHED

34. Defendant ESPARZA and other members and associates of the CD-A Enterprise agreed to conduct of the affairs of the CD-A Enterprise through the following means, among others:

a. In order to enrich its members and associates, the CD-A Enterprise operated a pay-to-play scheme within the City, wherein public officials demanded and solicited financial benefits from

developers and their proxies in exchange for official acts. Specifically, through a scheme that involved bribery, mail and wire fraud, and extortion, defendant ESPARZA, Councilmember A, Individual 1 and other City officials demanded, solicited, accepted and agreed to accept from developers and their proxies, including Chiang, some combination of the following types of financial benefits, among others: (1) cash; (2) consulting and retainer fees; (3) favorable loans; (4) casino chips at casinos; (5) flights on private jets and commercial airlines; (6) stays at luxury hotels; (7) expensive meals; (8) spa services; (9) event tickets to concerts, shows, and sporting events; (10) escort and prostitution services; and (11) other gifts.

b. In exchange for such financial benefits from developers and their proxies, defendant ESPARZA, Councilmember A, Individual 1 and other City officials agreed to perform and performed the following types of official acts, among others: (1) filing motions in various City committees to benefit projects; (2) voting on projects in various City committees, including the PLUM Committee, and City Council; (3) taking, or not taking, action in the PLUM Committee to expedite or delay the approval process and affect project costs; (4) exerting pressure on other City officials to influence the approval process of projects; (5) negotiating with and exerting pressure on labor unions to resolve issues on projects; (6) exerting pressure on developers with projects pending before the City to affect their business practices; and (7) taking official action to enhance the professional reputation and marketability of businesspersons in the City.

c. In order to protect and hide the financial payments that flowed from the developers and their proxies to the public

officials, the CD-A Enterprise engaged in money laundering and other activities to conceal monetary transactions and bribe payments. Specifically, members and associates of the CD-A Enterprise engaged in the following activities, among others: (1) storing large amounts of cash in one's residence; (2) providing cash to family members and associates; (3) directing payments to family members, associates, and entities to avoid creating a paper trail between the developers, their proxies and public officials; (4) using family members and associates to pay expenses; (5) depositing cash at ATMs and banks in amounts under $10,000 to avoid bank reporting requirements; and (6) failing to disclose payments and benefits received on Form-700s and on tax returns.

d. In order to maintain its power and control, members and associates of the CD-A Enterprise used their positions and relationships to illicitly ensure a political power base filled with only their allies and to monopolize significant official City positions, resources, and financial support. Specifically, through bribery, members and associates of the CD-A Enterprise raised funds from developers and their proxies with projects in CD-A for the following, among others: (1) Councilmember A's re-election campaigns and officeholder accounts; (2) Relative A-1's election campaign for the CD-A seat; and (3) Political Action Committees designed to benefit Relative A-1's election campaign.

e. In order to protect the CD-A Enterprise and avoid detection by law enforcement, the City, the public, and others, members and associates of the CD-A Enterprise engaged in the following types of obstructive conduct: (1) lying to law enforcement in an effort to impede the investigation into criminal conduct of the

CD-A Enterprise; (2) attempting to corruptly influence the statements of others to law enforcement; and (3) using encrypted messaging applications, including those utilizing a self-destructing message system, to communicate about the affairs of the CD-A Enterprise.

E. OVERT ACTS

35. In furtherance of the conspiracy and to accomplish the object of the conspiracy, on or about the following dates, defendant ESPARZA and others known and unknown to the United States Attorney, committed and caused to be committed various overt acts within the Central District of California, and elsewhere, including the following:

(1) Project E Bribery Scheme

36. In or around February 2013, Individual 1, then the Interim General Manager of LADBS, introduced defendant ESPARZA and Councilmember A to Chairman E at a dinner in Los Angeles, California. Chairman E owned Company E, one of China's leading real estate development companies. Chairman E also owned Property E, located in CD-A, and another property located in a different City district.

37. Between March 2013 and November 2018, Chairman E, aided and abetted by Individual 1 and others, provided financial benefits directly and indirectly to defendant ESPARZA and Councilmember A, in exchange for defendant ESPARZA's and Councilmember A's assistance to Chairman E and Company E in Councilmember A's official capacity on an ongoing and as-needed basis and related to specific matters. Defendant ESPARZA, Councilmember A, Chairman E, Individual 1, and others established a mutually beneficial agreement to exchange a stream of benefits for official acts and to further the CD-A Enterprise's goals. Specifically, Chairman E provided defendant

ESPARZA and Councilmember A financial benefits in over a dozen trips to casinos in Las Vegas and Australia. After Councilmember A filed a motion to help save Individual 1's job as General Manager of LADBS, Chairman E, at Individual 1's urging, provided $600,000 to help Councilmember A resolve a sexual harassment lawsuit filed by a former CD-A employee. In exchange, Chairman E asked for a series of favors from Councilmember A over time. Ultimately, Chairman E provided over $1 million in bribes to Councilmember A so that Councilmember A would benefit Chairman E's plans to redevelop his property in CD-A and build the tallest building west of the Mississippi River.

38. Between June 2014 and February 2017, defendant ESPARZA and Councilmember A traveled to Las Vegas casinos with Chairman E and Executive Director E on at least the following dates, and accepted benefits in the form of expenses including flights on private jets, hotel rooms, spa services, meals, alcohol, prostitution/escort services, and casino gambling chips in the following approximate amounts:

No.	Date(s)	Casino(s)	Expenses (group)	Gambling chips (Councilmember A)	Gambling chips (ESPARZA)
1	06/14/2014 to 06/15/2014	Casino 1	$7,300	$10,000	$2,000
2	08/22/2014 to 08/25/2014	Casino 1	$10,660	$10,000	$2,000
3	03/13/2015 to 03/14/2015	Casino 1	$7,300	$10,000	$2,000
4	03/28/2015 to 03/30/2015	Casino 1	$10,974	$10,000	$2,000
5	07/07/2015 to 07/08/2015	Casino 1	$13,204	$65,000	$2,000

No.	Date(s)	Casino(s)	Expenses (group)	Gambling chips (Councilmember A)	Gambling chips (ESPARZA)
6	10/28/2015 to 10/30/2015	Casino 2	$46,681	$10,000	$2,000
7	12/11/2015 to 12/13/2015	Casino 3	$70,270	$10,000	$2,000
8	02/12/2016 to 02/13/2016	Casino 2	$47,298	$10,000	$2,000
9	02/26/2016 to 02/28/2016	Casino 3	$53,995	$10,000	$2,000
10	04/30/2016 to 05/02/2016	Casino 2/ Casino 4	$48,203	$10,000	$2,000
11	05/05/2016 to 05/07/2016	Casino 3	$24,975	$10,000	$2,000
13	07/14/2016 to 07/17/2016	Casino 3	$205,684	$10,000	$2,000
14	08/05/2016 to 08/07/2016	Casino 2	$83,473	$10,000	$2,000
16	02/04/2017 to 02/05/2017	Casino 2/ Casino 3	$15,424	$10,000	$2,000
		TOTAL:	$645,441	$215,000	$32,000

39. Defendant ESPARZA, Councilmember A, and Chairman E attempted to conceal their relationship, their trips to Las Vegas, and the benefits provided and accepted in Las Vegas. For example, on February 28, 2016, defendant ESPARZA and Councilmember A had a conversation via text messages regarding avoiding documentation of their joint trip to Las Vegas and the money they received there. Defendant ESPARZA wrote: “No need to book flight. You can take plane back with chairman [E].” Councilmember A asked: “They don’t check id?” Defendant ESPARZA responded: “No Id.” Later that day,

Councilmember A instructed defendant ESPARZA: “When u have a chance, go and cash chips little by little bc if [Chairman E] loses, u won’t be able to cash.” Defendant ESPARZA responded: “Yes. That’s what I’m doing.”

40. On January 1, 2016, defendant ESPARZA, Councilmember A, Chairman E, and Executive Director E traveled to Australia (the “January 2016 Australia trip”), where defendant ESPARZA and Councilmember A accepted financial benefits from Chairman E, including private jet flights for defendant ESPARZA, a $10,980 commercial airline ticket for Councilmember A, hotels, meals, alcohol, and other expenses. In addition, Chairman E provided defendant ESPARZA and Councilmember A casino chips, which defendant ESPARZA and Councilmember A cashed out in Australian dollars.

41. After the January 2016 Australia trip, defendant ESPARZA and Councilmember A discussed evading bank reporting requirements by converting Australian dollars to American dollars in an effort to conceal their financial relationship with Chairman E, to avoid law enforcement detection, and to protect the CD-A Enterprise. Specifically, on February 8, 2016 and February 9, 2016, defendant ESPARZA and Councilmember A had a conversation via text message regarding evading bank reporting requirements when converting Australian dollars they received from Chairman E. Defendant ESPARZA told Councilmember A about the exchange rate, adding: “They are asking me for my drivers license and social security for IRS record. Do you think it’s fine to leave my info?” Councilmember A responded: “No. Maybe we can change a little at a time...under 10 k in future.” Councilmember A also wrote: “Don’t exchange if they are asking u for all that info.” Councilmember A later instructed defendant ESPARZA

by text message: “Go to the other place tomorrow and take 9 k. See if they change 9 k without getting your social security number.” Councilmember A added: “Even if they take your social security, it doesn’t mean that they will report to irs. They probably will just keep it for their records but not do anything with tax reporting.” Defendant ESPARZA responded: “Ok cool. I’ll go tomorrow.” Defendant ESPARZA later wrote: “I exchanged 10k today. Will do another tomorrow. If it’s under 10k, they will not report.”

42. Between approximately July 2014 and September 2014, Chairman E, at Individual 1’s urging and with defendant ESPARZA’s knowledge, facilitated the payment of $600,000 to help Councilmember A confidentially resolve a sexual harassment lawsuit filed against Councilmember A during the time Councilmember A was facing re-election. Specifically, on June 7, 2013, a sexual harassment lawsuit was filed against Councilmember A by a former CD-A employee. Thereafter, Councilmember A, Chairman E, and Individual 1 orchestrated an arrangement whereby Chairman E secured $600,000 in collateral for Councilmember A to obtain a personal loan from a bank for $570,000 to privately pay the sexual harassment settlement and legal fees and resolve it without publicly disclosing details. Defendant ESPARZA and Executive Director E, on behalf of Chairman E, facilitated the execution of the arrangement.

43. On December 12, 2018, after Councilmember A failed to make interest payments on his personal loan for three consecutive months, the bank carrying his $600,000 loan applied the collateral provided by Chairman E to the amount Councilmember A owed on the loan, totaling $575,269.61, which meant that Councilmember A would no longer have to pay this amount to the bank.

44. In exchange for financial benefits from Chairman E, Councilmember A routinely assisted Chairman E at Chairman E's request. Before asking for Councilmember A's assistance on Project E, Chairman E established a pattern of utilizing Councilmember A's official position for Chairman E's personal benefit.

45. For example, between June 2013 and December 2013, Chairman E, through Individual 1, enlisted Councilmember A's help to negotiate and resolve a dispute with the owners of a plot of land adjacent to Chairman E's property in CD-A, Property E.

46. In 2014, to benefit Chairman E's reputation in the City's business community, Councilmember A introduced and signed a resolution before the City Council recognizing Chairman E for his achievements and contributions to the economy of CD-A, which the City Council signed and adopted.

47. Most significantly, Chairman E provided bribes to defendant ESPARZA and Councilmember A because, as the Chair of the PLUM Committee and CD-A Councilmember, Councilmember A was poised to significantly benefit Chairman E's desire and plans to redevelop Property E. Project E would require official acts from Councilmember A at various stages of the City approval process.

48. On August 4, 2016, Councilmember A, Individual 1, senior officials from the Planning Department, and senior CD-A staff members met with Chairman E and his team to discuss Project E, including Chairman E's interest in pursuing Transient Occupancy Tax rebates, Transfer of Floor Area Rights, and other incentives from the City.

49. In or around August 2016, on a private jet flight back from Las Vegas, Chairman E requested Councilmember A's assistance in hiring a consultant on Project E. Thereafter, on August 15, 2016,

defendant ESPARZA texted Councilmember A regarding Project E: "Reminder boss to decide what land use expediters you want to recommend to the Chairman [E]."

50. On October 19, 2016, Executive Director E forwarded an e-mail and attachment prepared by Chairman E to Councilmember A regarding Project E. The attachment was a draft letter from Councilmember A to Chairman E on Councilmember A's official letterhead, referencing Chairman E's "application for the Los Angeles Highest Building Project [Project E]" and a recent meeting attended by Councilmember A, Individual 1, and other City officials regarding Project E.

51. On October 20, 2016, Councilmember A signed the official letter after revising it to remove the reference to Individual 1 and noting: "The proposed project may result in one of the largest buildings in the City of Los Angeles."

52. On December 16, 2016, defendant ESPARZA forwarded an e-mail to Councilmember A from City Staffer A-2, listing a number of consultants, writing: "Hi Boss, Here is the list of land use consultants per [City Staffer A-2]'s past recommendations. Chairman [E] would like us to schedule interviews on Monday."

53. On April 27, 2017, in a telephone call between defendant ESPARZA and Executive Director E, the two discussed a proposed consultant for Project E. Defendant ESPARZA stated: "So, remember, the Chairman [E] was gonna hire [a specific consultant]? ... [Councilmember A] wanted me to tell the Chairman [E] not to hire him anymore." When Executive Director E asked why, defendant ESPARZA responded: "Because, ah, [Councilmember A] can't trust him ... he's too loyal to another elected official.... So [Councilmember A]

doesn’t think it’s a good idea, it’s not a good idea to, to put him on the project.”

54. On May 9, 2017, in a telephone call, defendant ESPARZA and Executive Director E discussed the financial relationship between Chairman E and Councilmember A. Specifically, Executive Director E stated that Chairman E expected to lay out “everything in front of” Councilmember A at an upcoming trip to Cabo San Lucas, which defendant ESPARZA understood to refer to the assistance Chairman E expected from Councilmember A on Project E. Executive Director E stated that “otherwise Chairman [E] ask [Councilmember A] to ... pay back that $600,000 already.” When defendant ESPARZA stated that “[Councilmember A]’s not going to do that either,” Executive Director E responded: “Chairman [E] will push him.”

55. On May 9, 2017, in a telephone call between defendant ESPARZA and another CD-A staffer, defendant ESPARZA stated: “Chairman [E] should have all the leverage in the world [be]cause of what [Councilmember A] owes [Chairman E].”

56. In June 2018, Company E filed an application with the Planning Department for Project E.

(2) Project C Bribery Scheme

57. In the summer of 2016, Labor Organization A filed an appeal requesting to suspend all activity to implement one of Developer C’s development projects, Project C, that required City approval until Project C was brought into compliance with the requirements of the California Environmental Quality Act by correcting certain deficiencies (the “appeal”). The appeal prevented Project C from progressing through the rest of the City approval processes, including approvals by the PLUM Committee and City Council.

58. Between August 2016 and July 2017, Developer C agreed to fund a $500,000 cash bribe designed to benefit Councilmember A, through defendant ESPARZA and Kim, in exchange for Councilmember A's assistance on Project C. Developer C, through Kim, initially provided $400,000 in cash that Developer C intended for Councilmember A between February and March 2017. Councilmember A directed defendant ESPARZA to hide $200,000 of the total bribe payment for Councilmember A. Defendant ESPARZA and Kim each kept a portion of the remaining $200,000 bribe payment for themselves as kickbacks for facilitating the bribe. In exchange, Developer C, through Kim and defendant ESPARZA, sought to use Councilmember A's influence as the Councilmember of CD-A and Chair of the PLUM Committee to pressure Labor Organization A to withdraw, abandon, or otherwise lose its appeal opposing Project C, thereby allowing the project to move forward in its City approval process.

59. On September 1, 2016, defendant ESPARZA, Kim, and Councilmember A had dinner together and then visited a Korean karaoke establishment in Los Angeles. During the karaoke meeting, Kim asked Councilmember A for assistance with the appeal on Project C, and Councilmember A agreed to help. Kim then called Developer C and asked him to join the group at karaoke, which Developer C did.

60. On September 2, 2016, defendant ESPARZA and Kim met for lunch in Los Angeles. At Councilmember A's direction, defendant ESPARZA expressed to Kim that Councilmember A would not help Project C for free and that Councilmember A's help would require a financial benefit in exchange for his help ensuring Project C moved forward through the City approval process.

61. On January 17, 2017, defendant ESPARZA, Councilmember A, Kim, and Developer C's business associates met at Councilmember A's City Hall office to discuss, among other things, Project C. During a private meeting that included only defendant ESPARZA, Councilmember A, and Kim, Kim again asked Councilmember A for assistance with the appeal, and Councilmember A responded that he could help.

62. In or around January 2017, at the direction of Councilmember A, defendant ESPARZA learned that resolving the appeal on Project C would save Developer C an estimated $30 million on development costs.

63. In or around January 2017, based on his conversations with Councilmember A and Lobbyist C, defendant ESPARZA told Kim that it would cost approximately $1.2 million to $1.4 million to get Councilmember A to resolve the appeal and allow Project C to move forward in the City approval process.

64. Between February 2, 2017 and February 10, 2017, defendant ESPARZA had individual text message conversations with Councilmember A and Kim, discussing the negotiation of the bribe payment and the amount of the bribe payment from Developer C to Councilmember A.

65. In approximately February 2017, defendant ESPARZA and Kim had discussions regarding the negotiation of the bribe amount. Kim conveyed a counteroffer of $500,000 cash from Developer C for Councilmember A. Defendant ESPARZA then conveyed this counteroffer to Councilmember A.

66. In approximately February 2017, defendant ESPARZA and Kim met at a restaurant in Los Angeles to discuss the bribe amount. Defendant ESPARZA and Kim discussed that Developer C agreed to pay $500,000 in cash in exchange for Councilmember A's assistance.

Thereafter, defendant ESPARZA conveyed this agreed-upon bribe payment amount to Councilmember A, stating specifically that Councilmember A would get $300,000 total and Kim would get $200,000 total for facilitating the bribery scheme.

67. In approximately February and March 2017, defendant ESPARZA and Councilmember A discussed the appeal. Councilmember A instructed defendant ESPARZA to speak to Lobbyist C, a close associate of the Executive Director of Labor Organization A. Subsequently, Councilmember A told defendant ESPARZA that he discussed the appeal with Lobbyist C. Councilmember A conveyed to Lobbyist C that Councilmember A would oppose the appeal in the PLUM committee. Lobbyist C agreed to discuss the issue with the Executive Director of Labor Organization A.

68. On February 14, 2017, defendant ESPARZA had a text message conversation with Lobbyist C about setting up a private meeting between Lobbyist C and Councilmember A. Specifically, defendant ESPARZA wrote: "My boss [Councilmember A] asked if you guys can have a one on one on Tuesday at 830am?... Just you and the Councilman."

69. On February 22, 2017, defendant ESPARZA had a text message conversation with Lobbyist C about another private meeting at Councilmember A's request. Specifically, defendant ESPARZA wrote: "Hi [Lobbyist C], free tomorrow to meet? Councilman asked me to meet with you." Lobbyist C responded: "Yea." Defendant ESPARZA then wrote: "I still need to talk to you one on one per my bosses [Councilmember A] request." Lobbyist C responded: "No problem."

70. On March 1, 2017, defendant ESPARZA had a text message conversation with Lobbyist C regarding the appeal. Specifically, defendant ESPARZA asked: "Everything good?" Lobbyist C then replied:

"Think so, You?" Defendant ESPARZA responded: "Yes sir.. just checking in."

71. On March 3, 2017, Lobbyist C sent defendant ESPARZA a text message regarding the appeal on Project C, writing: "Appeal dropped today." Defendant ESPARZA then informed Kim that Councilmember A had held up his end of the bargain and helped resolve the appeal.

72. In approximately February or March 2017, Kim met with Developer C at a commercial building in Los Angeles and received a paper bag from Developer C containing $400,000 in cash, which was intended to be a bribe Developer C agreed to pay for Councilmember A's assistance in resolving the appeal. After receiving $400,000 in cash from Developer C, Kim met with defendant ESPARZA in a car in Los Angeles and gave defendant ESPARZA cash to deliver to Councilmember A. Kim kept some cash for himself for facilitating the bribe payment.

73. On March 14, 2017, at 4:48 p.m., defendant ESPARZA sent a text message to Councilmember A, asking: "Are you home?" Councilmember A responded: "Yes." Defendant ESPARZA then wrote: "Can I stop by? Just finished meeting with Justin [Kim]."

74. On March 14, 2017, at approximately 5:15 p.m., Councilmember A and defendant ESPARZA met at Councilmember A's residence. Defendant ESPARZA told Councilmember A that Developer C had provided $400,000 in cash to date, and that Developer C would provide the remaining $100,000 later. Defendant ESPARZA stated that Kim had provided $200,000 of that cash to defendant ESPARZA. At the meeting, defendant ESPARZA showed Councilmember A a liquor box filled with approximately $200,000 cash. Councilmember A told defendant ESPARZA to hold on to and hide the money at defendant ESPARZA's

residence until Councilmember A asked for it. Councilmember A told defendant ESPARZA that defendant ESPARZA could have $100,000 of the $300,000 total amount Councilmember A expected to receive from Developer C.

75. On December 28, 2017, defendant ESPARZA and Councilmember A met at City Hall and, in Councilmember A's private bathroom, discussed various topics, including defendant ESPARZA's interviews with the FBI and the cash bribe defendant ESPARZA was holding for Councilmember A. Specifically, during that conversation, Councilmember A stated: "And secondly, um, look, uh, I have a lot of expenses now that with [Relative A-1] running, [Relative A-1]'s not going to be working anymore. I'm gonna need money. Um, that is mine, right? That is mine." Defendant ESPARZA affirmed the $200,000 cash bribe money was Councilmember A's. Defendant ESPARZA and Councilmember A agreed to wait until April 1, 2018, for defendant ESPARZA to provide the $200,000 cash owed to Councilmember A, to allow some cooling off period after defendant ESPARZA's interviews with the FBI in hopes that it would decrease the likelihood of law enforcement discovering the cash. However, defendant ESPARZA never gave Councilmember A his outstanding $200,000 cash because defendant ESPARZA was concerned about the federal corruption investigation, so instead defendant ESPARZA gave the money to Executive Director E to hide, as discussed below.

(3) Businessperson A Retainer Payment Scheme

76. Defendant ESPARZA and Councilmember A met Businessperson A in approximately 2016 or 2017 through Chairman E and Executive Director E. Businessperson A requested assistance from defendant ESPARZA and Councilmember A to enhance Businessperson A's financial

prospects. Specifically, Businessperson A asked defendant ESPARZA and Councilmember A to use their official positions to make introductions to developers and advocate that such developers use Businessperson A's business.

77. In order to facilitate this scheme, Businessperson A provided defendant ESPARZA retainer payments for his services. Specifically, from approximately January 2017 to June 2017, defendant ESPARZA accepted approximately $8,000 to $10,000 in cash from Businessperson A on a monthly basis, in addition to luxury gifts such as expensive suits, in exchange for defendant ESPARZA arranging meetings for Businessperson A with developers in the City. On several occasions, Businessperson A provided the cash to defendant ESPARZA in the bathroom during meetings in restaurants.

(4) Businessperson A Funds June 2017 Las Vegas Trip

78. On or around June 1, 2017, defendant ESPARZA traveled to Las Vegas with, among others, Businessperson A, then CD-12 Councilmember Englander, City Staffer B, Lobbyist A, and Developer A (the "June 2017 Las Vegas trip"). During the June 2017 Las Vegas trip, defendant ESPARZA, Englander, City Staffer B, and others each received at least the following benefits directly or indirectly (via hotel "comps") from Businessperson A: a hotel room at a Las Vegas Casino and Hotel, transportation to and from the hotel, casino chips to gamble, dinner and drinks at the hotel restaurant totaling approximately $2,481 (for the group), bottle service at a nightclub for which Businessperson A paid approximately $25,000 and Developer A paid an additional approximately $10,000 (for the group and others).

79. After the group returned to their hotel in the early morning of June 2, 2017, Businessperson A told defendant ESPARZA and

Englander that Businessperson A was going to order female escorts to come to their hotel. When two escorts arrived to the hotel, Businessperson A paid approximately $300-400 in cash for the escorts' services for Businessperson A and defendant ESPARZA and instructed one of the escorts to go to Englander's hotel room to provide him escort services.

80. On or about June 5, 2017, defendant ESPARZA and Councilmember A discussed the June 2017 Las Vegas trip in a telephone call. Specifically, Councilmember A asked about the use of escorts during the trip, referring to "girls" that defendant ESPARZA and Businessperson A sent to Englander. Defendant ESPARZA confirmed the use of escorts during the trip.

(5) Additional Pay-to-Play Conduct

CD-A Developers/Proxies' PAC Contributions to Benefit Relative A-1 Campaign and CD-A Enterprise

81. Beginning no later than June 2016, Councilmember A and others planned to have Relative A-1 succeed him as Councilmember for CD-A when his term ended and he was no longer eligible for re-election in 2020, in order to maintain a political stronghold in the City and perpetuate the pay-to-play scheme he and others had implemented to further the objectives of the CD-A Enterprise. In furtherance of this plan, Councilmember A, defendant ESPARZA, Lobbyist B, and others established PAC A that publicly was purported to benefit a broad array of candidates and causes but was, in fact, primarily intended to benefit Relative A-1's campaign. Councilmember A, defendant ESPARZA, Lobbyist B, and others thereafter pressured developers with projects in CD-A to contribute to PAC A in exchange for favorable treatment of their projects, including in the PLUM

Committee, Economic Development Committee, and City Council. In addition, Councilmember A and defendant ESPARZA sought to convey to developers and their proxies that those who did not contribute as requested by Councilmember A and defendant ESPARZA would risk adverse action in the City process taken against their projects.

82. On April 19, 2017, in a telephone call, defendant ESPARZA and Kim discussed the mutually beneficial relationship between Chinese developers and Councilmember A and Councilmember A's desire to monopolize that relationship for the benefit of the CD-A Enterprise. Defendant ESPARZA stated: "The Chinese want [Councilmember A] to stay here for the long term too, you know." Defendant ESPARZA went on to say that "[the Chinese] don't want to, you know, cause any, any problems ... they already know they are taking care of the Councilman [A] and whatever his ... needs are." Defendant ESPARZA referred to Relative A-1's campaign for CD-A as "[Councilmember A] spitting in everyone's eye" and Councilmember A saying "I'm not gonna play with the boys" and not "share the wealth" with others. Kim agreed that Councilmember A just wanted to keep it in the "family."

83. On May 10, 2017, in a telephone call, defendant ESPARZA and Chiang discussed how Councilmember A was using PAC A to obtain additional financial benefits from developers in exchange for not taking adverse action against them. Specifically, defendant ESPARZA told Chiang: "[Councilmember A's] approach is that he's going to um, strong arm everyone ... to the PAC [A]. [Company D], [Company F]. 'This is what I want right now. This is my wife, this is what we are doing.' So his idea in his mind is that okay, people are going to

support us because they don’t want people to fuck with projects, you know.”

84. On May 11, 2017, in a telephone call, defendant ESPARZA and Executive Director E discussed punishing a developer who was not providing financial benefits to Councilmember A by withholding approvals for the developer’s project. Specifically, defendant ESPARZA said: “[Company G] has not come through with any other commitments to us, to you, so you know, why even be helpful to them, you know, that’s my thing... So I’m going to tell [Councilmember A] that I spoke to you and let’s just continue to ignore them, you know. We are not going to help them.” Executive Director E then added: “And even [Individual 1] doesn’t want you guys to work with [Company G].”

85. On June 2, 2017, in a telephone call, Councilmember A, Relative A-1, and Lobbyist B discussed establishing a PAC to support Relative A-1’s campaign. Lobbyist B explained: “the PAC ... that’s going to be strictly political money and, you know, two years from now, or three years, there’ll be a million dollars in there. You won’t be able to direct it, but there’ll be people, you know, [who] are like minded.”

86. On September 14, 2017, Councilmember A and defendant ESPARZA had a text message conversation regarding compiling a list of donors to target for fundraising for Relative A-1’s campaign, which they referred to as the “Executive 2” strategy meetings, focusing on developers with upcoming hearings before the PLUM Committee. Councilmember A texted ESPARZA: “Please get the [City Staffer A-2] list that he gave u about projects going to cpc and plum and let’s

discuss me and u at every Thursday exec.#2 meeting." Defendant ESPARZA responded: "Sounds good boss."

87. On October 18, 2017, a political account supervisor sent an initial Statement of Organization for PAC A to the California Secretary of State by U.S. mail. Lobbyist B was listed as an "additional principal officer" of the PAC.

88. On October 20, 2017, Councilmember A and defendant ESPARZA had another conversation about targeting developers with projects pending before committees on which Councilmember A sat in order to obtain financial benefits from them. Defendant ESPARZA understood that Councilmember A intended to capitalize on the developers' fear that Councilmember A would take adverse action against those pending projects if they failed to contribute as requested. Specifically, Councilmember A texted defendant ESPARZA: "[Company H] is on economic development committee on Tuesday for tot [Transient Occupancy Tax rebates]. Have u spoken with those guys?" Defendant ESPARZA responded: "Hey boss, here is a quick update. Just had my last meeting. [Company I]/[Lobbyist I]- good. [Company H]/[Lobbyist C]- good. [Company J]/[Consultant J]- good. All commitments have been made."

89. On October 24, 2017, Councilmember A again sought to confirm with defendant ESPARZA that certain developers and consultants committed to contribute to the Relative A-1 campaign and PAC A before taking favorable actions on the projects in the Economic Development and PLUM Committees. Specifically, Councilmember A texted defendant ESPARZA: "[Company H] is in committee today..." Councilmember A then followed up: "Everything being handled?" Defendant ESPARZA responded: "Yes sir." Councilmember A then texted:

"The [Company I] sign district is in committee today." Defendant ESPARZA responded: "Yes. Being handled as well."

90. On December 4, 2017, Councilmember A created a spreadsheet titled "Initial Commitments to PAC," listing companies and consultants and contribution amounts, totaling $500,000. Several of those listed had pending projects in Councilmember A's district, which Councilmember A deliberately targeted in order to secure the requested contributions by exploiting their concern that adverse action would be taken against their projects without the requested contributions, including the following:

Company	Commitment	Notes
George Chiang	$100,000	George Chiang
[Company H]	$25,000	[Lobbyist C]
[Company I]	$25,000	[Lobbyist I]
[Company J]	$50,000	[Consultant J]

91. On March 26, 2018, Company H followed through with its commitment to Councilmember A and made a contribution of $10,000 to a PAC, at Councilmember A's request and Lobbyist C's direction.

92. On June 19, 2018, Company J followed through with its commitment to Councilmember A and made a contribution of $25,000 to PAC A, at Councilmember A's request and Consultant J's direction.

CD-A Developers/Proxies' Contributions to Councilmember A Campaigns and Officeholder Accounts

93. On May 18, 2015, at Councilmember A's direction, defendant ESPARZA created a document titled "[Councilmember A] Debt Finance Plan," which documented Councilmember A's solicitation efforts of contributions from developers, consultants, and allies towards Councilmember A's 2015 re-election campaign debt. Many of the

developers and consultants had projects in CD-A and/or were going through the City approval process and were targeted by Councilmember A and defendant ESPARZA for that reason. The plan included: (1) $40,000 from Justin Kim; (2) $20,000 from Chairman E; (3) $20,000 from Company G through Executive Director E; (4) $10,000 from Company D; and (5) $10,000 from Individual 1.

CD-A Developers/Proxies' Contributions to School that Employed Relative A-1 as a Fundraiser

94. Beginning in or around March 2015, at Councilmember A's direction, defendant ESPARZA solicited donations to High School A's annual gala event from developers and consultants with projects pending in Councilmember A's district. Part of the money raised from the gala event was used to pay salaried employees, including Relative A-1.

95. Consistent with this plan, on May 18, 2015, defendant ESPARZA created a document titled "[High School A] Fundraising Plan." The document included commitments from: (1) Company D for $10,000; (2) Chairman E for $20,000; (3) Company F for $10,000; and (4) Company L for $30,000.

96. In or around September 2015, at Councilmember A's request, the following companies, among others, made contributions to High School A's annual gala: (1) $25,000 by Company L; (2) $10,000 by Company D; (3) $10,000 by Company F; and (4) $5,000 by Company K.

Steering CD-A Developers to Hire Law Firm that Paid Relative A-1

97. In or around 2016, Councilmember A directed defendant ESPARZA to schedule meetings between Councilmember A, Relative A-1, partners of Law Firm A, and developers with projects pending in Councilmember A's district. At these meetings, Councilmember A

encouraged developers to hire Law Firm A, which paid Relative A-1 a bi-weekly salary of $2,500. For example, on February 25, 2016, Councilmember A instructed defendant ESPARZA by text message: "Please work it out with George [Chiang] ... to set up a meeting with [Developer K] and [Law Firm A partner] ... Let them know that [Relative A-1] works at [Law Firm A] and we want to make introduction to see if [the company] ever needs legal defense. Please keep me posted." Defendant ESPARZA responded: "Ok. Will do."

(6) FBI's Interviews of Defendant ESPARZA

98. On June 20, 2017, the FBI interviewed defendant ESPARZA regarding a public corruption investigation. At the beginning of this interview, defendant ESPARZA was advised that lying to the FBI was a crime. During the interview, defendant ESPARZA falsely stated that he had no knowledge of any City official helping on a project in exchange for money, gifts, or campaign contributions. During the interview, the FBI told defendant ESPARZA there was a Grand Jury investigation and asked defendant ESPARZA not to reveal the interview to others because it may negatively impact the federal investigation. Defendant ESPARZA told the FBI he understood he should not reveal such information to others.

99. Nevertheless, on June 20, 2017, the same day as his first FBI interview, and in the days shortly thereafter, defendant ESPARZA disclosed to numerous associates, including Councilmember A, Kim, and Executive Director E, that he was interviewed by the FBI. For example, on June 20, 2017, defendant ESPARZA told Councilmember A about his interview with the FBI. Councilmember A responded that he was worried that the FBI would ask questions about Businessperson A and Chairman E. Councilmember A instructed defendant ESPARZA not to

tell anyone that defendant ESPARZA disclosed information to Councilmember A about the FBI interview.

100. On July 1, 2017, the FBI again interviewed defendant ESPARZA. At the beginning of this interview, defendant ESPARZA was again advised that lying to the FBI was a crime. During the second FBI interview, defendant ESPARZA falsely stated that: (1) other than the June 2017 Las Vegas trip with then-Councilmember Englander, defendant ESPARZA was not aware of any chip sharing with any other councilmember in Las Vegas; (2) Councilmember A told defendant ESPARZA to be cooperative with and not hide information from the FBI; (3) Executive Director E had no City business with defendant ESPARZA; (4) Kim did not have City business with defendant ESPARZA; and (5) defendant ESPARZA did not know of anyone paying money to City officials.

101. On July 12, 2017, defendant ESPARZA and Kim met in person in a car near defendant ESPARZA's residence and then drove around in the car. During this meeting, defendant ESPARZA and Kim discussed the content of their recent respective FBI interviews, in which both defendant ESPARZA and Kim lied to the FBI and deliberately failed to disclose information regarding the Project C bribery scheme. During this meeting, Kim asked if defendant ESPARZA wanted the remaining $100,000 from Developer C. Due to defendant ESPARZA's concern that the FBI investigation was closing in on him and Councilmember A, defendant ESPARZA declined to take possession of the outstanding bribery money at that time.

(7) Defendant ESPARZA's Concealment of Benefits

102. In or around July 2017, defendant ESPARZA asked Executive Director E to hold on to approximately $250,000 in cash for defendant

ESPARZA because defendant ESPARZA feared that law enforcement would search his residence and find the cash. This cash was composed of the cash provided by Kim as part of the Project C bribery scheme for Councilmember A and defendant ESPARZA and additional cash defendant ESPARZA received from Chairman E and Businessperson A. Executive Director E agreed to hide the cash for defendant ESPARZA.

103. Defendant ESPARZA did not report any of the financial benefits from Chairman E, Developer C, Kim, or Businessperson A as gifts or income on his applicable Form 700s or on his applicable tax returns.

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FILED
CLERK, U.S. DISTRICT COURT
05/27/2020
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UNITED STATES OF AMERICA

UNITED STATES DISTRICT COURT

FOR THE CENTRAL DISTRICT OF CALIFORNIA

UNITED STATES OF AMERICA, Plaintiff, v. GEORGE ESPARZA, Defendant.	No. CR 2:20-cr-00208-SVW COOPERATION PLEA AGREEMENT FOR DEFENDANT GEORGE ESPARZA

1. This constitutes the plea agreement between GEORGE ESPARZA ("defendant") and the United States Attorney's Office for the Central District of California ("the USAO") in the above-captioned case. This agreement is limited to the USAO and cannot bind any other federal, state, local, or foreign prosecuting, enforcement, administrative, or regulatory authorities.

DEFENDANT'S OBLIGATIONS

2. Defendant agrees to:

a. Give up the right to indictment by a grand jury and, at the earliest opportunity requested by the USAO and provided by the Court, appear and plead guilty to a one-count information in the form attached to this agreement as Exhibit 1 or a substantially similar form, which charges defendant with Racketeer Influenced and Corrupt Organization ("RICO") Conspiracy, in violation of 18 U.S.C. § 1962(d).

b. Not contest the Factual Basis agreed to in this agreement.

c. Abide by all agreements regarding sentencing contained in this agreement.

d. Appear for all court appearances, surrender as ordered for service of sentence, obey all conditions of any bond, and obey any other ongoing court order in this matter.

e. Not commit any crime; however, offenses that would be excluded for sentencing purposes under United States Sentencing Guidelines ("U.S.S.G." or "Sentencing Guidelines") § 4A1.2(c) are not within the scope of this agreement.

f. Be truthful at all times with the United States Probation and Pretrial Services Office and the Court.

g. Pay the applicable special assessment at or before the time of sentencing unless defendant has demonstrated a lack of ability to pay such assessment.

3. Defendant further agrees to cooperate fully with the USAO, the Federal Bureau of Investigation ("FBI"), and, as directed by the USAO, any other federal, state, local, or foreign prosecuting, enforcement, administrative, or regulatory authority. This cooperation requires defendant to:

a. Respond truthfully and completely to all questions that may be put to defendant, whether in interviews, before a grand jury, or at any trial or other court proceeding.

b. Attend all meetings, grand jury sessions, trials or other proceedings at which defendant's presence is requested by the USAO or compelled by subpoena or court order.

c. Produce voluntarily all documents, records, or other tangible evidence relating to matters about which the USAO, or its designee, inquires.

4. For purposes of this agreement: (1) "Cooperation Information" shall mean any statements made, or documents, records, tangible evidence, or other information provided, by defendant pursuant to defendant's cooperation under this agreement; and (2) "Plea Information" shall mean any statements made by defendant, under oath, at the guilty plea hearing and the agreed to factual basis statement in this agreement.

THE USAO'S OBLIGATIONS

5. The USAO agrees to:

a. Not contest the Factual Basis agreed to in this agreement.

b. Abide by all agreements regarding sentencing contained in this agreement.

c. At the time of sentencing, provided that defendant demonstrates an acceptance of responsibility for the offenses up to and including the time of sentencing, recommend a two-level reduction in the applicable Sentencing Guidelines offense level, pursuant to U.S.S.G. § 3E1.1, and recommend and, if necessary, move for an additional one-level reduction if available under that section.

6. The USAO further agrees:

a. Not to offer as evidence in its case-in-chief in the above-captioned case or any other criminal prosecution that may be brought against defendant by the USAO, or in connection with any sentencing proceeding in any criminal case that may be brought against defendant by the USAO, any Cooperation Information. Defendant agrees, however, that the USAO may use both Cooperation Information and Plea Information: (1) to obtain and pursue leads to other evidence, which evidence may be used for any purpose, including any criminal prosecution of defendant; (2) to cross-examine defendant should defendant testify, or to rebut any evidence offered, or argument or representation made, by defendant, defendant's counsel, or a witness called by defendant in any trial, sentencing hearing, or other court proceeding; and (3) in any criminal prosecution of defendant for false statement, obstruction of justice, or perjury.

b. Not to use Cooperation Information against defendant at sentencing for the purpose of determining the applicable guideline range, including the appropriateness of an upward departure, or the sentence to be imposed, and to recommend to the Court that Cooperation Information not be used in determining the applicable guideline range or the sentence to be imposed. Defendant understands, however, that Cooperation Information will be disclosed to the United States Probation and Pretrial Services Office and the Court, and that the Court may use Cooperation Information for the purposes set forth in U.S.S.G § 1B1.8(b) and for determining the sentence to be imposed.

c. In connection with defendant's sentencing, to bring to the Court's attention the nature and extent of defendant's cooperation.

d. If the USAO determines, in its exclusive judgment, that defendant has both complied with defendant's obligations under paragraphs 2 and 3 above and provided substantial assistance to law enforcement in the prosecution or investigation of another ("substantial assistance"), to move the Court pursuant to U.S.S.G. § 5K1.1 to fix an offense level and corresponding guideline range below that otherwise dictated by the sentencing guidelines, and to recommend a term of imprisonment within this reduced range.

DEFENDANT'S UNDERSTANDINGS REGARDING COOPERATION

7. Defendant understands the following:

a. Any knowingly false or misleading statement by defendant will subject defendant to prosecution for false statement, obstruction of justice, and perjury and will constitute a breach by defendant of this agreement.

b. Nothing in this agreement requires the USAO or any other prosecuting, enforcement, administrative, or regulatory authority to accept any cooperation or assistance that defendant may offer, or to use it in any particular way.

c. Defendant cannot withdraw defendant's guilty plea if the USAO does not make a motion pursuant to U.S.S.G. § 5K1.1 for a reduced guideline range or if the USAO makes such a motion and the Court does not grant it or if the Court grants such a USAO motion but elects to sentence above the reduced range.

d. At this time the USAO makes no agreement or representation as to whether any cooperation that defendant has

provided or intends to provide constitutes or will constitute substantial assistance. The decision whether defendant has provided substantial assistance will rest solely within the exclusive judgment of the USAO.

e. The USAO's determination whether defendant has provided substantial assistance will not depend in any way on whether the government prevails at any trial or court hearing in which defendant testifies or in which the government otherwise presents information resulting from defendant's cooperation. That is, whether any other person, after trial, is found guilty or not guilty of any offense will have no effect on the government's sentencing recommendation for defendant.

NATURE OF THE OFFENSES

8. Defendant understands that for defendant to be guilty of the crime charged in count one, that is, RICO Conspiracy, in violation of 18 U.S.C. § 1962(d), the following must be true:

a. First, there was an agreement between two or more persons that: (i) an enterprise, namely, the CD-A Enterprise would exist, as alleged in the Information; and (ii) a member of the agreement associated with the CD-A Enterprise would conduct or participate, directly or indirectly, in the conduct of the CD-A Enterprise affairs through a pattern of racketeering activity, as described in the Information;

b. Second, defendant became a member of the agreement knowing of its purpose and agreeing to further or facilitate it; and

c. Third, the CD-A Enterprise would or did engage in, or its activities would or did affect, interstate or foreign commerce. An "enterprise" includes a group of people associated together for a

common purpose of engaging in a course of conduct over a period of time. "Racketeering activity" refers to the commission of multiple acts chargeable under provisions of federal and state law listed in the RICO Act, including Giving or Offering a Bribe, in violation of California Penal Code § 67, Requesting or Taking a Bribe, in violation of California Penal Code § 68, Honest Services Fraud through Mail and Wire Fraud, in violation of 18 U.S.C. §§ 1346, 1341, and 1343, Money Laundering, in violation of 18 U.S.C. §§ 1956, 1957, and Obstruction of Justice and Witness Tampering, in violation of 18 U.S.C. § 1512. A "pattern of racketeering activity" is at least two racketeering acts, the last of which occurred within ten years of the commission of a prior act of racketeering, that have a relationship to each other and pose a threat of continuity. Conduct forms a pattern if it consists of criminal acts that have the same or similar purposes, results, participants, victims, or methods of commission, or otherwise are interrelated by distinguishing characteristics and are not isolated. Defendant admits that defendant is, in fact, guilty of this offense as described in count one of the Information.

PENALTIES

9. Defendant understands that the statutory maximum sentence that the Court can impose for a violation of 18 U.S.C. § 1962(d) is: 20 years' imprisonment; a 3-year period of supervised release; a fine of $250,000 or twice the gross gain or gross loss resulting from the offense, whichever is greatest; and a mandatory special assessment of $100.

10. Defendant understands that supervised release is a period of time following imprisonment during which defendant will be subject to various restrictions and requirements. Defendant understands that

if defendant violates one or more of the conditions of any supervised release imposed, defendant may be returned to prison for all or part of the term of supervised release authorized by statute for the offense that resulted in the term of supervised release, which could result in defendant serving a total term of imprisonment greater than the statutory maximum stated above.

11. Defendant understands that, by pleading guilty, defendant may be giving up valuable government benefits and valuable civic rights, such as the right to vote, the right to possess a firearm, the right to hold office, and the right to serve on a jury. Defendant understands that he is pleading guilty to a felony and that it is a federal crime for a convicted felon to possess a firearm or ammunition. Defendant understands that the conviction in this case may also subject defendant to various other collateral consequences, including but not limited to revocation of probation, parole, or supervised release in another case and suspension or revocation of a professional license. Defendant understands that unanticipated collateral consequences will not serve as grounds to withdraw defendant's guilty plea.

FACTUAL BASIS

12. Defendant admits that defendant is, in fact, guilty of the offense to which defendant is agreeing to plead guilty. Defendant and the USAO agree to the statement of facts attached hereto as Attachment A and agree that this statement of facts is sufficient to support a plea of guilty to the charge described in this agreement and to establish the Sentencing Guidelines factors set forth in paragraph 14 below but is not meant to be a complete recitation of

all facts relevant to the underlying criminal conduct or all facts known to either party that relate to that conduct.

SENTENCING FACTORS

13. Defendant understands that in determining defendant's sentence the Court is required to calculate the applicable Sentencing Guidelines range and to consider that range, possible departures under the Sentencing Guidelines, and the other sentencing factors set forth in 18 U.S.C. § 3553(a). Defendant understands that the Sentencing Guidelines are advisory only, that defendant cannot have any expectation of receiving a sentence within the calculated Sentencing Guidelines range, and that after considering the Sentencing Guidelines and the other § 3553(a) factors, the Court will be free to exercise its discretion to impose any sentence it finds appropriate up to the maximum set by statute for the crime of conviction.

14. Defendant and the USAO agree to the following applicable Sentencing Guidelines factors:

Base Offense Level:	12	U.S.S.G. §§ 2E1.1(a)(2); 2C1.1(a)(1)
More than 1 Bribe:	+2	U.S.S.G. § 2C1.1(b)(1)
Bribe Value >$550,000:	+14	U.S.S.G. §§ 2C1.1(b)(2); 2B1.1(b)(1)(H)
Elected Official:	+4	U.S.S.G. § 2C1.1(b)(3)

Defendant and the USAO reserve the right to argue that additional specific offense characteristics, adjustments, and departures under the Sentencing Guidelines are appropriate.

15. Defendant understands that there is no agreement as to defendant's criminal history or criminal history category.

16. Defendant and the USAO reserve the right to argue for a sentence outside the sentencing range established by the Sentencing Guidelines based on the factors set forth in 18 U.S.C. § 3553(a)(1), (a)(2), (a)(3), (a)(6), and (a)(7).

WAIVER OF CONSTITUTIONAL RIGHTS

17. Defendant understands that by pleading guilty, defendant gives up the following rights:

a. The right to persist in a plea of not guilty.

b. The right to a speedy and public trial by jury.

c. The right to be represented by counsel – and if necessary have the Court appoint counsel - at trial. Defendant understands, however, that, defendant retains the right to be represented by counsel – and if necessary have the Court appoint counsel – at every other stage of the proceeding.

d. The right to be presumed innocent and to have the burden of proof placed on the government to prove defendant guilty beyond a reasonable doubt.

e. The right to confront and cross-examine witnesses against defendant.

f. The right to testify and to present evidence in opposition to the charges, including the right to compel the attendance of witnesses to testify.

g. The right not to be compelled to testify, and, if defendant chose not to testify or present evidence, to have that choice not be used against defendant.

h. Any and all rights to pursue any affirmative defenses, Fourth Amendment or Fifth Amendment claims, and other pretrial motions that have been filed or could be filed.

WAIVER OF APPEAL OF CONVICTION

18. Defendant understands that, with the exception of an appeal based on a claim that defendant's guilty plea was involuntary, by pleading guilty defendant is waiving and giving up any right to appeal defendant's conviction on the offense to which defendant is pleading guilty. Defendant understands that this waiver includes, but is not limited to, arguments that the statute to which defendant is pleading guilty is unconstitutional, and any and all claims that the statement of facts provided herein is insufficient to support defendant's plea of guilty.

LIMITED MUTUAL WAIVER OF APPEAL OF SENTENCE

19. Defendant agrees that, provided the Court imposes a total term of imprisonment of no more than 87 months, defendant gives up the right to appeal all of the following: (a) the procedures and calculations used to determine and impose any portion of the sentence; (b) the term of imprisonment imposed by the Court; (c) the fine imposed by the Court, provided it is within the statutory maximum; (d) to the extent permitted by law, the constitutionality or legality of defendant's sentence, provided it is within the statutory maximum; (e) the term of probation or supervised release imposed by the Court, provided it is within the statutory maximum; and (g) any of the following conditions of probation or supervised release imposed by the Court: the conditions set forth in General Order 20-04 of this Court; the drug testing conditions mandated by 18 U.S.C. §§ 3563(a)(5) and 3583(d).

20. The USAO agrees that, provided all portions of the sentence are at or below the statutory maximum specified above, the USAO gives up its right to appeal any portion of the sentence.

RESULT OF WITHDRAWAL OF GUILTY PLEA

21. Defendant agrees that if, after entering a guilty plea pursuant to this agreement, defendant seeks to withdraw and succeeds in withdrawing defendant's guilty plea on any basis other than a claim and finding that entry into this plea agreement was involuntary, then (a) the USAO will be relieved of all of its obligations under this agreement, including in particular its obligations regarding the use of Cooperation Information; (b) in any investigation, criminal prosecution, or civil, administrative, or regulatory action, defendant agrees that any Cooperation Information and any evidence derived from any Cooperation Information shall be admissible against defendant, and defendant will not assert, and hereby waives and gives up, any claim under the United States Constitution, any statute, or any federal rule, that any Cooperation Information or any evidence derived from any Cooperation Information should be suppressed or is inadmissible.

EFFECTIVE DATE OF AGREEMENT

22. This agreement is effective upon signature and execution of all required certifications by defendant, defendant's counsel, and an Assistant United States Attorney.

BREACH OF AGREEMENT

23. Defendant agrees that if defendant, at any time after the signature of this agreement and execution of all required certifications by defendant, defendant's counsel, and an Assistant United States Attorney, knowingly violates or fails to perform any of defendant's obligations under this agreement ("a breach"), the USAO may declare this agreement breached. For example, if defendant knowingly, in an interview, before a grand jury, or at trial, falsely

accuses another person of criminal conduct or falsely minimizes defendant's own role, or the role of another, in criminal conduct, defendant will have breached this agreement. All of defendant's obligations are material, a single breach of this agreement is sufficient for the USAO to declare a breach, and defendant shall not be deemed to have cured a breach without the express agreement of the USAO in writing. If the USAO declares this agreement breached, and the Court finds such a breach to have occurred, then:

a. If defendant has previously entered a guilty plea pursuant to this agreement, defendant will not be able to withdraw the guilty plea.

b. The USAO will be relieved of all its obligations under this agreement; in particular, the USAO: (i) will no longer be bound by any agreements concerning sentencing and will be free to seek any sentence up to the statutory maximum for the crime to which defendant has pleaded guilty; and (iii) will no longer be bound by any agreement regarding the use of Cooperation Information and will be free to use any Cooperation Information in any way in any investigation, criminal prosecution, or civil, administrative, or regulatory action.

c. The USAO will be free to criminally prosecute defendant for false statement, obstruction of justice, and perjury based on any knowingly false or misleading statement by defendant.

d. In any investigation, criminal prosecution, or civil, administrative, or regulatory action: (i) defendant will not assert, and hereby waives and gives up, any claim that any Cooperation Information was obtained in violation of the Fifth Amendment privilege against compelled self-incrimination; and (ii) defendant

agrees that any Cooperation Information and any Plea Information, as well as any evidence derived from any Cooperation Information or any Plea Information, shall be admissible against defendant, and defendant will not assert, and hereby waives and gives up, any claim under the United States Constitution, any statute, Rule 410 of the Federal Rules of Evidence, Rule 11(f) of the Federal Rules of Criminal Procedure, or any other federal rule, that any Cooperation Information, any Plea Information, or any evidence derived from any Cooperation Information or any Plea Information should be suppressed or is inadmissible.

COURT AND UNITED STATES PROBATION AND PRETRIAL SERVICES OFFICE NOT PARTIES

24. Defendant understands that the Court and the United States Probation and Pretrial Services Office are not parties to this agreement and need not accept any of the USAO's sentencing recommendations or the parties' agreements to facts or sentencing factors.

25. Defendant understands that both defendant and the USAO are free to: (a) supplement the facts by supplying relevant information to the United States Probation and Pretrial Services Office and the Court, (b) correct any and all factual misstatements relating to the Court's Sentencing Guidelines calculations and determination of sentence, and (c) argue on appeal and collateral review that the Court's Sentencing Guidelines calculations and the sentence it chooses to impose are not error, although each party agrees to maintain its view that the calculations in paragraph 14 are consistent with the facts of this case. This paragraph permits both the USAO and defendant to submit full and complete factual

information to the United States Probation and Pretrial Services Office and the Court, even if that factual information may be viewed as inconsistent with the Factual Basis agreed to in this agreement.

26. Defendant understands that even if the Court ignores any sentencing recommendation, finds facts or reaches conclusions different from those agreed to, and/or imposes any sentence up to the maximum established by statute, defendant cannot, for that reason, withdraw defendant's guilty plea, and defendant will remain bound to fulfill all defendant's obligations under this agreement. Defendant understands that no one –- not the prosecutor, defendant's attorney, or the Court –- can make a binding prediction or promise regarding the sentence defendant will receive, except that it will be within the statutory maximum.

NO ADDITIONAL AGREEMENTS

27. Defendant understands that, except as set forth herein, there are no promises, understandings, or agreements between the USAO and defendant or defendant's attorney, and that no additional promise, understanding, or agreement may be entered into unless in a writing signed by all parties or on the record in court.

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PLEA AGREEMENT PART OF THE GUILTY PLEA HEARING

28. The parties agree that this agreement will be considered part of the record of defendant's guilty plea hearing as if the entire agreement had been read into the record of the proceeding.

AGREED AND ACCEPTED

UNITED STATES ATTORNEY'S OFFICE
FOR THE CENTRAL DISTRICT OF
CALIFORNIA

NICOLA T. HANNA
United States Attorney

MACK E. JENKINS — Date 5/21/20
VERONICA DRAGALIN
Assistant United States Attorneys

GEORGE ESPARZA — Date 5/21/20
Defendant

TERRENCE JONES — Date May 21, 2020
Attorney for Defendant
GEORGE ESPARZA

CERTIFICATION OF DEFENDANT

I have read this agreement in its entirety. I have had enough time to review and consider this agreement, and I have carefully and thoroughly discussed every part of it with my attorney. I understand the terms of this agreement, and I voluntarily agree to those terms. I have discussed the evidence with my attorney, and my attorney has advised me of my rights, of possible pretrial motions that might be filed, of possible defenses that might be asserted either prior to or at trial, of the sentencing factors set forth in 18 U.S.C. § 3553(a), of relevant Sentencing Guidelines provisions, and of the consequences of entering into this agreement. No promises, inducements, or representations of any kind have been made to me other than those contained in this agreement. No one has threatened or forced me in any way to enter into this agreement. I am satisfied with the representation of my attorney in this matter, and I am pleading guilty because I am guilty of the charge and wish to take advantage of the promises set forth in this agreement, and not for any other reason.

George Esparza	5/21/20
GEORGE ESPARZA Defendant	Date

CERTIFICATION OF DEFENDANT'S ATTORNEY

I am GEORGE ESPARZA's attorney. I have carefully and thoroughly discussed every part of this agreement with my client. Further, I have fully advised my client of his rights, of possible pretrial motions that might be filed, of possible defenses that might be asserted either prior to or at trial, of the sentencing factors set forth in 18 U.S.C. § 3553(a), of relevant Sentencing Guidelines provisions, and of the consequences of entering into this agreement. To my knowledge: no promises, inducements, or representations of any kind have been made to my client other than those contained in this agreement; no one has threatened or forced my client in any way to enter into this agreement; my client's decision to enter into this agreement is an informed and voluntary one; and the factual basis set forth in this agreement is sufficient to support my client's entry of a guilty plea pursuant to this agreement.

TERRENCE JONES
Attorney for Defendant
GEORGE ESPARZA

May 20, 2020
Date

ATTACHMENT A

FACTUAL BASIS

A. The CD-A Enterprise

1. Throughout the period described in the attached Information, the Council District A Enterprise ("CD-A Enterprise"), located in the City of Los Angeles ("the City"), is and was a criminal enterprise composed of a group of individuals associated for a common purpose of engaging in a course of conduct, which course includes bribery, extortion, honest services fraud, money laundering, structuring, and obstruction of justice, to achieve the goals of the enterprise. The goals of the CD-A Enterprise included, but were not limited to:

a. enriching the members and associates of the CD-A Enterprise;

b. advancing the political goals and maintaining the control and authority of the CD-A Enterprise by elevating members and associates of the CD-A Enterprise to, and maintaining those individuals' placement in, prominent political positions;

c. concealing the financial activities of the CD-A Enterprise through money laundering and structuring; and

d. protecting the CD-A Enterprise by obstructing justice.

2. The CD-A Enterprise was led by Councilmember A, Councilmember for CD-A, who had jurisdiction over a large number of development projects undergoing the application and approval process in the City. Members and associates of the CD-A Enterprise conspired with one another to facilitate bribery schemes that would provide Councilmember A and other City officials financial benefits and keep

Councilmember A in power and maintain the CD-A Enterprise's political stronghold in the City.

3. In exchange, Councilmember A and members and associates of the CD-A Enterprise would take official action to ensure certain development projects and CD-A Enterprise associates received favored treatment from the City and thereby secure their bribe-financed influence. In addition, members and associates of the CD-A Enterprise sought political contributions from developers and their proxies (e.g., lobbyists, consultants, etc.) to benefit Councilmember A and allies in exchange for official acts to benefit those developers and their proxies.

4. In order to protect and hide the financial payments that flowed from the developers and their proxies to the public officials, members and associates of the CD-A Enterprise engaged in money laundering and other illegal activities to conceal monetary transactions and bribe payments.

5. In order to protect the CD-A Enterprise and avoid law enforcement detection, members and associates of the CD-A Enterprise engaged in the following types of obstructive conduct: (1) lying to law enforcement in an effort to impede the investigation into criminal conduct of the CD-A Enterprise; and (2) attempting to corruptly influence the statements of others to law enforcement.

6. As a result of its bribery, extortion, honest services fraud, money laundering, and structuring conduct, throughout the period described in the attached Information, and as known to defendant ESPARZA, CD-A Enterprise members and associates engaged in, and their activities in some way affected, commerce between one state and another state.

B. Defendant's Role in the CD-A Enterprise

7. Beginning no later than February 2013, and continuing at least until November 2018, defendant ESPARZA was a member of the CD-A Enterprise. In that capacity, defendant ESPARZA conspired and agreed with other CD-A Enterprise members that a conspirator would commit at least two racketeering acts, in the form of conspiracy to commit bribery, honest services fraud, and structuring, which acts had a relationship to one another and the CD-A Enterprise, and posed a threat of continued criminal activity. Defendant ESPARZA became a member of this conspiracy knowing of this object, knowing it was illegal, and intending to help accomplish it.

8. Defendant ESPARZA was Councilmember A's Special Assistant and an employee of the City from September 2009 until December 31, 2017.

9. Defendant ESPARZA, along with other members and associates of the CD-A Enterprise, operated and helped to operate a pay-to-play scheme within the City, wherein public officials solicited and demanded direct and indirect financial benefits from developers and their proxies in exchange for official acts. In exchange for such financial benefits from developers and their proxies, defendant ESPARZA and Councilmember A agreed to perform and performed the following types of official acts, among others: (1) filing motions and voting on projects in various City committees, including City Council; (2) taking, or not taking, action on the Planning and Land Use Management ("PLUM") Committee to influence the approval process and project costs; (3) negotiating with and exerting pressure on labor unions and other City entities to resolve issues on projects; (4) exerting pressure on developers with projects pending before the

City to affect their business practices; and (5) taking official action to enhance the professional reputation and marketability of businesspersons in the City.

10. Also in furtherance of the racketeering conspiracy, defendant ESPARZA facilitated and participated in at least the following schemes:

1. Project E Bribery Scheme

11. In or around February 2013, Individual 1, then the Interim General Manager of the Los Angeles Department of Building and Safety ("LADBS"), introduced defendant ESPARZA and Councilmember A to Chairman E at a dinner in Los Angeles, California. Chairman E, a Chinese national and billionaire, owned Company E, one of China's leading real estate development companies. Chairman E also owned Property E, located in CD-A, and another property, located in another Council District in the City.

12. Between March 2013 and November 2018, Chairman E, aided and abetted by Individual 1 and others, provided financial benefits directly and indirectly to defendant ESPARZA and Councilmember A, in exchange for defendant ESPARZA's and Councilmember A's assistance to Chairman E and Company E in Councilmember A's official capacity as a City Councilmember on an ongoing and as-needed basis and related to specific matters. Defendant ESPARZA, Councilmember A, Chairman E, Individual 1, and others established a mutually beneficial agreement to exchange a stream of benefits for official acts and to further the CD-A Enterprise's goals. Specifically, Chairman E provided defendant ESPARZA and Councilmember A financial benefits in over a dozen trips to casinos in Las Vegas and Australia. Between June 2014 and January 2018, defendant ESPARZA personally accepted at least approximately

$32,000 in gambling chips, plus flights on private jets and commercial airlines, stays at luxurious hotels, expensive meals and alcohol, spa services, event tickets, and escort services from Chairman E.

13. For example, on January 1, 2016, defendant ESPARZA, Councilmember A, Chairman E, and Executive Director E, Chairman E's right hand man, traveled to Australia (the "January 2016 Australia trip"), where defendant ESPARZA and Councilmember A accepted financial benefits from Chairman E, including private jet flights for defendant ESPARZA, a $10,980 commercial airline ticket for Councilmember A, hotels, meals, alcohol, and other expenses. In addition, Chairman E provided defendant ESPARZA and Councilmember A casino chips, which defendant ESPARZA and Councilmember A cashed out in Australian dollars.

14. After the January 2016 Australia trip, defendant ESPARZA and Councilmember A discussed evading bank reporting requirements in converting Australian dollars to American dollars in an effort to conceal their financial relationship with Chairman E, to avoid law enforcement detection, and to protect the CD-A Enterprise. Specifically, on February 8, 2016 and February 9, 2016, defendant ESPARZA and Councilmember A had a conversation via text message regarding evading bank reporting requirements when converting Australian dollars they received from Chairman E. Defendant ESPARZA told Councilmember A about the exchange rate, adding: "They are asking me for my drivers license and social security for IRS record. Do you think it's fine to leave my info?" Councilmember A responded: "No. Maybe we can change a little at a time...under 10 k in future." Councilmember A also wrote: "Don't exchange if they are asking u for

all that info." Councilmember A later instructed defendant ESPARZA by text message: "Go to the other place tomorrow and take 9 k. See if they change 9 k without getting your social security number." Councilmember A added: "Even if they take your social security, it doesn't mean that they will report to irs. They probably will just keep it for their records but not do anything with tax reporting." Defendant ESPARZA responded: "Ok cool. I'll go tomorrow." Defendant ESPARZA later wrote: "I exchanged 10k today. Will do another tomorrow. If it's under 10k, they will not report."

15. Between approximately July 2014 and September 2014, Chairman E, at Individual 1's urging and with defendant ESPARZA's knowledge, facilitated the payment of $600,000 to help Councilmember A privately and confidentially resolve a sexual harassment lawsuit filed against Councilmember A during the time Councilmember A was facing re-election. Specifically, on June 7, 2013, a sexual harassment lawsuit was filed against Councilmember A by a former CD-A employee. Thereafter, Councilmember A, Chairman E, and Individual 1 orchestrated an arrangement whereby Chairman E secured $600,000 in collateral for Councilmember A to obtain a personal loan from a bank for $570,000 to privately pay the sexual harassment settlement and legal fees and resolve it without publicly disclosing details. Defendant ESPARZA and Executive Director E, on behalf of Chairman E, facilitated the arrangement. Councilmember A expressed to defendant ESPARZA the need to conceal this arrangement, including concealing the fact that Chairman E was the source of the $600,000 collateral.

16. In exchange for the $600,000 collateral for Councilmember A's personal loan, Chairman E asked for a series of benefits from defendant ESPARZA and Councilmember A during the time Chairman E was

also supplying financial benefits to defendant ESPARZA and Councilmember A.

17. For example, in 2014, to benefit Chairman E's reputation in the City's business community, Councilmember A introduced and signed a resolution before the City Council recognizing Chairman E for Chairman E's achievements and contributions to the economy of CD-A, which the City Council signed and adopted.

18. Most significantly, Chairman E provided bribes to defendant ESPARZA and Councilmember A because, as the Chair of the PLUM Committee and CD-A Councilmember, Councilmember A was poised to significantly benefit Chairman E's desire and plans to redevelop Property E and transform it into a 77-story skyscraper, making it the tallest building west of the Mississippi River ("Project E"). Project E would require official acts from Councilmember A at various stages of the City approval process.

19. On August 4, 2016, Councilmember A, Individual 1, senior officials from the Planning Department, and senior CD-A staff members met with Chairman E and his team to discuss Project E, including Chairman E's interest in pursuing Transient Occupancy Tax ("TOT") rebates, Transfer of Floor Area Rights ("TFAR"), and other incentives from the City.

20. In or around August 2016, on a private jet flight back from Las Vegas, Chairman E requested Councilmember A's assistance in hiring a consultant on Project E. Thereafter, on August 15, 2016, defendant ESPARZA texted Councilmember A regarding Project E: "Reminder boss to decide what land use expediters you want to recommend to the Chairman [E]."

21. On December 16, 2016, defendant ESPARZA forwarded an e-mail to Councilmember A from City Staffer A-2, a CD-A staff member, listing a number of consultants, writing: "Hi Boss, Here is the list of land use consultants per [City Staffer A-2]'s past recommendations. Chairman [E] would like us to schedule interviews on Monday."

22. On April 27, 2017, in a telephone call between defendant ESPARZA and Executive Director E, the two discussed a proposed consultant for Project E. Defendant ESPARZA stated: "So, remember, the Chairman [E] was gonna hire [a specific consultant]? ... [Councilmember A] wanted me to tell the Chairman [E] not to hire him anymore." When Executive Director E asked why, defendant ESPARZA responded: "Because, ah, [Councilmember A] can't trust him ... he's too loyal to another elected official.... So [Councilmember A] doesn't think it's a good idea, it's not a good idea to, to put him on the project."

23. Chairman E brought up Project E on numerous occasions in the presence of defendant ESPARZA and Councilmember A. Chairman E, through translation provided by Executive Director E, expressed to Councilmember A that Chairman E wanted to build the tallest tower west of the Mississippi. In response, Councilmember A expressed support of the project.

24. On May 9, 2017, in a telephone call, defendant ESPARZA and Executive Director E discussed the relationship between Chairman E and Councilmember A. Executive Director E stated that Chairman E expected to lay everything in front of Councilmember A at an upcoming trip to Cabo San Lucas, which defendant ESPARZA understood to refer to the assistance Chairman E expected from Councilmember A on Project

E. Executive Director E added that Chairman E was "going to make [Councilmember A] think that, make it, otherwise Chairman [E] ask him to, uh, pay back that $600,000 already. Last night." When defendant ESPARZA stated that "[Councilmember A]'s not going to do that either," Executive Director E responded: "Chairman [E] will push him." According to Executive Director E, Chairman E raised this issue with Councilmember A the previous evening at the same time that Chairman E told Councilmember A that Chairman E heard from multiple sources that the FBI was looking into Councilmember A.

25. On May 9, 2017, in a telephone call between defendant ESPARZA and another CD-A staffer, defendant ESPARZA stated: "Chairman [E] should have all the leverage in the world [be]cause of what [Councilmember A] owes [Chairman E]." Defendant ESPARZA meant that Chairman E expected Councilmember A's assistance on Project E, or any other requested assistance, from Councilmember A because of the financial benefits Chairman E had provided to Councilmember A.

2. Project C Bribery Scheme

26. In the summer of 2016, Labor Organization A filed an appeal requesting to suspend all activity to implement one of Developer C's development projects, Project C, that required City approval until Project C was brought into compliance with the requirements of the California Environmental Quality Act ("CEQA") by correcting certain deficiencies (the "appeal"). The appeal prevented Project C from progressing through the rest of the City approval processes, including approvals by the PLUM Committee and City Council.

27. Between August 2016 and July 2017, Developer C agreed to fund a $500,000 cash bribe designed to benefit Councilmember A, through defendant ESPARZA and Justin Kim ("Kim"), in exchange for

Councilmember A's assistance on Project C. Developer C, through Kim, initially provided $400,000 in cash that Developer C intended for Councilmember A between February and March 2017. Councilmember A directed defendant ESPARZA to hold on to $200,000 of the total bribe payment for Councilmember A. Defendant ESPARZA and Kim each kept a portion of the remaining $200,000 bribe payment for themselves as kickbacks for facilitating the bribe. In exchange, Developer C, through Kim and defendant ESPARZA, sought to use Councilmember A's influence as the Councilmember of CD-A and Chair of the PLUM Committee to pressure Labor Organization A to withdraw, abandon, or otherwise lose its appeal opposing Project C, thereby allowing the project to move forward in its City approval process.

28. On September 1, 2016, defendant ESPARZA, Kim, and Councilmember A had dinner together and then visited a Korean karaoke establishment in Los Angeles. During the karaoke meeting, Kim asked Councilmember A for assistance with the appeal on Project C, and Councilmember A agreed to help. Kim then called Developer C and asked him to join the group at karaoke, which Developer C did.

29. On September 2, 2016, defendant ESPARZA and Kim met for lunch in Los Angeles. At Councilmember A's direction, defendant ESPARZA expressed to Kim that Councilmember A would not help Project C for free and that Councilmember A's help would require a financial benefit in exchange for help ensuring Project C moved forward through the City approval process.

30. On January 17, 2017, defendant ESPARZA, Councilmember A, Kim, and Developer C's business associates met at Councilmember A's City Hall office to discuss, among other things, Project C. During a private meeting that included only defendant ESPARZA, Councilmember

A, and Kim, Kim again asked Councilmember A for assistance with the appeal, and Councilmember A responded that he could help.

31. In or around January 2017, at the direction of Councilmember A, defendant ESPARZA learned that resolving the appeal on Project C would save Developer C an estimated $30 million on development costs.

32. In or around January 2017, based on conversations with Councilmember A and Lobbyist C, defendant ESPARZA told Kim that it would cost approximately $1.2 million to $1.4 million to get Councilmember A to resolve the appeal and allow Project C to move forward in the City approval process.

33. Between February 2, 2017 and February 10, 2017, defendant ESPARZA had individual text message conversations with Councilmember A and Kim, discussing the negotiation of the bribe payment and the amount of the bribe payment from Developer C to Councilmember A.

34. In approximately February 2017, defendant ESPARZA and Kim had discussions regarding the negotiation of the bribe amount. Kim conveyed a counteroffer of $500,000 cash from Developer C for Councilmember A. Defendant ESPARZA then conveyed this counteroffer to Councilmember A.

35. In approximately February 2017, defendant ESPARZA and Kim met at a restaurant in Los Angeles to discuss the bribe amount. Defendant ESPARZA and Kim discussed that Developer C agreed to pay $500,000 in cash in exchange for Councilmember A's assistance in resolving the appeal so that Project C could move forward in the City approval process, including approvals by the PLUM Committee and City Council. Thereafter, defendant ESPARZA conveyed this agreed-upon bribe payment amount to Councilmember A, stating specifically that

Councilmember A would get $300,000 total and Kim would get $200,000 total for facilitating the bribery scheme.

36. In approximately February and March 2017, defendant ESPARZA and Councilmember A discussed the appeal. Councilmember A instructed defendant ESPARZA to speak to Lobbyist C, a close associate of the Executive Director of Labor Organization A. Subsequently, Councilmember A told defendant ESPARZA that Councilmember A discussed the appeal with Lobbyist C. Councilmember A conveyed to Lobbyist C that Councilmember A would oppose the appeal in the PLUM committee. Lobbyist C agreed to discuss the issue with the Executive Director of Labor Organization A.

37. On February 14, 2017, defendant ESPARZA had a text message conversation with Lobbyist C about setting up a private meeting between Lobbyist C and Councilmember A. Specifically, defendant ESPARZA wrote: "My boss [Councilmember A] asked if you guys can have a one on one on Tuesday at 830am?... Just you and the Councilman."

38. On February 22, 2017, defendant ESPARZA had a text message conversation with Lobbyist C about another private meeting at Councilmember A's request. Specifically, defendant ESPARZA wrote: "Hi [Lobbyist C], free tomorrow to meet? Councilman asked me to meet with you." Lobbyist C responded: "Yea." Defendant ESPARZA then replied: "I still need to talk to you one on one per my bosses [Councilmember A] request." Lobbyist C responded: "No problem."

39. On March 1, 2017, defendant ESPARZA had a text message conversation with Lobbyist C regarding the appeal. Specifically, defendant ESPARZA asked: "Everything good?" Lobbyist C then replied: "Think so, You?" Defendant ESPARZA responded: "Yes sir.. just checking in."

40. On March 3, 2017, Lobbyist C sent defendant ESPARZA a text message regarding the appeal on Project C, writing: "Appeal dropped today." Defendant ESPARZA then informed Kim that Councilmember A had held up Councilmember A's end of the bargain and helped resolve the appeal.

41. On March 14, 2017, defendant ESPARZA and Councilmember A met at Councilmember A's residence. Defendant ESPARZA told Councilmember A that Developer C had provided $400,000 in cash to date, and that Developer C would provide the remaining $100,000 later. Defendant ESPARZA stated that Kim had provided $200,000 of that cash to defendant ESPARZA. At the meeting, defendant ESPARZA showed Councilmember A a liquor box filled with approximately $200,000 cash. Councilmember A told defendant ESPARZA to hold on to and hide the money at defendant ESPARZA's residence until Councilmember A asked for it. Defendant ESPARZA understood this was because Councilmember A wanted to hide the money. Councilmember A told defendant ESPARZA that defendant ESPARZA could have $100,000 of the $300,000 total amount Councilmember A expected to receive from Developer C.

42. In or around July 2017, defendant ESPARZA asked Executive Director E to hold on to approximately $250,000 in cash for defendant ESPARZA because defendant ESPARZA feared that law enforcement would search his residence and find the illicit cash. This cash was comprised of the cash provided by Kim as part of the Project C bribery scheme for Councilmember A and defendant ESPARZA and additional cash defendant ESPARZA received from Chairman E and Businessperson A, as discussed below. Executive Director E agreed to hide the cash for defendant ESPARZA.

43. On December 28, 2017, defendant ESPARZA and Councilmember A met at City Hall and, in Councilmember A's private bathroom, discussed various topics, including defendant ESPARZA's interviews with the FBI, and the cash bribe defendant ESPARZA was holding for Councilmember A. Specifically, during that conversation, Councilmember A stated: "And secondly, um, look, uh, I have a lot of expenses now that with [Relative A-1] running, [Relative A-1]'s not going to be working anymore. I'm gonna need money. Um, that is mine, right? That is mine." Defendant ESPARZA understood that Councilmember A was referring to the $200,000 cash bribe payment from Developer C via Kim that Councilmember A had asked defendant ESPARZA to hide at defendant ESPARZA's residence. Defendant ESPARZA affirmed the bribe money was for Councilmember A. Defendant ESPARZA and Councilmember A agreed to wait until April 1, 2018, for defendant ESPARZA to provide the $200,000 cash owed to Councilmember A, to allow some cooling off period after defendant ESPARZA's interviews with the FBI in hopes that it would decrease the likelihood of law enforcement discovering the cash. However, defendant ESPARZA never gave Councilmember A the outstanding $200,000 cash because defendant ESPARZA was concerned about the FBI corruption investigation, so instead defendant ESPARZA gave the money to Executive Director E to hide.

3. Businessperson A Retainer Payment Scheme

44. Businessperson A was a business owner with businesses operating in CD-A. Defendant ESPARZA and Councilmember A met Businessperson A in approximately 2016 or 2017 through Chairman E and Executive Director E. Businessperson A requested assistance from defendant ESPARZA and Councilmember A to enhance Businessperson A's

financial prospects. Specifically, Businessperson A asked defendant ESPARZA and Councilmember A to use their official positions to make introductions to developers and advocate that such developers use Businessperson A's business.

45. In order to facilitate this scheme, Businessperson A provided defendant ESPARZA retainer payments for his services. Specifically, from approximately January 2017 to June 2017, defendant ESPARZA accepted approximately $8,000 to $10,000 in cash from Businessperson A on a monthly basis in exchange for defendant ESPARZA arranging meetings for Businessperson A with developers in the City. On several occasions, Businessperson A provided the cash to defendant ESPARZA in the bathroom during meetings in restaurants.

4. Businessperson A Funds June 2017 Las Vegas Trip

46. On or around June 1, 2017, defendant ESPARZA traveled to Las Vegas with, among others, Businessperson A, then CD-12 Councilmember Mitchell Englander, City Staffer B, Lobbyist A, and Developer A (the "June 2017 Las Vegas trip"). During the June 2017 Las Vegas Trip, defendant ESPARZA, Englander, City Staffer B, and others each received at least the following benefits directly or indirectly (via hotel "comps") from Businessperson A: a hotel room at a Las Vegas Casino and Hotel, transportation to and from the hotel, casino chips to gamble, dinner and drinks at the hotel restaurant totaling approximately $2,481 (for the group), bottle service at a nightclub for which Businessperson A paid approximately $25,000 and Developer A paid an approximately additional $10,000 (for the group and others).

47. After the group returned to their hotel in the early morning of June 2, 2017, Businessperson A told defendant ESPARZA and

Englander that Businessperson A was going to order female escorts to come to their hotel. When two escorts arrived to the hotel, Businessperson A paid approximately $300-400 in cash for the escorts' services for Businessperson A and defendant ESPARZA and instructed one of the escorts to go to Englander's hotel room to provide him escort services.

48. On or about June 5, 2017, defendant ESPARZA and Councilmember A discussed the June 2017 Las Vegas trip in a telephone call. Specifically, Councilmember A asked about the use of escorts during the trip, referring to "girls" that defendant ESPARZA and Businessperson A sent to Englander. Defendant ESPARZA confirmed the use of escorts during the trip.

C. FBI's Interviews of Defendant ESPARZA

49. On June 20, 2017, the FBI interviewed defendant ESPARZA regarding a public corruption investigation. At the beginning of this interview, defendant ESPARZA was advised that lying to the FBI was a crime. During the interview, defendant ESPARZA falsely stated that he had no knowledge of any City official helping on a project in exchange for money, gifts, or campaign contributions. During the interview, the FBI told defendant ESPARZA there was a Grand Jury investigation and asked defendant ESPARZA not to reveal the interview to others because it may negatively impact the federal investigation. Defendant ESPARZA told the FBI he understood he should not reveal such information to others.

50. Nevertheless, on June 20, 2017, the same day as his first FBI interview, and in the days shortly thereafter, defendant ESPARZA disclosed to numerous associates, including Councilmember A, Kim, and Executive Director E, that he was interviewed by the FBI. For

example, on June 20, 2017, defendant ESPARZA told Councilmember A about his interview with the FBI. Councilmember A was worried that the FBI would ask questions about Businessperson A and Chairman E. Councilmember A instructed defendant ESPARZA not to tell anyone that defendant ESPARZA disclosed information to Councilmember A about the FBI interview.

51. On July 1, 2017, the FBI again interviewed defendant ESPARZA. At the beginning of this interview, defendant ESPARZA was advised that lying to the FBI was a crime. During the second FBI interview, defendant ESPARZA falsely stated that: (1) other than the June 2017 Las Vegas trip with then-Councilmember Englander, defendant ESPARZA was not aware of any chip sharing with any other councilmember in Las Vegas; (2) Councilmember A told defendant ESPARZA to be cooperative with and not hide information from the FBI; (3) Executive Director E had no City business with defendant ESPARZA; (4) Kim did not have City business with defendant ESPARZA; and (5) defendant ESPARZA did not know of anyone paying money to City officials.

52. On July 12, 2017, defendant ESPARZA and Kim met in person in a car near defendant ESPARZA's residence, and then drove around in the car. During this meeting, defendant ESPARZA and Kim discussed the content of their recent respective FBI interviews, in which both defendant ESPARZA and Kim lied to the FBI and deliberately failed to disclose information regarding the Project C bribery scheme. During this meeting, Kim asked if defendant ESPARZA wanted the remaining $100,000 from Developer C. Due to defendant ESPARZA's concern that the FBI investigation was closing in on him and Councilmember A,

defendant ESPARZA declined to take possession of the outstanding bribery money at that time.

D. Defendant ESPARZA's Concealment of Benefits

53. Defendant ESPARZA did not report any of the financial benefits from Chairman E, Developer C, Kim, or Businessperson A as gifts on his applicable Form 700s.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 16

Garcetti appointee named in FBI warrant quits his post

Mayor Eric Garcetti, left, appointed Joel Jacinto to L.A.'s Board of Public Works in 2015. Jacinto has submitted his resignation. (Handout)

By David Zahniser, Adam Elmahrek
Jan. 18, 2019 | 5 PM

An appointee of Los Angeles Mayor Eric Garcetti who was named in a federal search warrant filed in the FBI's ongoing City Hall corruption probe resigned from his post Friday.

Joel Jacinto, who sat on the five-member Board of Public Works, submitted a resignation letter that went into effect immediately. His attorney, Thomas M. Brown, said in an email that Jacinto stepped aside voluntarily to avoid becoming a distraction for his agency.

"If contacted by any federal agency, he will fully and voluntarily cooperate as a witness against any individuals within city government," Brown said. "He hopes that he will be able to return to his position as commissioner in the near future after any distraction related to his willingness to serve as a witness is completed."

Jacinto and his wife, Ave Jacinto, were among 13 people named in the warrant, which was filed in federal court in November and reviewed by The Times last week. The warrant said agents were seeking evidence related to an investigation into an array of potential crimes, including bribery, kickbacks and extortion, possibly involving those people.

Garcetti named Jacinto to the public works board in 2015, saying he expected him to "improve life for Angelenos" and ensure the city was working efficiently. Board members oversee such issues as street repairs, trash pickup and the city's sewer system, earning a salary of more than $160,000 annually.

The federal search warrant named several other City Hall figures, including Councilman Jose Huizar, whose home and offices were searched by the FBI in November; Councilman Curren Price, who represents part of South Los Angeles; and Deron Williams, chief of staff to council President Herb Wesson.

Garcetti had no comment. The investigation poses some political risk for the mayor, who is weighing whether to run for president and could face questions about the probe on any campaign trail.

Agents served the warrant on Google in July, seeking information from a private email account for Ray Chan, who served as Garcetti's deputy mayor for economic development in 2016 and 2017. Prior to that, Chan was Garcetti's top executive at the city's Department of Building and Safety.

The warrant does not say the FBI has gathered evidence of criminal activity by any of the people named in the document, and there were no records attached to the warrant saying what evidence, if any, was discovered in Chan's email account.

Jacinto, who did not attend Friday's public works meeting, referred questions from The Times to his lawyer. Last week, he said he was unaware that he had been mentioned in a search warrant. At the time, he said his wife is an independent contractor but did not provide further details.

While serving on the board, Jacinto was assigned to work with the city's Bureau of Engineering, which reviews permits that are provided to companies that seek to carve into streets and sidewalks as part of their construction projects.

He also was in regular contact with Chan, then a city employee, and scheduled several meetings with real estate developers or about development, according to an excerpt of his appointment calendar from 2016, a copy of which was obtained by The Times.

The appointment calendar lists at least one meeting, scheduled in September 2016, about Hazens Real Estate Group. Shenzhen Hazens Real Estate Group received approval from the council the following year to demolish the nine-story Luxe City Center Hotel, located on Figueroa Street in downtown Los Angeles, and replace it with two skyscrapers — one for a hotel, the other for condominiums.

Investigators asked in the warrant about the Luxe Hotel and George Chiang, who is mentioned in city records as being involved with the Hazens skyscraper project. The warrant also said investigators sought information on development projects in and around Los Angeles that were "related to foreign investors," including Hazens.

David Chaiken, a company attorney, told The Times earlier this week that Shenzhen Hazens was unable to share any information about its activities or the investigation.

In 2016, Jacinto also scheduled at least one meeting with Chiang, according to his calendar. Chiang has been serving as chief executive with CCC Investment Group, while Chan, the former deputy mayor, has been working as CCC's vice president of development, according to city and state records.

Prior to his city employment, Jacinto worked as a global sales coordinator for FRHI Hotels and Resorts, according to paperwork he submitted when he joined the public works board.

A significant figure in the city's Filipino community, he also worked previously as executive director of the Search to Involve Pilipino Americans, a nonprofit group based in Historic Filipinotown that focuses on economic and community development. He has been involved in other organizations and events that support Asian Americans, as well.

Leo Pandac, a former board president for the nonprofit group, said the naming of Jacinto in the warrant — and the resignation on Friday — were "shocking to everybody in the community." Jacinto did a good job running the nonprofit, helping it grow over the course of his tenure, and frequently came with Garcetti to neighborhood cleanups in Historic Filipinotown, Pandac said.

"He's a good man. He's a nice man," he added. "That's why probably Eric hired him."

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 17

STATE OF CALIFORNIA, RESOURCES AGENCY EDMUND G. BROWN, JR., GOVERNOR

DEPARTMENT OF CONSERVATION

CALIFORNIA GEOLOGICAL SURVEY

801 K STREET • MS 12-30 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 445-1825 • **FAX** 916 / 445-5718 • **TDD** 916 / 324-2555 • **WEBSITE** conservation.ca.gov

July 20, 2013

Honorable Herb Wesson, President
Los Angeles City Council

c/o June Lagmay, City Clerk
City of Los Angeles
200 North Spring Street
City Hall – Room 360
Los Angeles, CA 90012

Re: Commencement of Alquist-Priolo Fault Zone Study, Hollywood Fault Zone
Millennium Hollywood Project; EIR No. ENV-2011-0675-EIR

Dear Council President Wesson:

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Division 2, Chapter 7.5, Sections 2621 *et seq.*) requires the State Geologist to place Earthquake Fault Zones around faults deemed to be sufficiently active and well-defined. Under this Act, cities and counties affected by the zones must regulate certain development projects within the zones. They must withhold development permits for sites within the zones until geologic investigations demonstrate that the sites are not threatened by surface displacement from future faulting.

Based on a number of independent geological investigations, and recent work by the California Geological Survey (CGS) culminating in the *2010 Fault Activity Map of California*, CGS has commenced a detailed study of the Hollywood Fault and its associated splay faults for possible zoning as "Active" (as defined by the State Mining and Geology Board in the California Code of Regulations, Section 3601(a)) pursuant to the Alquist-Priolo Act. This investigation and resultant maps and reports are scheduled for completion by the end of this year or early in 2014.

It is our understanding that the Los Angeles City Council and the Planning Commission are in the process of reviewing plans for the prospective Millennium Hollywood Project, which may fall within an Earthquake Fault Zone should our investigations conclude that an active portion of the Hollywood Fault lies within the project site. If sufficient information results in the placement of an Earthquake Fault Zone, it will provide the City with new information for its consideration of current and future proposed developments all along the Hollywood Fault.

Results of this investigation will be provided to the City of Los Angeles immediately upon their release, and the City will have an opportunity to examine and comment on the Preliminary version of the maps and reports. Please do not hesitate to contact the CGS at any time if you have questions regarding this fault-zoning process.

Sincerely,

John G. Parrish, Ph. D., PG
State Geologist

MILLENNIUM CHRONOLOGY
1720 - 1770 VINE STREET

Dana Prevost

1.	02/23/2012	Fee paid, tract map (VTT71837) stamped and Langan report, dated 11/22/2011, taken in and placed in holding area pending receipt of tract map from City Planning.
2.	04/18/2012	Soil report by Langan, dated 11/22/2012, was logged in for review.
3.	05/23/2012	LADBS Correction letter issued. Reviewed by Jeffrey Wilson and Jesus Acosta.. Requested detailed geotechnical study and requested geologic investigation for potential surface displacement on the Hollywood Fault.
4.	07/02/2012	Meeting between Grading Division and Langan (Dan Eberhart) regarding the need for a fault investigation.
5.	11/08/2012	Meeting between Grading Division and Langan (Dan Eberhart) regarding proposed exploration plan for fault investigation
6.	12/17/2012	Reports by Langan, dated 11/30/2012 (fault investigation) and 12/03/2012 (soil report) submitted.
7.	01/31/2013	LADBS issued approval letter for tentative tract and fault investigation report. Detailed geotechnical study to be provided prior to issuance of permits and/or recordation of tract map. Also additional fault studies to be done if development is proposed on northern portion of site, now occupied by Enterprise Car Rental.
8.	06/04/2013	Received first call from Dr. James Dolan (geology professor at USC and recognized as expert on Hollywood Fault). Arranged for him to view fault report.
9.	06/05/2013	Received email from Dolan expressing concerns about the lack of correlation between boreholes. In phone conversation he requested that I take a look at the report.
10.	6/10/2013 to 6/13/2013	LADBS Grading Division reviewed report again and had concerns about lack of core recovery in addition to Dolan's concerns of lack of correlation between boreholes.
	06/11/2013	Received email from a George Abrahams requesting access to Langan report. (Did not know George Abrahams)
11.	6/13/2013	Left a message with Langan geologist, Dan Eberhart about concerns and

		indicated that we would like to discuss the investigation because based on a closer look at the report we may have to rescind our approval and require additional exploration.
12.	6/14/2013 to 6/23/2013	Dana Prevost on Vacation; Jeffrey Wilson spoke with Eberhart during this time and did not receive satisfactory answers to our concerns
13.	06/25/2013	Left message with Eberhart that due to concerns over the investigation and the lack of a satisfactory explanation it appeared that we would need to rescind our approval and require additional exploration.
14.	06/26/2013	received email from George Abrahams, expressing his concern about the fault investigation. Attached to the email was the Silverstein Report dated 06/18/2013 that was part of an appeal being heard by PLUM.
15.	06/28/2013	Received first phone call from George Abrahams, Director of Beachwood Canyon Neighborhood Assoc, expressing their concerns over the fault investigation.
16.	07/01/2013	Phone message from Eberhart that he wanted to meet.
17.	07/03/2013	Received email from SheppardMullin that Jerry Neuman would like to meet with Dana Prevost, Ray Chan and Dan Eberhart.
18.	07/11/2013	Silverstein Law Firm issues Public Records Act Request to Hazel Harris and Dana Prevost
19.	07/12/2013	Received call from John Parrish, Calif. State Geologist over the Calif. Geologic Survey, expressing concerns about the Millennium fault investigation.
20.	07/15/2013	Silverstein Law Firm issues letter to LADBS regarding "Objections to Millennium Hollywood Project: Inadequate Review of Geology/Seismology"
21.	07/16/2013	Meeting with Millennium geologists and attorneys. Ray Chan and Bob Steinbach also present at meeting. The result of the meeting is that Langan will do additional fault investigation.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 18

Editorial: Just how dirty is L.A. City Hall?

Los Angeles City Hall. (Los Angeles Times)

By The Times Editorial Board
May 15, 2020 | 3 AM

Just how dirty is Los Angeles City Hall?

The guilty pleas are piling up in the ongoing federal pay-to-play corruption investigation. Already, former City Councilman Mitch Englander has admitted to taking envelopes of cash and other gifts from a businessman who wanted to do more work in the city. Then a political fundraiser admitted to helping a real estate developer pay off another council member — presumably Councilman Jose Huizar, based on the descriptions in court documents — to clear the way for a major project.

And now a consultant has admitted to being part of a scheme to bribe a councilman — again, presumably Huizar — with cash, political contributions, concert and sports tickets and other gifts.

Huizar hasn't been named by prosecutors, but the details in the court filings make clear he is at the heart of the federal City Hall investigation. His home and office were raided by the FBI in November 2018. Huizar hasn't been charged, but on Thursday, Council President Nury Martinez moved to suspend him from the council, which would block him from attending meetings or voting on city matters.

These recent cases paint a horrifying picture of how business is conducted in the city, with charges of bribery, racketeering and other illicit schemes orchestrated by city officials with businessmen trying to buy special treatment.

And you know what's really galling? Until this week, there was barely a peep of concern from city leaders, including Mayor Eric Garcetti and Martinez and their colleagues. Only two council members, Bob Blumenfield and David Ryu, put out statements lamenting the corruption charges.

Where was the shock? The outrage? Where was the righteous indignation that the government they represented had been tarnished? Or the embarrassment that the soft corruption of political contributions from favor-seeking individuals had transformed into raw bribery complete with bags of cash?

If these were normal times, not a pandemic, the plea deals would have rocked City Hall and put its leaders on the defensive. But the all-consuming focus on COVID-19 has allowed them to push the pay-to-play scandal to the side and avoid confronting the systematic problems that enable corruption.

The unwritten understanding in Los Angeles is that council districts are fiefdoms over which council members have sole discretion to make real estate development decisions, including whether a project gets a tax break or an exemption from land-use rules.

That concentration of power leads developers and other business interests to woo council members. Usually people curry favor with campaign contributions or donations to a politician's favorite charity. In some cases, apparently, businesses will resort to bribes and other illegal means to try to get what they want.

Ultimately, Los Angeles has to fundamentally change how real estate developments are approved and land-use decisions are made. That won't end corruption; there will always be some elected officials who abuse their power and some business people who think they can bribe their way to approval. But clear rules for officials and developers and transparent decision-making are obvious, necessary and overdue steps toward a cleaner City Hall.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 19

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN, JR., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

May 7, 2013

Councilmember Eric Garcetti
Council District 13
City of Los Angeles
200 N. Spring Street, Room 475
Los Angeles, CA 90012

RE: Millennium Hollywood Project
IGR/CEQA No. 130204AL-FEIR
Vicinity: LA-101, PM 7.37
SCH #2011041094

Dear Councilmember Garcetti:

We are writing this letter to reiterate Caltrans' concerns that the Environmental Impact Report (EIR), Final Environmental Impact Report (FEIR), and Traffic Study for this project did not fulfill the requirements of the California Environmental Quality Act (CEQA).

The Millennium Hollywood Project is a regionally significant project that will construct over 1 million square feet of mixed use development and is approximately one block from the US-101 freeway. With the existing condition of the freeway operating at Level of Service "F", this project will contribute significant traffic impacts to the US-101 freeway and its on/off ramps. The traffic study does not analyze nor does it disclose the traffic impacts that this project will contribute to the State Highway System.

After reviewing the Response to Comments from the City, Caltrans sent a letter, dated February 19, 2013, commenting on the FEIR (see attachment 3). We have not received a response from the City regarding our comments.

The Los Angeles Planning Commission approved the project on April 27, 2013. As a commenting agency, we would like to, once again, bring to the City's attention that the project impacts will likely result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. As mentioned in our previous letters, these concerns have not been adequately addressed in the EIR.

In summary, without the necessary traffic analysis, Caltrans cannot agree that the FEIR substantively identifies and mitigates the Project's impacts to the State highway facilities as required under CEQA.

13-0593

Caltrans staff will continue to be available to work in partnership with the City to identify adequate mitigation as a result of the traffic impacts from the Millennium Hollywood proposed project. If you have any questions, please feel free to contact me at (213) 897-9140 or Alan Lin, the project coordinator, at (213) 897-8391, and please refer to IGR/CEQA No. 130204AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse
City Council Members, City of Los Angeles
Michael LoGrande, Director City of Los Angeles Planning Department

Attachments (3)

Attachment #1

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN, JR., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

May 18, 2011

IGR/CEQA No. 110501AL-NOP
Millennium Hollywood Project
Vic. LA-101, PM 7.37
SCH # 2011041094

Ms. Srimal P. Hewawitharana
City of Los Angeles
200 N. Spring Street, Room 750
Los Angeles, CA 90012

Dear Ms. Hewwitharana:

Thank you for including the California Department of Transportation (Department) in the environmental review process for the above referenced project. The proposed project would include the construction of approximately 1,052,667 square feet of new developed floor area. The project would develop a mix of land uses including residential dwelling units, luxury hotel rooms, office and associated uses, restaurant space, health and fitness club uses, and retail establishments.

Because of the size and land uses of the project, this project may have a regional traffic impact on the State facilities. To assist in our efforts to evaluate the impacts of this project on State transportation facilities, a traffic study should be prepared prior to preparing the Draft Environmental Impact Report (DEIR). Please refer the project's traffic consultant to the Department's traffic study guide Website:

http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf

Listed below are some elements of what is generally expected in the traffic study:

1. Presentations of assumptions and methods used to develop trip generation, trip distribution, choice of travel mode, and assignments of trips to I-110, and all on/off ramps within 5 miles radius of the project site. The Department has concerns about queuing of vehicles using off-ramps that will back into the mainline through lanes. It is recommended that the City determine whether project-related plus cumulative traffic is expected to cause long queues on the on and off-ramps. We would like to meet with the traffic consultant to identify study locations on the State facilities before preparing the Environmental Impact Report (EIR).

2. Consistency of project travel modeling with other regional and local modeling forecasts and with travel data. The Department may use indices to verify the results and any differences or inconsistencies must be thoroughly explained.

3. Analysis of ADT, AM and PM peak-hour volumes for both the existing and future conditions in the affected area. Utilization of transit lines and vehicles, and of all facilities, should be realistically estimated. Future conditions should include build-out of all projects and any plan-horizon years. (see next item)

4. Inclusion of all appropriate traffic volumes. Analysis should include existing traffic, traffic generated by the project, cumulative traffic generated from all specific approved developments in the area, and traffic growth other than from the project and developments.

5. Discussion of mitigation measures appropriate to alleviate anticipated traffic impacts. These mitigation discussions should include, but not be limited to, the following:

    - Description of Transportation Infrastructure Improvements
    - Financial Costs, Funding Sources and Financing
    - Sequence and Scheduling Considerations
    - Implementation Responsibilities, Controls, and Monitoring

    Any mitigation involving transit or Transportation Demand Management (TDM) should be justified and the results conservatively estimated. Improvements involving dedication of land or physical construction may be favorably considered.

6. The Department may accept fair share contributions toward pre-established or future improvements on the State Highway System. Please use the following ratio when estimating project equitable share responsibility: additional traffic volume due to project implementation is divided by the total increase in the traffic volume (see Appendix "B" of the Guide).

    Please note that for purposes of determining project share of costs, the number of trips from the project on each traveling segment or element is estimated in the context of forecasted traffic volumes, which include build-out of all approved and not yet approved projects and other sources of growth. Analytical methods such as select-zone travel forecast modeling might be used.

    Please be reminded that as the responsible agency under CEQA, the Department has authority to determine the required freeway analysis for this project and is responsible for obtaining measures that will off-set project vehicle trip generation that worsens State Highway facilities. CEQA allows the Department to develop criteria for evaluating impacts on the facilities that it manages. In addition, the County CMP standards states that the Department should be consulted for the analysis of State facilities. State Routes mentioned in item #1 should be analyzed, preferably using methods suggested in the Department's Traffic Impact Study Guide. To help determine the appropriate scope, we request that a select zone model run is performed. We welcome the opportunity to provide consultation regarding the Department's preferred scope and methods of analysis.

We look forward to reviewing the traffic study and expect to receive a copy from the State Clearinghouse when the DEIR is completed. Should you wish to expedite the review process or receive early feedback from the Department please feel free to send a copy of the DEIR directly to our office.

As discussed in your telephone conversation on May 17, 2011 with Mr. Alan Lin, Project Coordinator, we would like to extend an invitation to meet with the City, developer, and the traffic consultant early in the process to discuss potential traffic impacts to the State facilities and possible mitigation measures prior to the preparation of the EIR.

If you have any questions, please feel free to contact me at (213) 897-9140 or Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 110501AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

Attachment # 2

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN, JR., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
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Flex your power!
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December 10, 2012

Ms. Srimal Hewawitharana
Department of City Planning
City of Los Angeles
200 N. spring Street, Room 750
Los Angeles, CA 90012

IGR/CEQA No. 121036AL-DEIR
Referenced to IGR/CEQA No. 110501AL-NOP
Millennium Hollywood Project
Vic. LA-101, PM 7.37
SCH #: 2011041094

Dear Ms. Hewawitharana:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The proposed project would include the construction of approximately 1 million square feet of developed floor area. The historic Capitol Records Building and the Gogerty Building would remain within the project site. The Project would demolish and/or remove the existing rental car facility. The project would develop a mix of land uses including 461 residential dwelling units, 254 luxury hotel rooms, 264,303 square feet of office space, 25,000 square feet of restaurant space, 80,000 square feet of health and fitness club space, and 100,000 square feet of retail space.

Below are Caltrans' major concerns with the Draft Environmental Impact Report (DEIR) for the Millennium Hollywood Project:

1. Caltrans submitted a comment letter dated May 18, 2011, on the Notice of Preparation (NOP) and met with the developer's consultant on September 15, 2011, to discuss Caltrans' concerns about the project's impact on the US-101 freeway and on/off ramps within the 5 miles radius of the project site. The traffic consultant acknowledged Caltrans' concerns and it was understood by both parties that the traffic procedures for analyzing impacts to the state highway system would follow standard statewide procedures outlined in Caltrans Traffic Study Guide. However, the June 2012 Traffic Impact Study (TIS), which is the basis for the traffic impact discussion in the DEIR, did not follow those procedures and does not analyze the impacts to the state highway system.

2. There was no analysis performed for any of the freeway elements. The TIS only used the Los Angeles County Congestion Management Program (CMP) criteria. However, the CMP fails to provide adequate information as to direct and cumulative impacts to the freeway mainline and ramps, per CEQA.

3. Currently, the Level of Service (LOS) for US-101 is operating at LOS F. Any additional trips will worsen the existing freeway condition. The TIS did not include a cumulative traffic analysis for US-101, which would consider the trips generated from the 58 related projects that are referred to in the DEIR, the proposed NBC Universal Project, and growth from the Hollywood Community Plan (Plan). Because the TIS prepared for the Plan in 2005 determined that build-out of the Plan would result in significant transportation impacts to the US-101, the Plan created a Transportation Improvement and Mitigation Plan (TIMP) to identify future improvements to the US-101. Since the proposed project site is located within the Plan area, the identified improvements should have been taken into consideration, as well as improvements listed in Metro's Long Range Transportation Plan.

4. Page IV.K.1-60 of the DEIR states: "The Project would result in a less than significant impact with respect to trip generation upon CMP locations and on freeway segments. No mitigation is required." This conclusion is not based on any credible analysis that could be found anywhere in the DEIR. It is Caltrans' opinion, based on the work that we have done in this area, that this project will result in significant impacts to the state highway system.

5. The submitted traffic analysis did not include the following ramp intersections that are closest to the project site, which may be significantly impacted by this development:

   - SB Route 101 on-ramp from Argyle Avenue
   - SB Route 101 off-ramp to Gower Avenue
   - NB Route 101 off-ramp to Gower Avenue
   - SB Route 101 off-ramp to Cahuenga Blvd.
   - SB Route 101 on-ramp from Cahuenga Blvd.
   - SB Route 101 off-ramp to Vine Street

   The traffic analysis at these off-ramps needs to show projected queue build-up upstream of the off-ramp. Although most of the on-ramps are meter controlled, the analysis needs to show how the added/over-flow volume to the on-ramp may affect other nearby intersections, including off-ramps. Caltrans is concerned that the freeway ramps will back up, creating a potentially unsafe condition. To ensure the ramps do not back up, the intersections adjacent to the ramps must be able to absorb the off-ramp volumes at the same time as they serve local circulation and land uses.

6. As shown in the DEIR, Table 5 Project Trip Generation, the project will generate a 19,486 average daily vehicle trips with 1,064/1,888 vehicle trips during the AM/PM peak hours. These volumes appear to be low and Caltrans requests that the lead agency verify

them. Also, the trip reduction credits taken are not in compliance with the Caltrans Traffic Impact Study Guide and any deviation should be properly justified and substantiated. For example, the 30% reduction of the retail pass-by trips is significantly high without justification. Utilizing such high reduction rates will result in inadequate identification of traffic impacts and mitigation, thus violating CEQA.

To address these concerns, an analysis for the project's impacts to the freeway system should be performed based on the proposed scope of the project as described in the DEIR and would need to include all of the following to determine the actual impact of this project on the State facilities in the project vicinity:

a. If the project will be developed in phases, the project added demand and trip assignment to US-101 should be based on each phase of the project, otherwise it should be based on 100% occupancy.

b. The Trip Generation figures and its distribution need to be forecasted based on a Select Zone Analysis. Based on the magnitude of the project and its close proximity to US-101, the trip assignment appears to be unreasonably low. Please elaborate on the trip assignment methodology utilized.

c. Trip Generation figures from other sources should be cross-referenced by the source, page number, year, and table numbers.

d. The off ramps on NB and SB US-101, between Vermont Avenue and Highland Avenue, which would represent the most impacted area by the proposed Development, should be analyzed utilizing the Highway Capacity Manual (HCM) 85th Percentile Queuing Analysis methodology with the actual signal timings at the ramps' termini.

e. Similarly, the on ramps on NB and SB US-101, within the same area, should be analyzed utilizing the same methodology and with the actual metering rates. These rates can be obtained by contacting Ms. Afsaneh Razavi, Senior Transportation Engineer, Caltrans Ramp Metering Department at (323) 259-1841.

f. An HCM weaving analysis needs to be performed for both the NB and the SB mainline segments, between the on and off ramps within the same area, utilizing balanced traffic demands entering and exiting the weaving segments.

Caltrans is concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. These concerns need to be adequately addressed in the EIR. In summary, without the necessary traffic analysis, Caltrans cannot recognize the TIS and DEIR as adequately identifying and mitigating the project's impacts to the State highway facilities.

If you have any questions, please feel free to contact Alan Lin the project coordinator at (213) 897-8391 and refer to IGR/CEQA No. 121036AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

Attachment #3

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN, JR., Governor

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
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Flex your power!
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February 19, 2013

Ms. Srimal Hewawitharana
Department of City Planning
City of Los Angeles
200 N. spring Street, Room 750
Los Angeles, CA 90012

IGR/CEQA No. 130204AL-FEIR
Referenced to
IGR/CEQA No. 110501AL-NOP
IGR/CEQA No. 121036AL-DEIR
Millennium Hollywood Project
Vic. I.A-101, PM 7.37
SCH #: 2011041094

Dear Ms. Hewawitharana:

Thank you for the opportunity to review the Final Environmental Impact Report (FEIR) for the Millennium Hollywood Project (Project). This letter serves to reiterate our concerns that the FEIR does not fulfill the requirements of the California Environmental Quality Act (CEQA).

We have the following comments after reviewing the FEIR:

1. CEQA requires the preparation of an EIR to identify a project's significant effects on the environment, identify alternatives to the project, and devise measures to mitigate or avoid those effects. (Pub. Resources Code §§ 21002.1, subd. (a) & 21061.) This Project is a project of statewide, regional, or areawide significance. (CEQA Guidelines § 15206, subd. (b).) When a project is of statewide, regional, or areawide significance, CEQA requires that the lead agency consult with responsible agencies, state agencies with jurisdiction over resources affected by the project, and public agencies with jurisdiction over a transportation facility. (Pub. Resources Code §21092.4, § 21153; CEQA Guidelines § 15086.) Caltrans notified the City of Los Angeles (City) that to properly assess the potential impacts to the State Highway System (SHS) from the Project, a proper traffic impact study (TIS) must be completed.

2. A valid TIS represents the linchpin in Caltrans' efforts to assess a project's potential impacts to the State transportation infrastructure. To assist the City in its preparation of a valid TIS, Caltrans informed the City that the TIS needs to comply with the "*Caltrans Guide for the Preparation of the Traffic Impact Studies*". Unfortunately, the City did not work with Caltrans and instead relied on its own Congestion Management Program (CMP), which **DOES NOT** adequately study the impacts to the SHS. Because the TIS did not adequately analyze the traffic impacts, the City therefore did not identify adequate mitigation. Caltrans is concerned that the Project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. The City's analysis incorrectly focuses its attention on impacts *to the CMP from the project*. CEQA does not call for an

evaluation of the impacts of a proposed project on an existing plan; it is concerned with the impacts from the project upon the environment, which is defined as the existing physical conditions in the affected area. The City did not study impacts to or identify adequate mitigation for the SHS.

3. Caltrans operates a multi-modal transportation system across the State, and is responsible for the planning, building and maintenance of that system. (Sts. & Hwy. Code § 90 et seq.) While the lead agency for a project has the authority to determine the initial significance of the project's impacts under CEQA, Caltrans has the ultimate authority under the Streets and Highways Code, as the owner and operator of the facilities, to make that determination on the SHS.

4. The intent of the CMP is to assist federal, state and local agencies in developing and implementing comprehensive planning strategies to handle traffic congestion. (Gov. Code, § 60588) Unfortunately, the CMP process does not adequately evaluate the impacts to the SHS, nor does it make the City the final authority over highway safety issues. As the owner and operator of the SHS facilities, Caltrans provides comments on environmental documents and the analysis of impacts to the SHS.

5. The purpose of allowing the public and other governmental agencies the opportunity to review EIRs includes: sharing expertise, disclosing agency analyses, checking for accuracy, detecting omissions, discovering public concerns, and soliciting counter proposals. (CEQA Guidelines, Section 15200.) The TIS did not provide Caltrans, or any other reader, with sufficient traffic analysis to properly review and assess the traffic assumptions, lead agency analysis, and conclusions regarding the Project and its impacts.

6. The CMP does not capture the same data for analysis that the Highway Capacity Manual (HCM) uses. For example, the CMP (1) fails to analyze off-ramps, (2) fails to analyze freeway impacts, including where existing LOS is F, if the Project trip assignments is less than 150 cars, (3) uses a flawed percentage ratio to determine the significance of impacts, and (4) incorrectly analyzes cumulative traffic impacts.

7. The CMP, Section D4 Study Area, indicates that "The geographic area examined in the TIA must include the following, ***at a minimum***" and "Caltrans must also be consulted through the Notice of Preparation (NOP) process to identify ***other specific locations*** to be analyzed on the state highway system." Caltrans identified potential study locations for the Project, but the City does not include an analysis of these locations in the FEIR.

8. CEQA requires mitigation for site-specific issues. However, the CMP does not include site-specific safety considerations, nor is it based on an appropriate measure of effectiveness for site-specific considerations. Therefore, analysis under the CMP alone does not comply with CEQA.

9. The FEIR fails to provide queuing analysis on the off-ramp where the freeway ramps will back up, creating a potential unsafe condition. As Caltrans has already informed the City, the off-ramps which would represent the most impacted area from the Project should be analyzed utilizing the HCM 85th percentile queuing analysis methodology with the actual signal timings at the ramps termini. The City did not do this analysis in the FEIR, nor does the CMP address this issue.

10. The CMP improperly uses a percentage criterion for determining the significance of traffic impacts. The use of a "ratio theory" or "comparative approach," such as the CMP's "2% increase in trips" criterion, improperly measures a proposed project's incremental impact relative to the existing cumulative effect rather than measuring the combined effects of both the project and other relevant past, present, and future projects.

11. A lead agency that intends to approve developments with unmitigated significant traffic impacts must make Findings that no measures are feasible to mitigate those impacts, and must issue a Statement of Overriding Considerations, which indicates that allowing this project to proceed would be in the best interest of the general public.

12. Caltrans' Concerns with the City's Response to Comments in the FEIR:

    a) **Concerns regarding Response to Comment Nos. 03-2 and 03-5**
    The Traffic Impact Study Guide (TISG) states that "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on the State highway facilities. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS." The City failed to consult with Caltrans to determine the appropriate target LOS for this project.

    What's more, the State Highway facility can absorb additional traffic without degradation, if it is operating at a higher level of service where there are uncongested operations, higher travel speeds and freedom of movement. However, the greater the congestion, the lower the threshold of traffic needed to create an impact. The TISG describes the trip generation changes that would trigger the need to consult with Caltrans or that are likely to indicate a probable significant effect. At certain locations, even less than 50 peak hour trips may have a significant impact on operations and the LOS. Impacts are most often considered significant by Caltrans if they might create an unsafe condition by increasing or relocating traffic demand, thereby increasing the risk of turn movement conflicts on the SHS. The other major concern is when the integrity of the SHS would be at risk from physically undermining or destroying the structures. Traffic that exceeds an operational or capacity threshold will have a different level of significance depending on whether the analysis looks at mainline or access locations.

    b) **Concerns regarding Response to Comment Nos. 03-3, 03-4 and 03-5**
    The Transportation Modeling Procedures and Results (Appendix B of FEIR) demonstrates that the Project adds traffic to the freeway. Cumulatively, the 58 related projects that are referred to in the DEIR, the proposed NBC Universal Project and the Hollywood Community Plan, also add traffic to the freeway and should have been included in the model. Route 101 already operates at LOS F in the vicinity of the Project. Regardless of programs that include upgrades to the transit system or TDM to improve traffic conditions, the net effect of any additional trips likely will worsen the existing freeway condition. Adopting an arbitrary value of 150 or more trips to constitute a significant impact is not a realistic approach and does not capture the impacts to the SHS. Any additional traffic to the mainline, particularly where the LOS is operating at "F" or worst, needs to be mitigated in compliance with CEQA.

Page 1 of the Transportation Modeling Procedures and Results states, "the Hollywood Community Plan Update was also determined not to have a significant impact on the freeway system." This statement is false; according to the DEIR (SCH No. 20020410009) for the Hollywood Community Plan Update (Page 4.5-30), the proposed plan compared to the 2005 conditions would result in an unavoidable significant adverse transportation impact and the Plan offers transportation improvements to mitigate the traffic impacts. The Hollywood Community Plan TIMP includes LRTP Highway/Freeway Improvements (page 48), LRTP Arterial Street Improvements (page 49), and Capital Improvements (page 66). All of those improvements include freeway mainline and on/off ramp improvements in the project vicinity.

Caltrans will consider any and all improvements that would benefit the SHS, including the ATSAC/Adaptive Traffic Control System Highway and Street Traffic Signal Management System. Instead, Caltrans was and still is unable to assess the benefits of such a program because there is no traffic study in the EIR that includes the necessary analysis.

c) **Concerns regarding Response to Comment Nos. 03-6, 03-11, and 03-14**

The listed ramp intersections *are* "those at which the Project traffic impacts have the potential to be significant and substantial." The study locations should include all freeway elements, including freeway mainline, weaving sections, meters, ramps, and ramp junctions, in the study area. The traffic impact analysis methodologies are spelled out in the Caltrans guidelines and are used throughout the State when State Highway facilities are involved. For off-ramps and ramp junctions, Caltrans uses the HCM for analysis. The FEIR is flawed because the City relies upon the Critical Movement Analysis (CMA), which does not address off-ramp queuing that can lead to operational and safety issues.

Without a queuing analysis at the intersections of US-101 off-ramp (see Caltrans letter dated December 10, 2012, Item #5 and #6d), neither Caltrans nor the City can determine whether the traffic from the off-ramps will back up to the mainline, thus creating an unsafe condition to the public. Therefore, the FEIR fails to provide and analyze the impacts upon the SHS from queuing. Again, please provide the traffic analysis at the specified locations, per our Comment Nos. 03-6 and 03-11, as there may be significant impacts from the Project.

d) **Concerns regarding Response to Comment No. 03-7**

Caltrans concurs with Comment No. 59-27 (Jordon, David). The internal capture rates in Table IV.K.1-4 lack support. LADOT relies on ITE studies from Florida from the early 1990s and these studies are outdated. Instead, the Texas A & M University, Texas Transportation Institute for the Federal Highway Administration collected updated data at Legacy Town Center in February 2010. Please submit this data and the corresponding analysis for this Project to Caltrans for our review.

e) **Concerns regarding Response to Comment No.03-9**

Limitations exist regardless of the type of analysis used, but Caltrans prefers the Select Zone Analysis. If the City instead utilizes a manual approach, the analysis should include

an appropriate study area that addresses impacts to State Highway facilities. Consultation with Caltrans is a critical step in the scoping process and all stakeholders should be included in the environmental review; unilateral review and approval by LADOT is not sufficient.

The traffic model analysis (FEIR Appendix B) provides alternative values for the traffic on US-101 which select locations that are too closed to the project resulting in an incomplete model analysis for the project trips distribution on the US-101 where only small amount of trip is assigned to US-101.

f) **Concerns regarding Response to Comment No. 03-13**
The City must conduct an HCM weaving analysis for both the northbound and southbound mainline segments, between the on- and off-ramps within the project vicinity utilizing balanced traffic demands entering and exiting the weaving segments. This would show whether the traffic flow will operate safely.

As stated above, Caltrans is concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. These concerns need to be, and have not been, adequately addressed in the EIR. In summary, without the necessary traffic analysis, Caltrans cannot agree that the FEIR substantively identifies and mitigates the Project's impacts to the State highway facilities as required under CEQA.

We have been and will continue to be available to work in partnership with the City to identify adequate mitigation as a result of the traffic impacts from the Millennium Hollywood proposed project. If you have any questions, please feel free to contact me at (213) 897-9140 or Alan Lin, the project coordinator, at (213) 897-8391, and please refer to IGR/CEQA No. 130204AL.

Sincerely,

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse
Jon Foreman, City of Los Angeles

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 20

INFORMATION BULLETIN / PUBLIC - BUILDING CODE
REFERENCE NO.: L.A. Zoning Code 12.03 Effective: 5-17-79
DOCUMENT NO. P/BC 2002-021 Revised: 11-1-02
Previously Issued As: MGD 107

CALCULATING FLOOR AREA

A. Purpose:

To provide guidelines for the calculation of floor area as applied throughout the Zoning Code and, in particular, to clarify permissible assumptions which may be applied to floor area calculations used for parking requirements.

To illustrate the distinction between the enforcement of the Building Code and the Zoning Code in the application of floor area.

B. Code:

Sec. 12.03 of the Zoning Code defines floor area:

Is that area in square feet confined within the exterior walls of a building, but not including the area of the following: exterior walls, stairways, shafts, rooms housing building-operating equipment or machinery, parking areas with associated driveways and ramps, space for the landing and storage of helicopters, and basement storage areas.

Sec. 12.21.1-A, 5 provides:

In computing the total floor area within a building, the gross area confined within the exterior walls within a building shall be considered as the floor area of that floor of the building, except for the space devoted to stairways, elevator shafts, light courts, rooms housing mechanical equipment incidental to the operation of buildings, and outdoor eating areas of ground floor restaurants.

C. Determination:

When applying Sec. 12.03 for parking considerations, the area of rooms containing equipment or machinery incidental to and integral with the operation of the building shall be excluded from the floor area. Further, the area of rooms (or perhaps entire buildings) containing equipment or machinery, the purpose of which is independent of or unrelated to the building in which it is located, shall be excluded from the floor area. Examples include, but are not limited to utility pumping or distribution stations, rooms with cellular telephone switching equipment, mechanical equipment used in manufacturing processes without human intervention, etc.

When applying Sec. 12.21.1-A, 5 for floor area ratio, the area of rooms containing equipment or machinery incidental to and integral with the operation of the building shall be excluded from the floor area. However, the area of rooms (or perhaps entire buildings) containing equipment or machinery,

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will allow flexibility and timely distribution of information to the public.

the purpose of which is independent of or unrelated to the building in which it is located, shall be included as floor area.

When applying either Sec. 12.03 or 12.21.1 A 5, architectural projections not intended for regular use or occupancy shall not be counted as floor area. Areas under projections intended for use and occupancy shall be included as floor area in accordance with the guidelines below. For all Building Code applications, the area under architectural projections exceeding 5 feet (1524 mm) in width, as defined in Sec. 91.3204.1, shall be included in the floor area calculation.

D. Guidelines:

a. The following guidelines shall apply when calculating floor area for parking considerations under the Zoning Code definition:

1. For buildings physically enclosed with exterior walls, the area under architectural projections (of any dimension) not intended for regular use or occupancy shall not be counted as floor area. Areas under projections intended for use and occupancy shall be included as floor area. The plan check supervisor shall have the discretion of requiring the recordation of a Covenant and Agreement Regarding Maintenance of Building identifying areas under projections and specifying they are not to be used for any occupancy.

2. For structures with a roof not physically enclosed by exterior walls, the entire area under the roof shall be considered floor area unless satisfying (3) below.

3. The floor area of rooms within buildings housing mechanical equipment or machinery or the floor area of entire buildings housing mechanical equipment or machinery shall not be counted. The equipment or machinery need not be associated with the operation of the building in which it is contained, but must be permanently affixed and arranged in a fashion not otherwise allowing human occupancy. Those areas designed within such buildings to allow reasonable access to the equipment for its regular maintenance shall likewise not be counted as floor area.

b. The following guidelines shall apply when calculating floor area under the Building Code definition:

Architectural projection shall mean any projection not intended for shelter or occupancy and which extends beyond the outer face of an exterior wall of a building, but shall not include signs.

Area under architectural projections exceeding 5 feet (1524 mm) in width shall be included in the floor area calculation. Exterior walls shall be considered to exist at the outer edges of such projections for the purpose of enforcing exterior wall construction and opening protection due to building location on the property.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will allow flexibility and timely distribution of information to the public.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 21

SPECIAL INSTRUCTIONS FOR ALCOHOL (CUB) & ADULT ENTERTAINMENT ESTABLISHMENTS (CUX) – LAMC 12.24 W.1 & 12.24 W.18

City of Los Angeles – Department of City Planning

The Special Instructions for Alcohol (CUB) & Adult Entertainment Establishments is a required attachment to the *MASTER LAND USE APPLICATION INSTRUCTIONS* (CP-7810). Only utilize this form when filing for a conditional use permit pursuant to LAMC Section 12.24 W.1 for alcohol establishments or pursuant to 12.24 W.18 for adult entertainment establishments.

ADDITIONAL REQUIREMENTS/FINDINGS FOR APPROVAL OF A CUB or CUX:

For a CUB or CUX request to be considered, the following additional information and findings must be provided.

1. **RADIUS MAP REQUIREMENTS.** In addition to the Public Noticing requirements detailed in the Master Land Use Application Instructions (CP-7810):

   - Radius Maps for alcohol uses must show land use to a 600-foot radius.
   - A **LIST OF ALCOHOL ESTABLISHMENTS** between 600 and 1,000 feet of the site is required. Include in the list the type of license and address.
   - A **LIST OF THE FOLLOWING USES** within 600 feet is also required:

     (1) residential uses and type (single-family, apartment, hotel, etc.);
     (2) churches;
     (3) schools, including nursery schools and child-care facilities;
     (4) hospitals;
     (5) parks, public playgrounds and recreational areas; and
     (6) establishments dispensing, for consideration, alcoholic beverages for consumption on or off premises.

2. **FINDINGS *(on a separate sheet)***

   a. **General Conditional Use**

      i. That the project will enhance the built environment in the surrounding neighborhood or will perform a function or provide a service that is essential or beneficial to the community, city, or region.

      ii. That the project's location, size, height, operations and other significant features will be compatible with and will not adversely affect or further degrade adjacent properties, the surrounding neighborhood, or the public health, welfare, and safety.

      iii. That the project substantially conforms with the purpose, intent and provisions of the General Plan, the applicable community plan, and any applicable specific plan.

   b. **Additional Findings**

      i. Explain how the proposed use will not adversely affect the welfare of the pertinent community.

      ii. Explain how the approval of the application will not result in or contribute to an undue concentration of such establishments.

      iii. Explain how the approval of the application will not detrimentally affect nearby residential zones or uses.

3. **QUESTIONS REGARDING THE PHYSICAL DEVELOPMENT OF THE SITE**

a. What is the total square footage of the building or center the establishment is located in? _____

b. What is the total square footage of the space the establishment will occupy? _____

c. What is the total occupancy load of the space as determined by the Fire Department? _____

d. What is the total number of seats that will be provided indoors? _____ Outdoors? _____

e. If there is an outdoor area, will there be an option to consume alcohol outdoors? _____

f. If there is an outdoor area, is it on private property or the public right-of-way, or both? _____

i. If an outdoor area is on the public right-of-way, has a revocable permit been obtained? _____

g. Are you adding floor area? _____ If yes, how much is enclosed? _____ Outdoors? _____

h. Parking

i. How many parking spaces are available on the site? _____

ii. Are they shared or designated for the subject use? _____

iii. If you are adding floor area, what is the parking requirement as determined by the Department of Building & Safety? _____

iv. Have any arrangements been made to provide parking off-site? _____

1. If yes, is the parking secured via a private lease or a covenant/affidavit approved by the Department of Building & Safety? _____

Note: *Required parking must be secured via a covenant pursuant to LAMC 12.26 E 5. A private lease is only permitted by a Zone Variance.*

2. Please provide a map showing the location of the off-site parking and the distance, in feet, for pedestrian travel between the parking area the use it is to serve.

3. Will valet service be available? _____ Will the service be for a charge? _____

i. Is the site within 1,000 feet of any schools (public, private or nursery schools), churches or parks? _____

j. For massage parlors and sexual encounter establishments, is the site within 1,000 feet of any other Adult Entertainment Businesses as defined by LAMC 12.70 B17? _____

4. **QUESTIONS REGARDING THE OPERATION OF THE ESTABLISHMENT**

a. What are the proposed hours of operation and which days of the week will the establishment be open?

	M	Tu	W	Th	F	Sa	Su
Proposed Hours of Operation							
Proposed Hours of Alcohol Sale							

b. Will there be entertainment such as a piano bar, dancing, live entertainment, movies, karaoke, video game machines, etc...? Please specify: _____

Note: *An establishment that allows for dancing needs a conditional use pursuant to 12.24 W.18.*

c. Will there be minimum age requirements for entry? _____ If yes, what is the minimum age requirement and how will it be enforced? _____

d. Will there be any accessory retail uses on the site? _____ What will be sold? _____

e. **Security**

i. How many employees will you have on the site at any given time? _____

ii. Will security guards be provided on-site? _____

1. If yes, how many and when?_____

iii. Has LAPD issued any citations or violations? _____ If yes, please provide copies.

f. **Alcohol**

i. Will there be beer & wine only, or a full-line of alcoholic beverages available? _____

ii. Will "fortified" wine (greater than 16% alcohol) be sold? _____

iii. Will alcohol be consumed on any adjacent property under the control of the applicant? _____

iv. Will there be signs visible from the exterior that advertise the availability of alcohol? _____

v. **Food**

1. Will there be a kitchen on the site? _____

2. Will alcohol be sold without a food order? _____

3. Will the sale of alcohol exceed the sale of food items on a quarterly basis? _____

4. Provide a copy of the menu if food is to be served.

vi. **On-Site**

1. Will a bar or cocktail lounge be maintained incidental to a restaurant? _____

a. If yes, the floor plans must show the details of the cocktail lounge and the separation between the dining and lounge facilities.

2. Will off-site sales of alcohol be provided accessory to on-site sales ("Take Out")? _____

a. If yes, a request for off-site sales of alcohol is required as well.

3. Will discounted alcoholic drinks ("Happy Hour") be offered at any time? _____

vii. **Off-Site**

1. Will cups, glasses or other containers be sold which might be used for the consumption of alcohol on the premises? _____

2. Will beer or wine coolers be sold in single cans, or will wine be sold in containers less than 1 liter (750 ml)? _____

viii. Contact the CA Department of Alcoholic Beverage Control (ABC) regarding its requirements -- http://www.abc.ca.gov/.

5. **CALDERA BILL *(CA Business and Professions Code Section 23958 and 23958.4)***

a. Is this application a request for on-site or off-site sales of alcoholic beverages? _____

i. If yes, is the establishment a bona-fide eating place (restaurant) or hotel/motel? _____

1. If no, contact the CA Department of Alcoholic Beverage Control (ABC) to determine whether the proposed site is located in an area whereby:

a. issuance of a license to serve alcohol on-site or off-site would tend to create a law enforcement problem, or

b. if issuance would result in, or add to an undue concentration of licenses.

b. If ABC has determined that an eligible use is in an area of high crime or undue concentration of licenses, the City Council will need to make the finding that the issuance of the license is required for **public convenience** or **necessity**.

6. **ADDITIONAL REQUIREMENTS FOR MASTER CUBs/CUXs.** In addition to all requirements detailed in the Master Land Use Application Instructions (CP-7810), applications for Master CUBs/CUXs shall include:

- A separate sheet containing a table identifying all CUB or CUX requests on the subject site, indicating: the type of alcohol permit sought; the square footage of each particular restaurant, bar or event space; the identifying address or suite/unit number corresponding to each CUB/CUX request; and (if known) the tenant-operator of each alcohol or adult entertainment establishment.

- All CUB or CUX requests on the subject site clearly identified and labeled on the plot plan and applicable floor plans, indicating: each type of alcohol permit sought; the square footage of each particular restaurant, bar or event space; and the identifying address or suite/unit number corresponding to each CUB/CUX request.

NOTE: *Please consider submitting documents beyond the requirements outlined in this form. If there are other circumstances which may further a more complete understanding of the project, do not hesitate to submit such information. The documents submitted with the application and the public hearing constitute the **primary opportunity** to clarify and define the project.*

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 22

CITY OF LOS ANGELES
CALIFORNIA

HUBER E. SMUTZ
CHIEF ZONING ADMINISTRATOR

ASSOCIATE ZONING ADMINISTRATORS
JACK BAUER
CHARLES V. CADWALLADER
ARTHUR DVORIN

SAMUEL WM. YORTY
MAYOR

DEPARTMENT OF
CITY PLANNING

OFFICE OF
ZONING ADMINISTRATION

361 CITY HALL
LOS ANGELES 12
MADISON 4-5211

August 18, 1961

Department of Building and Safety
Room 2[illegible], City Hall

Walter C. Peterson
City Clerk
Room 395, City Hall

Re: Z. A. I. CASE NO. 1808
Dining Terraces or Outdoor Patios for Serving and Consuming Food and Refreshments in connection with Restaurants, Cafes, etc. C2 and Less Restrictive Zones

Greetings:

In the matter of the verbal request made by officials of the Department of Building and Safety and by several interested restaurant operators for an interpretation of the zoning regulations as they apply to the provision of dining terraces or outdoor eating patios in connection with restaurants, cafes, and other eating and refreshment establishments located in the C2 Zone, please be advised that the Chief Zoning Administrator has made the following interpretation and ruling that in the C2 or less restrictive zones it would be permissible to have dining terraces or outdoor eating patios for the serving and consuming of food and refreshment in connection with various eating and refreshment establishments, provided all other activities including any entertainment and dancing, other than incidental storage, are conducted wholly within a completely enclosed building.

INTERPRETATION AND RULING

There is some ambiguity, contradiction, and conflict between some of the provisions of the Comprehensive Zoning Ordinance as they concern activities of a restaurant, cafe, or other eating establishment when located in the C2 Zone, particularly as to the extent which food and refreshment may be served outside of buildings. No such conflict exists with respect to such establishments when located in the more restrictive C1 Zone since the limitations which apply to all commercial uses in said zone very clearly provide that "all activities are conducted wholly within an enclosed building.". The C2 Zone, however, is somewhat ambiguous and open to interpretation on this particular point. Said C2 Zone in addition to permitting all C1 Zone uses subject to the limitation

TRANSMITTAL NO. 2

that "all activities other than incidental storage shall be conducted wholly within a completely enclosed building" also provides in paragraph 14 of Section 12.14-A that there may be drive-in businesses which among other things includes refreshment stands, restaurants, and the like. In any such drive-in restaurant or refreshment stand persons are served food and refreshment while sitting in their automobiles. It is common practice in connection with many restaurants, eating establishments, and refreshment stands, particularly during the summer months in our salubrious climate, to provide tables either on dining terraces, outdoors, or under shade-covered patios where persons may be served their food and drink. Such activity would be little different than the serving of food and refreshment to persons seated in their cars in a drive-in restaurant facility and would be no more objectionable to the public welfare than some of the other open type of uses permitted in the C2 Zone, provided any entertainment and dancing is conducted wholly within a completely enclosed portion of the building. Other provisions of the C2 Zone clearly indicate the intent that all dancing and entertainment type of facilities other than the modern drive-in motion picture theater, be conducted within completely enclosed buildings. It is apparent that in most instances the conduct of open-air entertainment or dancing in connection with restaurant and cafe facilities would be a source of annoyance to occupants of adjacent premises, particularly residential and hotel developments.

Therefore, by virtue of authority contained in Section 12.21-A, 2 of the Municipal Code, it is hereby determined that restaurants, cafes, eating establishments, or refreshment stands with incidental dining terraces or outdoor eating patios for serving and consuming of food and refreshments would be similar to and no more objectionable than other uses permitted in the C2 Zone, provided all other activities including any entertainment and dancing, other than incidental storage, are conducted wholly within a completely enclosed building. Furthermore, the List of Uses Permitted in Various Zones adopted under Z. A. I. Case No. 1350 is amended by inserting in its proper alphabetical order among the uses permitted in the C2 Zone, the following:

> "Restaurant, Cafe, Eating Establishment or Refreshment Facility with incidental dining terrace or outdoor eating patio with tables for serving and consuming food or refreshments, provided all other activities including any entertainment and dancing, other than incidental storage, are conducted wholly within a completely enclosed building."

Very truly yours,

HUBERT E. SHULZ
Chief Zoning Administrator

HES:at

cc: Associate Zoning Administrators
Branch Offices, Planning
William Dove - c/o Tahitian Restaurant
12010 Ventura Boulevard, Studio City

TRANSMITTAL NO. 2

Section 12.03 Outdoor Dining and Eating Areas – Definition.

In order to promote an attractive pedestrian environment by encouraging the design of building which accommodate modest commercial activity fronting a major street, the City has twice introduced incentives that could benefit and encourage outdoor eating. They are "Outdoor Dinning" adopted in 1961 with ZAI 1808 (Zoning Administrator Interpretation) or "Outdoor Eating Area" adopted in 1990 in the Zoning Code under Ordinance 165,403. Either one of the incentives can be used if their conditions are complied with.

Under ZAI 1808, "OUTDOOR DINING" is permitted in the C2 zone or less restrictive zones such as C2, C5, CM, MR1, M1, MR2, M2, M3 and PF (Not permitted by rights in CR, C1, C1.5 or C4 zone)….. *"Therefore, it is hereby determined that restaurants, cafes, eating establishments, or refreshment stands with incidental dinning terraces or outdoor eating patios for serving and consuming of food and refreshments would be similar to and no more objectionable than other uses permitted in the C2 zone, provided all other activities including any entertainment and dancing, incidental storage are conducted wholly within a completely enclosed building".*

Under the Zoning Code, OUTDOOR EATING AREA is permitted in the CR zone and defines as "*When used in Sections 12.12.2, 12.13, 12.14, 12.21.1 and 12.24, this term shall refer to a covered or uncovered portion of a ground floor restaurant which is not completely enclosed within the building; is used primarily for the consumption of food and/or drinks by the patrons of the restaurant; and is not larger than 50 percent of the dining area of the ground floor restaurant. A "ground floor" restaurant refers to any restaurant with an average finished floor elevation either below or not more than three feet above natural grade as measured from any point along the exterior building wall closest to the restaurant."* ***(Amended by Ord. No. 165,403, Eff. 2/17/90.)"*** When one side of the outdoor eating area facing the front street can be opened, it could be defined as "not completely enclosed".

OUTDOOR EATING AREAS are also permitted in the RAS3 and RAS4 zones under LAMC Section 12.10.5.B.2 and LAMC Section 12.11.5.B.2 respectively. The sections state the following limitations, "*all activities are conducted wholly within an enclosed building, except that restaurants may have outdoor eating areas*". Ordinance 174,999 added the RAS3 and RAS4 zones on January 15, 2003 after the last amendment to the *Outdoor Eating Area* definition on February 17, 1990.

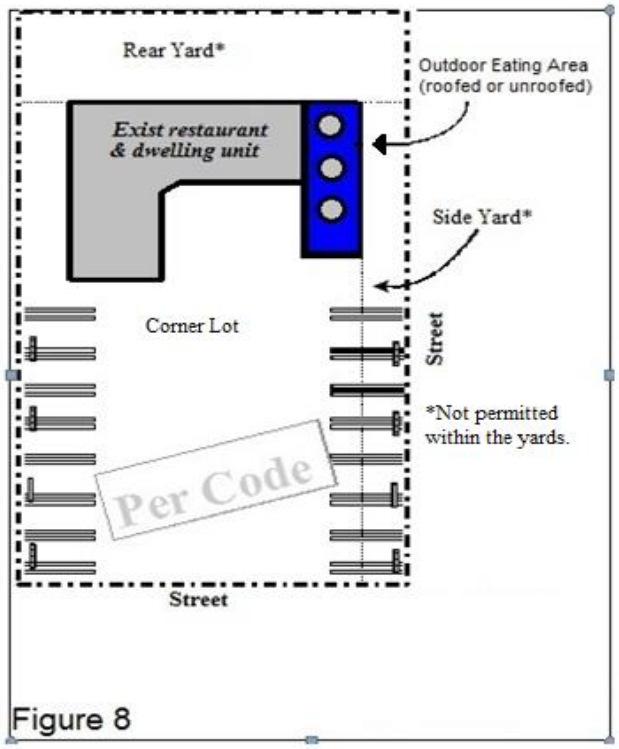

Figure 8

Q_1 - Under what conditions and in what zones are Outdoor Dining areas / Outdoor Eating Areas permitted in conjunction with restaurants?

A_1 -

1. By authority of ZAI 1808, Outdoor Dining is permitted in the C2, CM and all the M* zones. The Outdoor Dining shall be located outside of any required yards. It can be either roofed or unroofed at any levels above the ground floor incidental to

an eating establishment. However, for a roofed outdoor dining, it shall be considered as new additional floor area; therefore, all Zoning code requirements shall be verified including the FAR and additional parking. Likewise, for an unroofed Outdoor Dining, it has no limitation regarding the area of the open use and has no parking requirements because it is not considered as "floor area" per Zoning code's definition.

*In the MR Zones, restaurants are permitted only when incidental to the industrial use on the lot.

2. "Outdoor Eating Areas" as defined in Sec. 12.03 and in conformity with the limitations specified therein and summarized above are first permitted in the CR zone. As first specified in Section 12.12.2A4.13, "Outdoor Eating Areas" may be located 1) "*between the building and its required front yard; 2) between the building and its required side or rear yard which side or rear yard abuts a public street"*. They can be either roofed or unroofed without providing additional parking. Also, read restriction on Operational Hours for Outdoor Eating Areas in the CR, C1 or C1.5 zone.

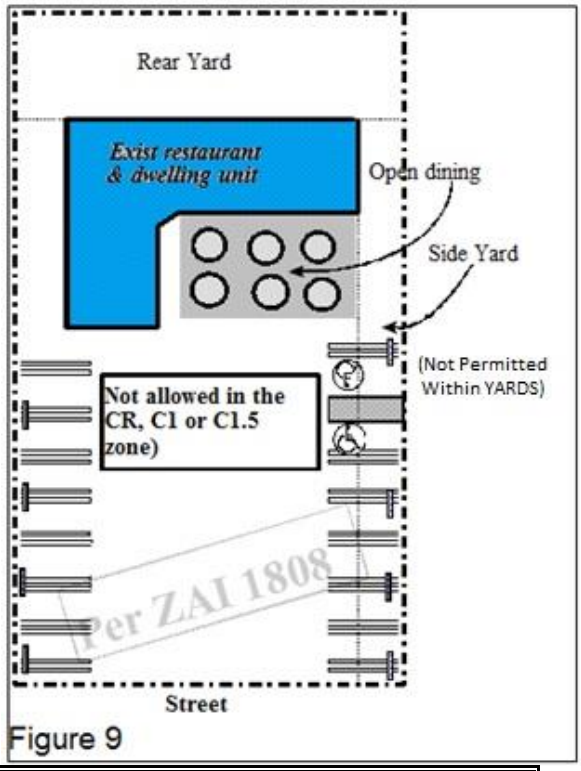

Figure 9

Q_2 - Which provision takes precedence; that contained in the Code or that in the ZAI?

A_2- These provisions overlap in some cases but do not supersede one another. For CR, C1, C1.5 or C4 zones, only "Outdoor Eating Areas" are permitted and not "Outdoor Dinning". For C2 and less restrictive zones, either Outdoor Dinning or Outdoor Eating is permitted and it can be either roofed or unroofed. However, for Outdoor Dining, the roofed areas shall be considered as new floor areas for the site; unlike an Outdoor Eating Areas, their floor areas are exempted from Zoning's FAR and Parking.

A summary matrix:

Permitted	O.K. in zones	Permitted in Yards	Roofed/ Unroofed	Max. area	Floor Area [1]	Other limitations
Per Code	RAS3, RAS4, CR, C1, C1.5,C2, C4,CM & M	Not permitted.	Roofed/ Unroofed	50% of interior dining area	Exempted	At Ground level only
Per ZAI 1808 (incidental to an Eating Establishments)	C2, C5, CM, MR1, M1, MR2, M2, M3	Not permitted.	Unroofed	No floor area	Exempted	At all levels
	C2, C5, CM, MR1, M1, MR2, M2, M3	Not permitted.	With Roof	Verify code's requirement for max area such as FAR.	New Floor Area (additional parking)	At all levels

[1] If exempt from floor area, then no parking is required. (Z. E. memo 12-13-95 and 10-17-01)

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 23

LINN K. WYATT
CHIEF ZONING ADMINISTRATOR

ASSOCIATE ZONING ADMINISTRATORS
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THEODORE L. IRVING
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(213) 978-1318
FAX: (213) 978-1334
www.planning.lacity.org

July 8, 2015

Department of City Planning
Office of Zoning Administration
Department of Building and Safety
All Interested Parties

CASE NO. ZA 2015-2348(ZAI)
ZONING ADMINISTRATOR'S
INTERPRETATION

Lists of Uses Permitted in Various Zones

CITYWIDE

Section 12.21-A,2 of the LAMC provides in pertinent part as follows:

> 2. Other Uses Determined by Administrator – The Administrator shall have the authority to determine other uses, in addition to those specifically listed in this Article, which may be permitted in each of the various zones, when in his judgment, such other uses are similar to and no more objectionable to the public welfare than those listed. The Zoning Administrator shall also have the authority to interpret zoning regulations when the meaning of the regulation is not clear, either in general or as it applies to a specific property or situation.

BACKGROUND

Pursuant to authority contained in Section 12.21-A,2 of the Los Angeles Municipal Code, the Zoning Administrator has amended the Lists of Uses Permitted in Various Zones, last updated in 2003, to include new land uses determined to be similar to those specifically mentioned in the Comprehensive Zoning Plan. List No. 1 presents uses organized by zone category, while List No. 2 presents uses alphabetically. Where previous lists only included uses permitted by-right, the updated List No. 1 and List No. 2 incorporate uses permitted by conditional use permit (identified by red text) and uses permitted as a public benefit (identified by green text). All uses listed are subject to the more detailed regulations provided in the Los Angeles Municipal Code.

These lists supersede the 2003 lists adopted pursuant to ZA 2003-4842(ZAI) and are the official use lists to be utilized by the Department of City Planning, Office of Zoning Administration and the Department of Building and Safety.

APPEAL PERIOD – EFFECTIVE DATE

The Zoning Administrator's determination in this matter will become effective after JULY 23, 2015, unless an appeal therefrom is filed with the City Planning Department. It is strongly advised that appeals be filed early during the appeal period and in person so that imperfections/incompleteness may be corrected before the appeal period expires. Any appeal must be filed on the prescribed forms, accompanied by the required fee, a copy of the Zoning Administrator's action, and received and receipted at a public office of the Department of City Planning on or before the above date or the appeal will not be accepted. **Forms are available on-line at http://planning.lacity.org**. Public offices are located at:

Figueroa Plaza
201 North Figueroa Street,
4th Floor
Los Angeles, CA 90012
(213) 482-7077

Marvin Braude San Fernando
Valley Constituent Service Center
6262 Van Nuys Boulevard, Room 251
Van Nuys, CA 91401
(818) 374-5050

If you seek judicial review of any decision of the City pursuant to California Code of Civil Procedure Section 1094.5, the petition for writ of mandate pursuant to that section must be filed no later than the 90th day following the date on which the City's decision became final pursuant to California Code of Civil Procedure Section 1094.6. There may be other time limits which also affect your ability to seek judicial review.

LINN K. WYATT
Chief Zoning Administrator

LKW:TR:lmc

Attachments

List No. 1 - Executive Summary – 2015 Update for Use List
List No. 2 - Uses Permitted in Various Zones in the City of Los Angeles

EXECUTIVE SUMMARY
2015 Update to the Use List

ADDITIONS:

AMBULANCE SERVICE:
Require good response times throughout the community, so suggest same zones as a Fire Station. Accordingly, permitted in: C2, C4, C5, CM, M1, M2, M3.

ASSISTED LIVING CARE HOUSING:
'List No. 1' of the Use List identified Assisted Living Care Housing as a by-right use in the CR zone, which is inaccurate per Section 12.12.2 A. This entry has been deleted to reflect the Zoning Code correctly.

AUTOMOBILE WINDOW TINTING:
Tinting is usually applied as a film, rather than as a spray. This manual application is in line with either 'Automotive Upholstering' or 'Automotive Painting,' both of which are permitted in C2, C5, CM, M1, M2, M3.

BABY GYM:
Since parents attend classes with their children, baby gyms are the same as a 'Health Club.' From Section 12.21 A. 4. (c). (2), "There shall be at least one automobile parking space for each 100 square feet of floor area in the building being utilized for a health club, athletic club, bath house, gymnasium, dance studio, dance hall, or any similar establishment, which operates as a private facility or offers the use of the premises and equipment to the general public for physical exercise, dance or sports activities." Baby gyms match this definition.

BANQUET HALL:
Per Zoning Commentary from September 27, 2005, banquet halls are to be treated the same as private clubs. 'Clubs, private, nonprofit' are permitted in RAS3, RAS4, R5, all C Zones, M1, M2, and M3; furthermore, private clubs are permitted by CUP in A1, A2, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, and R4, in accordance with Section 12.24 W. 35.

BOAT REPAIR, small:
Suggest same zones as 'Automotive Repair,' meaning: C2, C5, CM, M1, M2, M3.

CATERING, accessory to Restaurant:
Same zones as 'Restaurant.' RAS3, RAS4, CR and above, M1, M2, M3.

CHARTER SCHOOL:
Same zones as 'School, public, elementary or high.' Suggest definition to include 'middle' for both uses.

CLOTHES CLEANING ESTABLISHMENT:
This use is permitted in the RAS3, RAS4, C1, C1.5, C2, C5, CM, M1, M2, and M3 zones; however, 'List No. 1' only mentions this use under the residential zones. The Use List has been updated to also reflect the commercial and manufacturing zones where clothes cleaning establishments are allowed by-right.

COIN SHOP and CONFECTIONARY STORE:
'List No. 1' of the Use List only reflects 'Coin Shop' and 'Confectionary Store' as permitted in the C4 zone, but it has been updated to account for the fact that it is also allowed in the C1.5, C2, C5, CM, M1, M2, and M3 zones.

COMMUNITY GARDEN:
Suggest they be permitted in the same zones as 'Park or Playground, operated by governmental agency.' As such, they are no longer permitted in MR1 and MR2 zones.

DAY CARE in HOME for 14 or FEWER CHILDREN:
Add a disclaimer in this entry because Family Day Care uses are only by-right in residential zones if operating as an accessory use with up to 8 children, and any home day care facility with 9 to 14 children conflicts with the definition of 'LARGE FAMILY DAY CARE.'

EQUINE KEEPING:
Suggest that any new building, addition, or conversion which creates new habitable space on a lot located in whole or in part within an Equine Keeping "K" District or lot zoned RA, RE20, RE40, A1, or A2 require the "Equine Keeping Checklist Form" before a Building permit is issued by LADBS in order to avoid inappropriate encroachment on adjacent lots (ZI 2438).

FABRIC STORE:
Same zones as 'Notions Store.'

FITNESS STUDIO, BOXING, or OTHER PHYSICAL EXERCISE STUDIO:
Same zones as 'Health Club.' C1.5, C2, C5, CM, M1, M2, M3.

FOOT MASSAGE:
Same zones as 'Massage Parlor, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist' (see below).

HOTELS, HOSTELS, MOTELS, APARTMENT HOTELS (under conditions specified in Section 12.11 A 4):
Use List indicates that these 'Hotel' uses, and variations of such, are by-right in the R4 zone under the conditions specified in Section 12.11 A 4. These conditions, however, are very restrictive, causing most 'Hotel' uses in the R4, RAS4, and R5 zones to require a CUP to operate. Thus, the Use List Update now reflects 'Hotel' uses in these zones as those requiring a CUP rather than allowable by-right in their respective zones, with an asterisk to indicate the special conditions under which by-right 'Hotel' uses can occur.

KARATE STUDIO:
Use List already says 'Martial Arts Studio – see Gymnasium.' So by extension, allow Karate Studios in same zones as Gymnasiums.

MASSAGE PARLOR, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist:
According to ZAI 2010-2714, massage parlors are not subject to adult entertainment regulations when massage is performed by a licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist. The new use list now makes a distinction between 'Massage Parlor, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist' and 'Massage Parlor, adult entertainment business.' The latter requires a CUP in C2, C5, CM, M1, M2, and M3.

MEDICAL WASTE TREATMENT:
Same zones as 'Hazardous Waste Facility, storage and/or treatment,' which means a CUP in M2 and M3.

PARK or PLAYGROUND, owned and operated by governmental, philanthropic, or private agency:
Suggest that the definition include 'outdoor open space.' Remove MR1 and MR2 zones under these uses.

PILATES STUDIO:
Same zones as 'Health Club.' C1.5, C2, C5, CM, M1, M2, M3.

PRECIOUS or SEMI-PRECIOUS METAL BUYBACK CENTER:
Name changed from 'Gold Buyback Center' in order to capture other metals. Suggest that these are the same as a 'Pawnshop' rather than a 'Jewelry Store, secondhand' as the gold (or other precious metal) is usually melted down rather than resold in its original format. Permitted by CUP in C2, C5, CM, M1, M2, M3.

PUBLIC SCHOOL, elementary, middle, or high:
The zones for which 'Public School, Elementary, Middle, or High' are permitted should match those allowed under the 'School, public, elementary, middle, or high.' The Use List has been corrected to reflect this.

RAPID DIAGNOSTIC TESTING:
Los Angeles Municipal Code Section 12. 12.2-A, 1, subsections (g) and (h), establishes that the following uses are permitted within the CR Limited Commercial Zone:

> (g) **Prescription pharmacy** when conducted within a permitted office building, provided: that entrances to the pharmacy are located inside of the building; that no sign or other form of advertising is visible from outside the office building; that no sign or other form of advertising is utilized in any manner whatsoever outside of the building as a means of advertising the prescription pharmacy; and that the prescription pharmacy remains open for business only between the hours of 7:00 A.M. to 8:00 P.M., Monday through Saturday. (Amended by Ord. No. 165,403, Eff. 2/17/90.)
>
> (h) **Counseling and referral facilities.** (Added by Ord. No. 149,517, Eff. 5/26/77.)

Within the CR Zone, Rapid HIV Antibody Screening Test procedures are permitted as follows:

1.) When conducted only in association with the operation of a Prescription Pharmacy or a Counseling and Referral Facility, as permitted pursuant to Sections 12. 12.2-A, 1 (g) and (h) of the Code; and,
2.) Screening tests shall be expressly limited to those types of HIV "rapid tests" approved by the Food and Drug Administration (FDA), categorized as "waived" under the Clinical Laboratory Improvement Amendments (CLIA) program, and, that use only a fingerstick or oral fluid testing method to obtain a specimen (use of venipuncture is not permitted).

SKATE PARK (indoor):
Same zones as 'Skating Rink.' C2, C5, CM, M1, M2, M3.

SPA:
Suggest spas are the equivalent of a 'Bath, Turkish and the Like.' This update would allow spas by-right in C1.5, C2, C4, C5, CM, M1, M2, and M3.

SPINNING / CYCLING STUDIO:
Same zones as 'Health Club.' C1.5, C2, C5, CM, M1, M2, M3.

TANNING SALON:
Same as 'Beauty Parlor or Salon,' so permitted by-right in RAS3, RAS4, C1 and above, M1, M2, M3.

TRUCK GARDENING:

Allow truck gardening in the following commercial and manufacturing zones: C2, C4, C5, CM, MR1, M1, MR2, M2, and M3. In addition to residential zones, truck gardening is clarified to be allowed in the above more permissive zones.

TUTORING CENTER for SCHOOL-AGE CHILDREN:
Suggest that these fall under the generic pre-established 'Educational Institution' use. As such, they would be permitted in RAS3, R4, RAS4, R5, CR, C2, C4, C5; furthermore, they will no longer be permitted in R3, C1, and C1.5.

USED AUTO SALES:
Per Ordinance 178,382 which revised the automotive use definition and performance standards, 'Used Auto Sales' are permitted in the C4 zone with provisions of the C2 zone requiring compliance with conditions of 12.22 A28.

YOGA STUDIO:
Same zones as 'Health Club.' C1.5, C2, C5, CM, M1, M2, M3.

NEW ALCOHOL-RELATED USES:
The new Use List distinguishes that all of these require a CUP in the CR, C1, C1.5, C2, C4, C5, MR1, M1, MR2, M2, and M3 Zones. Lists #1and #2 include caveats that these meet ABC requirements.

- Bar
- Beer Tasting Establishment
- Cocktail Lounge
- Gastropub
- Liquor Store
- Lounge
- Microbrewery
- Tavern
- Wine Bar
- Wine Tasting Establishment

USES THAT WERE SUGGESTED FOR ADDITION, BUT WOULD LIKELY REQUIRE AN ORDINANCE

- Dancing, public live entertainment
- Day Laborer Center
- Green Manufacturing
- Ink / Toner Recycling
- Internet Business
- Medical Office
- Poultry Sale, live

LIST NO. 1 OF USES PERMITTED
IN VARIOUS ZONES IN THE CITY OF LOS ANGELES

(Breakdown by Different Zones)

Uses listed in black are permitted by-right in the indicated zone. Uses colored red require a conditional use permit (CUP) in the indicated zone. Uses colored green may be permitted as a public benefit in the indicated zone.

OS OPEN SPACE ZONE

AQUARIUM, according to Section 12.24 U. 19. (f).

ARENA, according to Section 12.24 U. 2.

ATHLETIC FIELD.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BASEBALL FIELD.

BINGO (subject to the provisions of Section 12.21 A. 13).

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHILD CARE FACILITY.

COMMUNITY CENTER, operated by governmental agency, according to Section 12.24 U. 19. (a).

COMMUNITY CENTER, operated by philanthropic organization, according to Section 12.24 U. 19. (a).

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

ECOLOGICAL PRESERVES, sanctuaries and habitat protection sites.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FIRE STATION, performance standards, according to Section 14.00 A. 3.

GARBAGE DUMP, closed.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HIGH VOLTAGE TRANSMISSION LINES and TOWERS, according to Section 12.24 U. 19. (g).

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, public, according to Section 12.24 U. 19. (a).

MARINE PRESERVES, sanctuaries, and habitat protection sites.

MUSEUM, nonprofit, performance standards, according to Section 12.24 U. 19. (c).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NATURAL RESOURCE PRESERVES for the managed production of resources, including, but not limited to, forest lands, waterways and watersheds used for commercial fisheries; agricultural lands used for food and plant production; areas containing major mineral deposits
("G" Surface Mining Districts) and other similar uses.

NATURE PRESERVE, according to Section 12.24 U. 19. (e).

OBSERVATORY, according to Section 12.24 U. 19. (f).

PARK or PLAYGROUND (outdoor open space), operated by governmental agency, including: bicycle trails, equestrian trails, walking trails, nature trails, park land/lawn areas, children's play areas, picnic facilities, and athletic fields (not to exceed 200 seats in park) used for park and recreation purposes.

PARK or PLAYGROUND (outdoor open space), operated by philanthropic organization.

PARK or PLAYGROUND (outdoor open space), operated by private agency.

PLANETARIUM, according to Section 12.24 U. 19. (f).

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUBLIC BEACH, according to Section 12.24 U. 19. (a).

PUBLIC CAMPING FACILITY, according to Section 12.24 U. 19. (a).

PUBLIC GAME COURT, according to Section 12.24 U. 19. (a).

PUBLIC GYM FACILITY, according to Section 12.24 U. 19. (a).

PUBLIC SCHOOL, elementary, middle, or high, according to Section 12.24 U. 24. (a).

PUBLIC SWIMMING POOL, according to Section 12.24 U. 19. (a).

PUBLIC TENNIS COURT, according to Section 12.24 U. 19. (a).

PUBLIC WATER SUPPLY RESERVOIR (uncovered) and accessory uses which are incidental to the operation and continued maintenance of such reservoirs.

RECREATION AREA, public, including: bicycle trails, equestrian trails, walking trails, nature trails, park land/lawn areas, children's play areas, picnic facilities, and athletic fields (not to exceed 200 seats in park) used for park and recreation purposes.

RECREATION CENTER, according to Section 12.24 U. 19. (a).

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

RESERVOIR, water.

SANITARY LANDFILL SITES which have received certificates of closure in compliance with federal and state regulations.

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SENIOR CITIZEN CENTER, according to Section 12.24 U. 19. (a).

SHELTER FOR THE HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STADIUM, according to Section 12.24 U. 2.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WATER CONSERVATION AREAS, including percolation basins and flood plain areas.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

ZOO, according to Section 12.24 U. 19. (f).

A1 AGRICULTURAL ZONE

(*) indicates a use which is accessory to a residential use, and not for commercial purposes.

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS* - no kitchen.

ACCESSORY USES.

AGRICULTURAL USES.

ANIMAL KEEPING or RAISING, domestic* (see definition of Accessory Use) 17,500 square-foot minimum lot area - limitations on commercial activity.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

APIARY (bee raising).

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

AVIARY (bird raising).

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a). (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CATTLE KEEPING* -17,500 square-foot minimum lot area - 4,000 square feet of lot area per animal.

CATTLE FEED or SALES YARD, according to Section 12.24 W. 5.

CHICKEN KEEPING or RAISING* (for commercial purposes, must be on lots of 5 acres or more).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHINCHILLA KEEPING or RAISING* (for commercial purposes, must be on lots of 5 acres or more).

CHIPPING and GRINDING ACTIVITIES (enclosed building), according to Section 12.24 U. 9. (a). (1).

CHRISTMAS TREE FARM.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only subject to the provisions of Sec. 12.22 A. 4.

CHURCH, according to Section 12.24 W. 9.

CIRCUS QUARTERS or MENAGERIE, according to Section 12.24 W. 10.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMERCIAL GRAZING, BREEDING, BOARDING, RAISING, or TRAINING of DOMESTIC ANIMALS, according to Section 12.24 W. 5.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

COMPOSTING FACILITY (enclosed building), according to Section 12.24 U. 9. (a). (2).

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CURING FACILITY (enclosed building), according to Section 12.24 U. 9. (a). (3).

DAIRY, cattle or goat, according to Section 12.24 W. 6.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family - no more than two on any one lot.

EARTHWORM OR GRUB RAISING.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING* (See ZI 2438 for conditions) - 17,500 square-foot minimum lot area - 4,000 square feet of lot area per animal - limitations on commercial activity.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (1).

FARMING.

FIRE STATION, performance standards, according to Section 14.00 A. 3.

FISH KEEPING or RAISING*.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FOWL KEEPING or RAISING*.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

FROG KEEPING or RAISING*.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOAT KEEPING or RAISING* 17,500 square-foot minimum lot area.

GOLF COURSE - except driving tees or ranges, miniature and pitch and putt courses, illuminated courses and similar commercial operations (only limited accessory clubhouse).

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE (as accessory use only).

HELICOPTER LANDINGS - infrequent, with Fire Department permit.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOG KEEPING, five or fewer (see Swine Keeping).

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HORSE KEEPING.

HOSPITAL, according to Section 12.24 U. 12; incidental heliport, according to Section 12.24 W. 23.

HYDROPONIC AGRICULTURAL ENTERPRISE.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MULCHING FACILITY (enclosed building), according to Section 12.24 U. 9. (a). (4).

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, flower, plant or tree (sale of stock raised only on premises).

NURSERY SCHOOL, according to Section 12.24 W. 51.

NUTRIA KEEPING or RAISING.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

PIGEON KEEPING or RAISING*.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING or RAISING*.

PUBLIC PARKING AREA, according to Section 12.24 W. 37.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING or RAISING* (for commercial purposes, must be on lots of 5 acres or more).

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

RIDING ACADEMY, according to Section 12.24 W. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SERVANT'S QUARTERS, as accessory use .

SHEEP KEEPING or RAISING* - 17,500 square-foot minimum lot area.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SORORITY HOUSE, according to Section 12.24 W. 21.

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SNAKE or REPTILE KEEPING or RAISING.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STABLE - private (as accessory to dwelling on lot with minimum 17,500 square-foot area and capacity not exceeding one horse per 4,000 square feet of lot area.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STAND for DISPLAY and SALE of AGRICULTURAL PRODUCTS RAISED on the PREMISES.

SWINE KEEPING* - five or fewer.

SWINE KEEPING, six or more, according to Section 12.24 W. 46.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TURKEY KEEPING or RAISING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

A2 AGRICULTURAL ZONE

(*) indicates a use which is accessory to a residential use, and not for commercial purposes.

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS* - no kitchen.

ACCESSORY USES.

AGRICULTURAL USES.

ANIMAL KEEPING or RAISING, domestic* (see definition of Accessory Use) 17,500 square-foot minimum lot area - limitations on commercial activity.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

APIARY (bee raising).

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

AVIARY (bird raising).

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a). (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CATTLE FEED or SALES YARD, according to Section 12.24 W. 5.

CATTLE KEEPING* -17,500 square-foot minimum lot area - 4,000 square feet of lot area per animal.

CHICKEN KEEPING or RAISING* (for commercial purposes, must be on lots of 5 acres or more).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHINCHILLA KEEPING or RAISING* (for commercial purposes, must be on lots of 5 acres or more).

CHIPPING and GRINDING ACTIVITIES (enclosed building), according to Section 12.24 U. 9. (a). (1).

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only subject to the provisions of Sec. 12.22 A. 4.

CHRISTMAS TREE FARM.

CHURCH, according to Section 12.24 W. 9.

CIRCUS QUARTERS or MENAGERIE, according to Section 12.24 W. 10.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMERCIAL GRAZING, BREEDING, BOARDING, RAISING, or TRAINING of DOMESTIC ANIMALS, according to Section 12.24 W. 5.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

COMPOSTING FACILITY (enclosed building), according to Section 12.24 U. 9. (a). (2).

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CURING FACILITY (enclosed building), according to Section 12.24 U. 9. (a). (3).

DAIRY, cattle or goat, according to Section 12.24 W. 6.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family - no more than two on any one lot.

EARTHWORM OR GRUB RAISING.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING* (See ZI 2438 for conditions) - 17,500 square-foot minimum lot area - 4,000 square feet of lot area per animal - limitations on commercial activity.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (1).

FARMING.

FIRE STATION, performance standards, according to Section 14.00 A. 3.

FISH KEEPING or RAISING*.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FOWL KEEPING or RAISING*.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

FROG KEEPING or RAISING*.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOAT KEEPING or RAISING* 17,500 square-foot minimum lot area.

GOLF COURSE - except driving tees or ranges, miniature and pitch and putt courses, illuminated courses and similar commercial operations (only limited accessory clubhouse).

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE (as accessory use only).

HELICOPTER LANDINGS - infrequent, with Fire Department permit.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOG KEEPING, five or fewer (see Swine Keeping).

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HORSE KEEPING.

HOSPITAL, according to Section 12.24 U. 12; incidental heliport, according to Section 12.24 W. 23.

HYDROPONIC AGRICULTURAL ENTERPRISE.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MULCHING FACILITY (enclosed building), according to Section 12.24 U. 9. (a). (4).

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL, according to Section 12.24 W. 51.

NURSERY, flower, plant or tree (sale of stock raised only on premises).

NUTRIA KEEPING or RAISING.

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

PARKING AREA, public, according to Section 12.24 W. 37.

PIGEON KEEPING or RAISING*.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING or RAISING*.

PUBLIC PARKING AREA, according to Section 12.24 W. 37.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING or RAISING* (for commercial purposes, must be on lots of 5 acres or more).

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

RIDING ACADEMY, according to Section 12.24 W. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SERVANT'S QUARTERS, as accessory use .

SHEEP KEEPING or RAISING* - 17,500 square-foot minimum lot area.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SNAKE or REPTILE KEEPING or RAISING.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STABLE - private (as accessory to dwelling on lot with minimum 17,500 square-foot area and capacity not exceeding one horse per 4,000 square feet of lot area.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STAND for DISPLAY and SALE of AGRICULTURAL PRODUCTS RAISED on the PREMISES.

SWINE KEEPING, according to Section 12.24 W. 46.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TURKEY KEEPING or RAISING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RA SUBURBAN ZONE

(*) indicates a use which is accessory to a residential use, and not for commercial purposes.

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS* - no kitchen.

ACCESSORY USES.

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

AGRICULTURAL USES, no retail sales on site.

ANIMAL KEEPING or RAISING, domestic* (see definition of Accessory Use) - 17,500 square-foot minimum lot area - limitations on commercial activity.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a). (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CATTLE KEEPING* - 17,500 square-foot minimum lot area - 4,000 square feet of lot area per animal.

CHICKEN KEEPING*.

CHILD CARE (see Day Care).

CHINCHILLA KEEPING*.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHRISTMAS TREE FARM.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family.

DWELLING, two-family (on lots siding on a commercial or industrial zone and having a minimum area of 20,000 square feet, and not extending more than 100 feet from the boundary of the less restricted zone which it adjoins).

EARTHWORM or GRUB RAISING.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE BOARDING, BREEDING, grazing, raising or training (commercial), according to Section 12.24 W. 5.

EQUINE / HORSE KEEPING* (See ZI 2438 for conditions) - 17,500 square-foot minimum lot area - 4,000 square feet of lot area per animal - limitations on commercial activity.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (1).

FIRE STATION, performance standards, according to Section 14.00 A. 3.

FISH KEEPING.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FOWL KEEPING*.

FROG KEEPING*.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOAT KEEPING* - 17,500 square-foot minimum lot area.

GOLF COURSE - except driving tees or ranges, miniature and pitch and putt courses, illuminated courses and similar commercial operations (only limited accessory clubhouse).

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE (as accessory only).

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HYDROPONIC AGRICULTURAL ENTERPRISE.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, flower, plant or tree.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NUTRIA KEEPING

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

PIGEON KEEPING*.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING*.

PRIVATE SCHOOL, other than elementary, middle, or high, according to Section 12.24 U. 24. (c).

PUBLIC PARKING AREA, according to Section 12.24 W. 37.

PUBLIC SCHOOL, elementary, middle, or high, according to Section 12.24 U. 24. (a).

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING*.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RIDING ACADEMY, SCHOOL, CLUB, or STABLE, according to Section 12.24 W. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SECOND DWELLING UNIT, large lot, according to Section 12.24 W. 44.

SERVANT'S QUARTERS, as accessory use.

SHEEP KEEPING - 17,500 square-foot minimum lot area.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STABLE, private - as accessory to dwelling on lot with minimum 17,500 square-foot area and capacity not exceeding one horse per 4,000 square feet of lot area.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STAND for DISPLAY and SALE of AGRICULTURAL PRODUCTS RAISED on the PREMISES, according to Section 12.24 W. 45.

SWINE KEEPING, 5 or fewer, according to Section 12.24 W. 46.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TRUCK GARDENING.

TURKEY KEEPING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RE RESIDENTIAL ESTATE ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS (20,000 square-foot minimum lot area - no kitchen).

ACCESSORY USES, including name plates and signs (as provided for in Section 12.21 A. 7).

ADULT EDUCATION CLASSES - occasional use in private

ANIMAL KEEPING, domestic.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a). (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHURCH, according to Section 12.24 W. 9.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family.

DWELLING, two-family (on a lot siding on a commercial or industrial zone, and with required lot area of particular zone designation).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING (See ZI 2438 for conditions) - on same lot with dwelling - no commercial activity - 17,500 square-foot minimum lot area - 4,000 square feet of lot area per animal - no commercial activity.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SERVANT'S QUARTERS - as accessory use - on a lot at least 15,000 square feet - no kitchen.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STABLE, private - as accessory dwelling on same lot - lot area 20,000 square-foot minimum, 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TRUCK GARDENING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RS SUBURBAN ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 15,000 square-foot minimum lot area - no kitchen.

ACCESSORY USES, including name plates and signs (as provided for in Section 12.21 A. 7).

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHURCH, according to Section 12.24 W. 9.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family.

DWELLING, two-family - on a lot siding on a commercial or industrial zone, minimum lot area 7,500 square feet.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING - on same lot with dwelling - no commercial activity - 20,000 square-foot minimum lot area - 5,000 square feet of lot area per animal.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space), operated by governmental agency.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SECOND DWELLING UNIT, large lot, according to Section 12.24 W. 44.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STABLE, private - as accessory dwelling on same lot - lot area 20,000 square-foot minimum, 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TRUCK GARDENING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

R1 ONE-FAMILY ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 10,000 square-foot minimum lot area.

ACCESSORY USES.

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family.

DWELLING, two-family (on a lot siding on a commercial or industrial zone, minimum lot area 5,000 square feet).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING - on same lot with dwelling - no commercial activity - 20,000 square-foot minimum lot area - 5,000 square feet of lot area per animal.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, (subject to the provisions of Section 12.05 A. 16).

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SECOND DWELLING UNIT, large lot, according to Section 12.24 W. 44.

SERVANT'S QUARTERS (as accessory use - on lot of 10,000 square feet - no kitchen).

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STABLE, private as accessory - on lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TRUCK GARDENING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RU RESIDENTIAL URBAN ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY USES.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a). (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space), operated by governmental agency.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RZ RESIDENTIAL ZERO SIDE YARD ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY USES.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a). (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one family.

DWELLING, one-family, attached across lot lines.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RW1 RESIDENTIAL WATERWAYS ZONE

ACCESSORY BUILDINGS (to permitted use - other limitations under Sections 12.21 C and 12.22 C).

ACCESSORY LIVING QUARTERS - 4,600 square-foot minimum lot area.

ACCESSORY USES, including name plates and signs (as provided for in Section 12.21 A. 7).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space), operated by government agency, according to Section 14.00 A. 5.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SERVANT'S QUARTERS - as accessory use - on a lot of 4,600 square feet - no kitchen.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

R2 TWO-FAMILY ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 10,000 square-foot minimum lot area.

ACCESSORY USES.

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHRISTMAS TREE and ornament selling - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family, attached (subject to the limitations of Section 12.22 C).

DWELLING, two-family (4,000 square-foot minimum lot area).

THE FOLLOWING additional uses on lots siding a commercial or industrial zone (R3 lot area requirements - under the limitations of Section 12.09 A. 3):

APARTMENT HOUSES.

BOARDING HOUSES.

MULTIPLE DWELLINGS.

PRINCIPAL OFFICE of Physician or Dentist (in his home).

ROOMING HOUSE.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING - on same lot with dwelling - no commercial activity - 20,000 square-foot minimum lot area - 5,000 square feet of lot area per animal.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, (subject to the provisions of Section 12.05 A. 16).

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SERVANT'S QUARTERS (as accessory use - on lot of 10,000 square feet - no kitchen).

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STABLE, private as accessory - on lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TRUCK GARDENING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RD1.5, RD2, RD3, RD4, RD5 and RD6 RESTRICTED DENSITY MULTIPLE DWELLING ZONES

Commercial uses permitted only on the ground floor of a residential building permitted in the R3 Zone.
All merchandise new and sold at retail.
All products produced sold on the premises, and not more than five persons engaged in production or servicing of materials. All activities conducted within completely enclosed building, except that restaurants may have outdoor eating areas.

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS(dwelling unit density requirements).

ACCESSORY USES, including name plates and signs (as provided for in Section 12.21 A).

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ANTIQUE SHOP, in historic building, according to Section 12.24 X. 12. (b).

APARTMENT HOUSE.

ARENA, according to Section 12.24 U. 2.

ART GALLERY, in historic building, according to Section 12.24 X. 12. (b).

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a). (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

BOARDING HOUSE, five or fewer guest rooms or light housekeeping rooms.

CAFÉ, in historic building, according to Section 12.24 X. 12. (b). (1).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLLECTIBLES SHOP, in historic building, according to Section 12.24 X. 12. (b).

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, group.

DWELLING, multiple.

DWELLING, one-family.

DWELLING, one-family, attached (subject to limitations of Section 12.22 C).

DWELLING, two-family.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING - in conjunction with residential use of a lot - no commercial activity - 20,000 square-foot minimum lot area.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FLORIST, in historic building, according to Section 12.24 X. 12. (b).

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

OFFICE, business or professional, in historic building, according to Section 12.24 X. 12. (b) (3).

OFFICE, civic and social organizations or philanthropic institutions, in historic building, according to Section 12.24 X. 12. (b).

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space), operated by governmental agency.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RARE BOOK SHOP, in historic building, according to Section 12.24 X. 12 (b) (4) (v.).

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RECYCLING AREA or ROOM, for MULTIPLE-FAMILY RESIDENTIAL USES (subject to the provisions of Section 12.21 A. 19).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RESTAURANT, in historic building, according to Section 12.24 X. 12. (b). (1).

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SERVANT'S QUARTERS, as accessory use (dwelling unit density requirement).

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STABLE, private - accessory to residential use - on a lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RMP MOBILE HOME PARK ZONE

ACCESSORY BUILDINGS (to permitted use - other limitations under Sections 12.21 C and 12.22 C).

ACCESSORY USES, including name plates and signs (as provided for in Section 12.21 A. 7).

ANIMAL KEEPING, domestic.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BINGO (subject to the provisions of Section 12.21 A. 13).

CHICKEN KEEPING, no commercial activity.

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHINCILLA KEEPING, no commercial activity.

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, one-family.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING, no commercial activity.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARKS, PLAYGROUNDS (outdoor open space), owned and operated by a governmental agency.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING, no commercial activity.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RABBIT KEEPING, no commercial activity.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TRUCK GARDENING.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RW2 RESIDENTIAL WATERWAYS ZONE

ACCESSORY BUILDING (to permitted use - other limitations under Sections 12.21 C and 12.22 C).

ACCESSORY LIVING QUARTERS - 4,600 square-foot minimum lot area.

ACCESSORY USES, including name plates and signs (as provided for in Section 12.21 A. 7).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

CHILD CARE FACILITY, according to Section 12.24 W. 51.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, group (subject to density limitations of RW2 Zone).

DWELLING, one-family.

DWELLING, two-family.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards, according to Section 14.00 A. 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, subject to the provisions of Section 12.05 A. 16.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space), operated by government agency, according to Section 14.00 A. 5.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SERVANT'S QUARTERS - as accessory use - on a lot of 4,600 square feet - no kitchen.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

R3 MULTIPLE DWELLING ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 10,000 square-foot minimum lot area.

ACCESSORY USES.

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ANTIQUE SHOP, in historic building, according to Section 12.24 X. 12. (b).

APARTMENT HOUSE.

ARENA, according to Section 12.24 U. 2.

ART GALLERY, in historic building, according to Section 12.24 X. 12. (b).

ASSISTED LIVING CARE HOUSING.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

BOARDING HOUSE, five or fewer guest rooms or light housekeeping rooms.

CAFÉ, in historic building, according to Section 12.24 X. 12. (b).

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHILD CARE FACILITY, for 21 to 50 children, according to Section 12.24 X. 24.

CHILD CARE FACILITY, for no more than 20 children.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHRISTMAS TREE and ornament selling - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLLECTIBLES SHOP, in historic building, according to Section 12.24 X. 12. (b).

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COUNSELING and REFERRAL FACILITY, according to Section 12,24 W 14.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, group.

DWELLING, multiple.

DWELLING, one-family, attached (subject to the limitations of Section 12.22 C).

DWELLING, two-family (4,000 square-foot minimum lot area).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING - on same lot with dwelling - no commercial activity - 20,000 square-foot minimum lot area - 5,000 square feet of lot area per animal.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FLORIST, in historic building, according to Section 12.24 X. 12. (b).

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME OCCUPATIONS, (subject to the provisions of Section 12.05 A. 16).

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MULTIPLE DWELLINGS.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL, according to Section 12.24 W. 51.

OFFICE, business or professional, in historic building, according to Section 12.24 X. 12. (b) (3).

OFFICE, civic and social organizations or philanthropic institutions, in historic building, according to Section 12.24 X. 12. (b).

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

PARKING AREA, public, according to Section 12.24 W. 37.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RARE BOOK SHOP, in historic building, according to Section 12.24 X. 12 (b) (4) (v.).

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RECYCLING AREA or ROOM, for multiple-family residential uses (subject to the provisions of Section 12.21 A. 19).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RESTAURANT, in historic building, according to Section 12.24 X. 12. (b).

ROOMING HOUSE, five or fewer guest rooms or light housekeeping rooms.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SENIOR INDEPENDENT HOUSING.

SERVANT'S QUARTERS (as accessory use - on lot of 10,000 square feet - no kitchen).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SHELTER for the HOMELESS, fewer than 30 beds, with reduced parking requirements, performance standards according to Section 14.00 A 8.

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE, according to Section 12.24 W. 21.

STABLE, private as accessory - on lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TRUCK GARDENING.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RAS3 RESIDENTIAL / ACCESSORY SERVICES ZONE

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 10,000 square-foot minimum lot area.

ACCESSORY USES.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

APARTMENT HOUSE.

ASSISTED LIVING CARE HOUSING.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BINGO (subject to the provisions of Section 12.21 A. 13).

BOARDING HOUSE, five or fewer guest rooms or light housekeeping rooms.

CHRISTMAS TREE and ornament selling - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY GARDEN.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DWELLING, group.

DWELLING, multiple.

DWELLING, one-family, attached (subject to the limitations of Section 12.22 C).

DWELLING, two-family (4,000 square-foot minimum lot area).

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

FRATERNITY HOUSE, according to Section 12.24 W. 21.

HOME OCCUPATIONS, (subject to the provisions of Section 12.05 A. 16).

MULTIPLE DWELLINGS.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NURSERY SCHOOL, according to Section 12.24 W. 51.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RARE BOOK SHOP, in historic building, according to Section 12.24 X. 12 (b) (4) (v.).

RECYCLING AREA or ROOM, for multiple-family residential uses (subject to the provisions of Section 12.21 A. 19).

ROOMING HOUSE, five or fewer guest rooms or light housekeeping rooms.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SECOND DWELLING UNIT, large lot, according to Section 12.24 W. 44.

SENIOR INDEPENDENT HOUSING.

SERVANT'S QUARTERS (as accessory use - on lot of 10,000 square feet - no kitchen).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SHELTER for the HOMELESS, fewer than 30 beds, with reduced parking requirements, performance standards according to Section 14.00 A 8.

SORORITY HOUSE, according to Section 12.24 W. 21.

STABLE, private as accessory - on lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

The following uses when located on the ground floor of any residential building permitted in the R3 Zone when conducted in accordance with the limitations specified in Section 12.10.5 B:

ARCHITECT'S OFFICE.

ARENA, according to Section 12.24 U. 2.

ART STORE.

AUDITORIUM, according to Section 12.24 U. 2.

BAKERY GOODS STORE.

BANK.

BANQUET HALL.

BARBER SHOP.

BEAUTY SHOP or PARLOR.

BLOODMOBILE, subject to the provisions of Section 12.22 A. 24.

BOARDING HOME for AGED, no medical or nursing care.

BOOK STORE, new.

BRIDGE CLUB.

BROKER (stocks, bonds, or real estate).

BUTCHER SHOP.

CAFE - no dancing or entertainment (for provisions concerning alcoholic beverages see Section 12.21 A. 10 and 14).

CAFETERIA (for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14).

CAMERA SHOP.

CANDY STORE.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, new.

CHARTER SCHOOL.

CHILD CARE FACILITY, for no more than 20 children.

CHILD CARE FACILITY, for 21 to 50 children, according to Section 12.24 X. 24.

CHURCH (except rescue mission or temporary revival) (increased yards required).

CLOTHES CLEANING ESTABLISHMENT (non-flammable cleaning fluid only)

CLOTHING ALTERATIONS SHOP.

CLOTHING STORE, new.

CLUB, private or nonprofit.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMPUTER GRAPHICS STUDIO.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

COMPUTER STORE.

CONFECTIONARY STORE.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETOLOGICAL ESTABLISHMENT.

COUNSELING and REFERRAL FACILITY.

CREDIT UNION ASSOCIATION or UNION.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CULTURAL CENTER, owned and operated by a governmental agency or nonprofit organization.

DAIRY PRODUCTS STORE.

DELICATESSEN (for provisions relating to service of alcoholic beverages, see Section 12.21 A. 10 and 14, packaged alcoholic beverage sales require conditional use).

DETECTIVE or POLICE AGENCY, private.

DOUGHNUT SHOP.

DRESSMAKING SHOP.

DRESS SHOP.

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DRUG STORE (alcoholic beverage sales require conditional use).

DRY CLEANERS, including on-premises and self-service (non-flammable cleaning fluid only).

DRY GOODS STORE.

EDUCATIONAL INSTITUTION.

ELECTRICAL APPLIANCE STORE (no repairs on premises).

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRONICS STORE.

ENGINEERING OFFICE.

FABRIC STORE.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FINANCIAL INSTITUTION.

FIRE STATION, performance standards, according to Section 14.00 A. 3.

FISH MARKET.

FLORIST.

FLOWER SHOP.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNAL ASSOCIATION.

FROZEN FOOD STORE.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GROCERY STORE (alcoholic beverage sales require conditional use).

HAIR DRESSER.

HARDWARE STORE, new.

HAT MAKING SHOP.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME for the AGED, no medical or nursing care.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOUSE of WORSHIP (except rescue mission or temporary revival) (increased yards required).

ICE CREAM PARLOR.

INSURANCE AGENCY.

INTELLIGENCE AGENCY, private.

JEWELRY STORE (no manufacturing).

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS (see Section 12.13 A. 2. (a). (27)).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LAUNDROMAT, self-service (non-flammable cleaning fluid only).

LAUNDRY, including self-service (non-flammable cleaning fluid only).

LIBRARY, public.

LIBRARY, nonprofit (increased yards required).

LOAN OFFICE - no used or repossessed articles to be stored on premises (also see Zone CR).

LODGE, private, nonprofit.

MANICURE PARLOR.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

MESSENGER OFFICE.

MILLINERY SHOP.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MOBILE MEDICAL FACILITY, subject to the provisions of Section 12.22 A. 24.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit (increased yards required).

MUSIC STORE.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE (no printing or distribution).

NEWSSTAND.

NOTIONS STORE.

NOVELTIES STORE (only those items not regulated by Section 12.70 of the Municipal Code).

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL.

OFFICE, business or professional.

OFFICE, corporate headquarters.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space), owned and operated by governmental agency.

PHARMACY, prescription.

PHONOGRAPH RECORD STORE, new.

PHOTOGRAPHER.

POLICE STATION.

POULTRY MARKET, dressed - no live poultry.

PRIVATE DETECTIVE AGENCY.

PRIVATE SCHOOL.

PRODUCE MARKET.

PROFESSIONAL OFFICE.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUBLIC SCHOOL.

RADIO and TELEVISION STORE, new.

REAL ESTATE OFFICE.

RECREATION CENTER, owned and operated by governmental agency

RECYCLING COLLECTION or BUYBACK CENTER, in conjunction with a grocery store (subject to the provisions of Section 12.21 A. 18).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RELIGIOUS ASSOCIATION - no church or house of worship.

RESTAURANT - no dancing or entertainment or drive-thru service (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14).

SANITARIUM, according to Section 12.24 U. 12.

SAVINGS and LOAN ASSOCIATION.

SCHOOL, private.

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high.

SCIENTIFIC INSTRUMENT STORE.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SHOE REPAIR SHOP.

SHOE STORE.

SIGNS, nameplates or advertising matter (as provided in Section 12.21 A. 7).

SODA FOUNTAIN.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SPORTING GOODS STORE.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STATIONERY STORE.

STEREO EQUIPMENT STORE.

TAILOR SHOP.

TANNING SALON.

TEA ROOM.

TELECOMMUTING CENTER

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious (except rescue mission or temporary revival) (increased yards required).

THRIFT and LOAN COMPANY.

TICKET AGENCY or BROKER.

TOBACCO SHOP.

TRAVEL AGENCY.

TRUCK GARDENING.

UNIVERSITY.

WALLPAPER STORE.

WATER (drinking) STORE.

WEARING APPAREL SHOP (new merchandise only).

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

YARN SHOP.

R4 MULTIPLE DWELLING ZONE

Commercial uses permitted only on the ground floor of a residential building permitted in the R3 Zone.
All merchandise new and sold at retail.
All products produced sold on the premises, and not more than five persons engaged in production or servicing of materials.
All activities conducted within completely enclosed building, except that restaurants may have outdoor eating areas.

An asterisk (*) indicates that there are particular circumstances whereby the use can occur by-right, which are set forth by conditions specified in Section 12.11 A 4, but otherwise requires a conditional use permit (CUP).

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 10,000 square-foot minimum lot area.

ACCESSORY USES.

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ANTIQUE SHOP, in historic building, according to Section 12.24 X. 12. (b).

APARTMENT HOUSE.

ARENA, according to Section 12.24 U. 2.

ART GALLERY, in historic building, according to Section 12.24 X. 12. (b).

ASSISTED LIVING CARE HOUSING.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL, according to Section 12.24 W. 35.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

BOARDING HOME for aged, with special care, philanthropic (increased yards required).

BOARDING HOUSE (hotel) - six or more guest rooms (also see Zone R3).

BOARDING HOUSE, five or fewer guest rooms or light housekeeping rooms.

CAFÉ, in historic building, according to Section 12.24 X. 12. (b).

CHARTER SCHOOL.

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHILD CARE FACILITY, for no more than 20 children.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHRISTMAS TREE and ornament selling - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH (except Rescue Mission or Temporary Revival) (increased yards required).

CLUB, private, nonprofit, according to Section 12.24 W. 35.

COLLECTIBLES SHOP, in historic building, according to Section 12.24 X. 12. (b).

COLLEGE - with general academic instructions (increased yards required - see Educational Institution).

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency (increased yards required).

COMMUNITY CENTER, operated by philanthropic organization (increased yards required).

COMMUNITY GARDEN.

CONVENT.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COUNSELING and REFERRAL FACILITY, according to Section 12,24 W 14.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CULTURAL CENTER, owned and operated by a governmental agency or nonprofit organization.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DORMITORY (see "Hotel" definition).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, group.

DWELLING, multiple.

DWELLING, one-family, attached (subject to the limitations of Section 12.22 C).

DWELLING, two-family (4,000 square-foot minimum lot area).

EDUCATIONAL INSTITUTION (see definition - increased yards required).

ELDERCARE FACILITY.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING - on same lot with dwelling - no commercial activity - 20,000 square-foot minimum lot area - 5,000 square feet of lot area per animal.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FLORIST, in historic building, according to Section 12.24 X. 12. (b).

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE (see "Hotel" definition).

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME for the AGED, with special care, philanthropic (increased yards required).

HOME OCCUPATIONS, (subject to the provisions of Section 12.05 A. 16).

HOSPICE, philanthropic (increased yards required).

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOTELS, HOSTELS, MOTELS, APARTMENT HOTELS*.

HOUSE of WORSHIP (except Rescue Mission or Temporary Revival) (increased yards required).

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, nonprofit (increased yards required).

LIBRARY, public.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MONASTERY.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MULTIPLE DWELLINGS.

MUSEUM, nonprofit (increased yards required).

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

OFFICE, business or professional, in historic building, according to Section 12.24 X. 12. (b) (3).

OFFICE, civic and social organizations or philanthropic institutions, in historic building, according to Section 12.24 X. 12. (b).

ORPHANAGE, philanthropic (increased yards required).

PARK or PLAYGROUND (outdoor open space) - operated by government agency or philanthropic organization (increased yards required).

PARKING AREA, public, according to Section 12.24 W. 37.

PHILANTHROPIC INSTITUTION (see definition - increased yards required).

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RARE BOOK SHOP, in historic building, according to Section 12.24 X. 12 (b) (4) (v.).

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RECYCLING AREA or ROOM, for multiple-family residential uses (subject to the provisions of Section 12.21 A. 19).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RELIGIOUS RETREAT.

RESTAURANT, in historic building, according to Section 12.24 X. 12. (b).

ROOMING HOUSE, five or fewer guest rooms or light housekeeping rooms.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high (increased yards required).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SENIOR INDEPENDENT HOUSING.

SERVANT'S QUARTERS (as accessory use - on lot of 10,000 square feet - no kitchen).

SHELTER for the HOMELESS (maximum 30 persons; with conditions).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE (see "Hotel" definition).

SPECIAL CARE HOME, philanthropic (increased yards required).

STABLE, private as accessory - on lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious, except rescue mission or temporary revival (increased yards required).

TRUCK GARDENING.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

UNIVERSITY - general academic instruction (increased yards required).

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

RAS4 RESIDENTIAL / ACCESSORY SERVICES ZONE

Commercial uses permitted only on the ground floor of a residential building permitted in the R3 Zone.
All merchandise new and sold at retail.
All products produced sold on the premises, and not more than five persons engaged in production or servicing of materials.
All activities conducted within completely enclosed building, except that restaurants may have outdoor eating areas.

An asterisk (*) indicates that there are particular circumstances in which by-right uses can occur, which are set forth by conditions specified in Section 12.11 A 4.

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 10,000 square-foot minimum lot area.

ACCESSORY USES.

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ANTIQUE SHOP, in historic building, according to Section 12.24 X. 12. (b).

APARTMENT HOUSE.

ARENA, according to Section 12.24 U. 2.

ASSISTED LIVING CARE HOUSING.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BINGO (subject to the provisions of Section 12.21 A. 13).

BOARDING HOME for aged, with special care, philanthropic (increased yards required).

BOARDING HOUSE (hotel) - six or more guest rooms (also see Zone R3).

BOARDING HOUSE, five or fewer guest rooms or light housekeeping rooms.

CAFÉ, in historic building, according to Section 12.24 X. 12. (b).

CHARTER SCHOOL.

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHILD CARE FACILITY, for no more than 20 children.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHRISTMAS TREE and ornament selling - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH (except Rescue Mission or Temporary Revival) (increased yards required).

COLLEGE - with general academic instructions (increased yards required - see Educational Institution).

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency (increased yards required).

COMMUNITY CENTER, operated by philanthropic organization (increased yards required).

COMMUNITY GARDEN.

CONVENT.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COUNSELING and REFERRAL FACILITY, according to Section 12,24 W 14.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CULTURAL CENTER, owned and operated by a governmental agency or nonprofit organization.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DORMITORY (see "Hotel" definition).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, group.

DWELLING, multiple.

DWELLING, one-family, attached (subject to the limitations of Section 12.22 C).

DWELLING, two-family (4,000 square-foot minimum lot area).

EDUCATIONAL INSTITUTION (see definition - increased yards required).

ELDERCARE FACILITY.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FLORIST, in historic building, according to Section 12.24 X. 12. (b).

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE (see "Hotel" definition).

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME for the AGED, with special care, philanthropic (increased yards required).

HOME OCCUPATIONS, (subject to the provisions of Section 12.05 A. 16).

HOSPICE, philanthropic (increased yards required).

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOTELS, HOSTELS, MOTELS, APARTMENT HOTELS*.

HOUSE of WORSHIP (except Rescue Mission or Temporary Revival) (increased yards required).

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, nonprofit (increased yards required).

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MONASTERY.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MULTIPLE DWELLINGS.

MUSEUM, nonprofit (increased yards required).

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

OFFICE, business or professional, in historic building, according to Section 12.24 X. 12. (b) (3).

OFFICE, civic and social organizations or philanthropic institutions, in historic building, according to Section 12.24 X. 12. (b).

ORPHANAGE, philanthropic (increased yards required).

PARK or PLAYGROUND (outdoor open space) - owned and operated by governmental agency.

PARKING AREA, public, according to Section 12.24 W. 37.

PHILANTHROPIC INSTITUTION (see definition - increased yards required).

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RARE BOOK SHOP, in historic building, according to Section 12.24 X. 12 (b) (4) (v.).

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RECYCLING AREA or ROOM, for multiple-family residential uses (subject to the provisions of Section 12.21 A. 19).

RELIGIOUS RETREAT.

RESTAURANT, in historic building, according to Section 12.24 X. 12. (b).

ROOMING HOUSE, five or fewer guest rooms or light housekeeping rooms.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high (increased yards required).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SECOND DWELLING UNIT, large lot, according to Section 12.24 W. 44.

SENIOR INDEPENDENT HOUSING.

SERVANT'S QUARTERS (as accessory use - on lot of 10,000 square feet - no kitchen).

SHELTER for the HOMELESS (maximum 30 persons; with conditions).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE (see "Hotel" definition).

SPECIAL CARE HOME, philanthropic (increased yards required).

STABLE, private as accessory - on lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious, except rescue mission or temporary revival (increased yards required).

TRUCK GARDENING.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

UNIVERSITY - general academic instruction (increased yards required).

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

The following uses when located on the ground floor of any residential building permitted in the R4 Zone when conducted in accordance with the limitations specified in Section 12.11.5 B:

ARCHITECT'S OFFICE.

ARENA, according to Section 12.24 U. 2.

ART STORE.

AUDITORIUM, according to Section 12.24 U. 2.

BAKERY GOODS STORE.

BANK.

BANQUET HALL.

BARBER SHOP.

BEAUTY SHOP or PARLOR.

BLOODMOBILE, subject to the provisions of Section 12.22 A. 24.

BOOK STORE, new.

BRIDGE CLUB.

BROKER (stocks, bonds, or real estate).

BUTCHER SHOP.

CAFE - no dancing or entertainment - for provisions concerning alcoholic beverages (see Section 12.21 A. 10 and 14).

CAFETERIA (for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14).

CAMERA SHOP.

CANDY STORE.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, new.

CLOTHES CLEANING ESTABLISHMENT (non-flammable cleaning fluid only)

CLOTHING ALTERATIONS SHOP.

CLOTHING STORE, new.

CLUB, private or nonprofit.

COFFEE SHOP.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY CENTER, operated by philanthropic organization.

COMMUNITY FACILITIES (as defined in Section 13.09 B. 3).

COMPUTER GRAPHICS STUDIO.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

COMPUTER STORE.

CONFECTIONARY STORE.

CONVENT.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETOLOGICAL ESTABLISHMENT.

COUNSELING and REFERRAL FACILITY.

CREDIT ASSOCIATION OR UNION.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CULTURAL CENTER, owned and operated by a governmental agency or nonprofit organization

DAIRY PRODUCTS STORE.

DELICATESSEN (for provisions relating to service of alcoholic beverages, see Section 12.21 A. 10 and 14, packaged alcoholic beverage sales require conditional use).

DETECTIVE or POLICE AGENCY, private.

DOUGHNUT SHOP.

DRESSMAKING SHOP.

DRESS SHOP.

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DRUG STORE (alcoholic beverage sales require conditional use).

DRY CLEANERS, including on-premises and self-service (non-flammable cleaning fluid only).

DRY GOODS STORE.

ELECTRICAL APPLIANCE STORE.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRONICS STORE.

ENGINEERING OFFICE.

FABRIC STORE.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and

serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FINANCIAL INSTITUTION.

FIRE STATION, performance standards, according to Section 14.00 A. 3.

FISH MARKET.

FLORIST.

FLOWER SHOP.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNAL ASSOCIATION.

FROZEN FOOD STORE.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP.

GOLF COURSE, according to Section 12.24 U. 8.
GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GROCERY STORE (alcoholic beverage sales require conditional use).

HAIR DRESSER.

HARDWARE STORE, new.

HAT MAKING SHOP.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOTEL, MOTEL, APARTMENT HOTEL, HOSTEL, TRANSIENT OCCUPANCY RESIDENTIAL STRUCTURE - no portion of structure closer than 500 feet to an A or R Zone.

HOUSE of WORSHIP (except rescue mission or temporary revival) (increased yards required).

ICE CREAM PARLOR.

INSURANCE AGENCY.

INTELLIGENCE AGENCY, private.

JEWELRY STORE (no manufacturing).

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS (see Section 12.13 A. 2. (a). (27)).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LAUNDROMAT, self-service (non-flammable cleaning fluid only).

LAUNDRY, including self-service (non-flammable cleaning fluid only).

LOAN OFFICE - no used or repossessed articles to be stored on premises.

LODGE, private, nonprofit.

MANICURE PARLOR.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

MESSENGER OFFICE.

MILLINERY SHOP.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MOBILE MEDICAL FACILITY, subject to the provisions of Section 12.22 A. 24.

MODEL HOME, according to Section 12.24 X. 15.

MOTEL or MOTOR LODGE (same limitations as Hotels).

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSIC STORE.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE (no printing or distribution).

NEWSSTAND.

NOTIONS STORE.

NOVELTIES STORE (only those items not regulated by Section 12.70 of the Municipal Code).

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSERY SCHOOL.

OFFICE, business or professional.

OFFICE, corporate headquarters.

PARKING AREA, public, according to Section 12.24 W. 37.

PARK or PLAYGROUND (outdoor open space), owned and operated by governmental agency.

PHARMACY, prescription.

PHONOGRAPH RECORD STORE, new.

PHOTOGRAPHER.

POLICE STATION.

POULTRY MARKET, dressed - no live poultry.

PRIVATE DETECTIVE AGENCY.

PRODUCE MARKET.

PROFESSIONAL OFFICE.

PRIVATE SCHOOL.

PUBLIC SCHOOL.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RADIO and TELEVISION STORE, new.

REAL ESTATE OFFICE.

RECREATION CENTER, owned and operated by governmental agency.

RECYCLING COLLECTION or BUYBACK CENTER IN CONJUNCTION WITH A GROCERY STORE (subject to the provisions of Section 12.21 A. 18).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RELIGIOUS ASSOCIATION - no church or house of worship.

RESTAURANT - no dancing or entertainment or drive-thru service (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14).

SANITARIUM, according to Section 12.24 U. 12.

SAVINGS and LOAN ASSOCIATION.

SCHOOL, private.

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, public, elementary, middle, or high.

SCIENTIFIC INSTRUMENT STORE.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SHOE REPAIR SHOP.

SHOE STORE.

SIGNS, nameplates or advertising matter (as provided in Section 12.21 A. 7).

SODA FOUNTAIN.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SPORTING GOODS STORE.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STATIONERY STORE.

STEREO EQUIPMENT STORE.

TAILOR SHOP.

TANNING SALON.

TEA ROOM.

TELECOMMUTING CENTER.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious (except rescue mission or temporary revival) (increased yards required).

THRIFT and LOAN COMPANY.

TICKET AGENCY or BROKER.

TOBACCO SHOP.

TRAVEL AGENCY.

TRUCK GARDENING.

WALLPAPER STORE.

WATER (DRINKING) STORE.

WEARING APPAREL SHOP (new merchandise only).

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

YARN SHOP.

R5 MULTIPLE DWELLING ZONE

Commercial uses permitted only on the ground floor of a residential building permitted in the R3 Zone.
All merchandise new and sold at retail.
All products produced sold on the premises, and not more than five persons engaged in production or servicing of materials.
All activities conducted within completely enclosed building, except that restaurants may have outdoor eating areas.

An asterisk (*) indicates that there are particular circumstances in which by-right uses can occur, which are set forth by conditions specified in Section 12.11 A 4.

ACCESSORY BUILDING (to permitted use).

ACCESSORY LIVING QUARTERS - 10,000 square-foot minimum lot area.

ACCESSORY USES.

ADULT EDUCATION CLASSES - occasional use in private home (subject to the limitations of Section 12.22 A. 8).

ALZHEIMER'S / DEMENTIA CARE HOUSING.

ANTENNA, amateur radio transmission and receiving, according to Section 12.24 X. 3.

ANTIQUE SHOP, in historic building, according to Section 12.24 X. 12. (b).

APARTMENT HOUSE.

ARENA, according to Section 12.24 U. 2.

ART GALLERY, in historic building, according to Section 12.24 X. 12. (b).

ASSISTED LIVING CARE HOUSING.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BANQUET HALL.

BAR, according to ZA 2007-5927 and Section 12.24 W. 1; must meet ABC requirements.

BED and BREAKFAST in historic building, according to Section 12.24 X. 12. (a) (1).

BEER TASTING ESTABLISHMENT, according to ZA 2007-5927 and Section 12.24 W. 1.

BINGO (subject to the provisions of Section 12.21 A. 13).

BOARDING HOME for aged, with special care, philanthropic (increased yards required).

BOARDING HOME for AGED, with special care.

BOARDING HOUSE (hotel) - six or more guest rooms (also see Zone R3).

BOARDING HOUSE, five or fewer guest rooms or light housekeeping rooms.

CAFÉ, in historic building, according to Section 12.24 X. 12. (b).

CHARTER SCHOOL.

CHICKEN KEEPING - on same lot with dwelling - no commercial activity.

CHILD CARE FACILITY, for no more than 20 children.

CHINCHILLA KEEPING - on same lot with dwelling - no commercial activity.

CHRISTMAS TREE and ornament selling - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH (except Rescue Mission or Temporary Revival) (increased yards required).

CLUB, private, nonprofit, chartered by State (increased yards required).

COCKTAIL LOUNGE, according to ZA 2007-5927 and Section 12.24 W. 1.

COLLECTIBLES SHOP, in historic building, according to Section 12.24 X. 12. (b).

COLLEGE - with general academic instructions (increased yards required - see Educational Institution).

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency (increased yards required).

COMMUNITY GARDEN.

CONVENT.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COUNSELING and REFERRAL FACILITY, according to Section 12,24 W 14.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CULTURAL CENTER, owned and operated by a governmental agency or nonprofit organization.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DORMITORY (see "Hotel" definition).

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DWELLING, group.

DWELLING, multiple.

DWELLING, one-family, attached (subject to the limitations of Section 12.22 C).

DWELLING, two-family (4,000 square-foot minimum lot area).

EDUCATIONAL INSTITUTION (see definition - increased yards required).

ELDERCARE FACILITY.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE KEEPING - on same lot with dwelling - no commercial activity - 20,000 square-foot minimum lot area - 5,000 square feet of lot area per animal.

FARMER'S MARKET, provided the property is paved and fully improved and used as a main parking lot incidental to, and serving a church, school, or philanthropic institution as defined in Section 12.03, according to Section 12.24 X. 6. (a). (5).

FIRE STATION, performance standards according to Section 14.00 A 3.

FLORIST, in historic building, according to Section 12.24 X. 12. (b).

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNITY HOUSE (see "Hotel" definition).

GASTROPUB, according to ZA 2007-5927 and Section 12.24 W. 1.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HELIPORT, incidental to a Hospital, according to Section 12.24 W. 23.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME for the AGED, with special care, philanthropic (increased yards required).

HOME for the AGED, with special care.

HOME OCCUPATIONS, (subject to the provisions of Section 12.05 A. 16).

HOSPICE (increased yards required).

HOSPICE, philanthropic (increased yards required).

HOSPITAL - no animal hospital - no clinic (out-patient), contagious, mental or drug or liquor addict cases (increased yards required).

HOTELS, HOSTELS, MOTELS, APARTMENT HOTELS*.

HOUSE of WORSHIP (except Rescue Mission or Temporary Revival) (increased yards required).

JOINT LIVING and WORK QUARTERS, in historic building, for professional uses, according to Section 12.24 X. 12. (a) (2).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LARGE FAMILY DAY CARE HOME, according to Section 12.24 X 25.

LIBRARY, nonprofit (increased yards required).

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

LIQUOR STORE, according to ZA 2007-5927 and Section 12.24 W. 1.

LODGE, private, nonprofit, chartered by State (increased yards required).

LOUNGE, according to ZA 2007-5927 and Section 12.24 W. 1.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MICROBREWERY, according to ZA 2007-5927 and Section 12.24 W. 1.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MONASTERY.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MULTIPLE DWELLINGS.

MUSEUM, nonprofit (increased yards required).

NAMEPLATES, SIGNS or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSING HOME (same limitations as for hospital).

OFFICE, business or professional, in historic building, according to Section 12.24 X. 12. (b) (3).

OFFICE, civic and social organizations or philanthropic institutions, in historic building, according to Section 12.24 X. 12. (b).

ORPHANAGE.

PARK or PLAYGROUND (outdoor open space) - operated by government agency or philanthropic organization.

PARKING AREA, public, according to Section 12.24 W. 37.

PHILANTHROPIC INSTITUTION.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY KEEPING on same lot with dwelling - no commercial activity.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING on same lot with dwelling - no commercial activity.

RARE BOOK SHOP, in historic building, according to Section 12.24 X. 12 (b) (4) (v.).

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RECYCLING AREA or ROOM, for multiple-family residential uses (subject to the provisions of Section 12.21 A. 19).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RELIGIOUS RETREAT.

REST HOME, convalescent (same limitations as for hospital).

RESTAURANT, in historic building, according to Section 12.24 X. 12. (b).

ROOMING HOUSE, five or fewer guest rooms or light housekeeping rooms.

SANITARIUM (same limitations as for hospital).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECOND DWELLING UNIT, according to Section 12.24 W. 43.

SECOND DWELLING UNIT, large lot, according to Section 12.24 W. 44.

SENIOR INDEPENDENT HOUSING.

SERVANT'S QUARTERS (as accessory use - on lot of 10,000 square feet - no kitchen).

SHELTER for the HOMELESS (maximum 30 persons; with conditions).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SIGNS, NAMEPLATES or ADVERTISING MATTER (as provided in Section 12.21 A. 7).

SKILLED NURSING CARE HOUSING.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE (see "Hotel" definition).

SPECIAL CARE HOME (same limitations as for hospital).

STABLE, private as accessory - on lot of 20,000 square feet - 5,000 square feet of lot area per horse.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TAVERN, according to ZA 2007-5927 and Section 12.24 W. 1.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious, except rescue mission or temporary revival (increased yards required).

TRUCK GARDENING.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

UNIVERSITY - general academic instruction (increased yards required).

WINE BAR, according to ZA 2007-5927 and Section 12.24 W. 1.

WINE TASTING ESTABLISHMENT, according to ZA 2007-5927 and Section 12.24 W. 1.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

P AUTOMOBILE PARKING ZONE

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

BLOODMOBILE - maximum 72 hours.

CARNIVALS and RIDES, transient (not to exceed five consecutive days in any 30-day period - subject to the limitations of Section 12.22 A 7).

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (3).

FIRE STATION, performance standards according to Section 14.00 A 3.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HELICOPTER LANDINGS, infrequent (subject to the limitations of Section 12.22 A 6).

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, PUBLIC, performance standards, according to Section 14.00 A. 3.

MOBILE MEDICAL FACILITY - maximum 72 hours.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

PARKING AREA, public or private, including ingress or egress to adjoining property (improvements as required by Section 12.21 A. 6).

PARKING BUILDING, entirely below grade (railings and mechanical equipment 50 feet or more from A or R Zones may be 4 feet above grade).

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUMPKIN SALES - October 15 to 31 only.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE (subject to the provisions of Section 12.21 A. 18).

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, identification and directional (as provided in Section 12.12.1. A. 3).

SIGN or CANOPY attached to building in C Zone may project 15 feet into P Zone if at least 8 feet above grade.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

PB PARKING BUILDING ZONE

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

BLOODMOBILE - maximum 72 hours.

CARNIVALS and RIDES, transient (not to exceed five consecutive days in any 30-day period - subject to the limitations of Section 12.22 A 7).

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (3).

FIRE STATION, performance standards according to Section 14.00 A 3.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HELICOPTER LANDINGS, infrequent (subject to the limitations of Section 12.22 A 6).

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, PUBLIC, performance standards, according to Section 14.00 A. 3.

MOBILE MEDICAL FACILITY - maximum 72 hours.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

PARKING AREA, public or private, including ingress or egress to adjoining property (improvements as required by Section 12.21 A. 6).

PARKING BUILDING (subject to the provisions of Section 12.12.1.5 A).

PARKING BUILDING, entirely below grade (railings and mechanical equipment 50 feet or more from A or R Zones may be 4 feet above grade).

PARKING GARAGE incidental business limited to automobile services - not above ground floor - no auto repair or washing (see Section 12.12.1.5 A 3 for limitations).

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUMPKIN SALES - October 15 to 31 only.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE (subject to the provisions of Section 12.21 A. 18).

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGN or CANOPY attached to building in C Zone may project 15 feet into P Zone if at least 8 feet above grade.

SIGNS, identification and directional (as provided in Section 12.12.1. A. 3).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

CR LIMITED COMMERCIAL ZONE

ACCESSORY BUILDINGS, including storage garages when located on the same lot.

ACCESSORY USES.

ACUPRESSURIST's OFFICE.

ACUPUNCTURIST'S OFFICE.

ALZHEIMER'S / DEMENTIA CARE HOUSING.

APARTMENT HOUSE (subject to the requirements of the R4 Zone).

ARCHITECT'S OFFICE.

ARENA, according to Section 12.24 U. 2.

ART SCHOOL.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BANK.

BANQUET HALL.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BINGO (subject to the provisions of Section 12.21 A. 13).

BLOODMOBILE - maximum 72 hours.

BOARDING HOUSE (subject to the requirements of the R4 Zone).

BROKER (stocks, bonds, or real estate).

BUSINESS COLLEGE (same limitations as Professional or Scientific School).

CAFÉ.

CAFETERIA (same limitations as Restaurant).

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHARTER SCHOOL.

CHILD CARE FACILITY.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH (except Rescue Mission or Temporary Revival).

CLUB, private, nonprofit.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COFFEE SHOP (same limitations as Restaurant).

COLLEGE, professional or scientific.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY CENTER, operated by philanthropic organization.

COMMUNITY FACILITIES (as defined in Section 13.09 B. 3).

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COUNSELING and REFERRAL FACILITY.

CREDIT ASSOCIATION or UNION - no repossessed articles to be stored on premises.

CULTURAL CENTER, owned and operated by a governmental agency or nonprofit organization.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DETECTIVE or POLICE AGENCY, private.

DOCTOR'S or DENTIST'S OFFICE.

DWELLING, group (subject to the requirements of the R4 Zone).

DWELLING, multiple (subject to the requirements of the R4 Zone).

DWELLING, one-family (subject to the requirements of the R4 Zone).

DWELLING, two-family (subject to the requirements of the R4 Zone).

EDUCATIONAL INSTITUTION (see definition).

ELDERCARE FACILITY.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ENGINEERING OFFICE - no laboratory or shop.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (2).

FINANCIAL INSTITUTION.

FIRE STATION, performance standards according to Section 14.00 A 3.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPICE, including philanthropic.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure - no portion of structure closer than 500 feet to an A or R Zone.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (within 500 feet of an A or R Zone), according to Section 12.24 W. 24. (a).

HOUSE OF WORSHIP (except Rescue Mission or Temporary Revival).

INSURANCE AGENCY or office, or company.

INTELLIGENCE AGENCY or office, private.

JOINT LIVING / WORK QUARTERS FOR ARTISTS AND ARTISANS, according to Section 12.24 X. 13.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, nonprofit.

LIBRARY, public.

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOAN OFFICE - no used or repossessed articles to be stored on the premises.

LODGE, private, nonprofit.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MESSENGER OFFICE.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MOBILE MEDICAL FACILITY - maximum 72 hours.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE FILM or TELEVISION COMPUTER DESIGN, COMPUTER GRAPHICS, or ANIMATION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SET and PROP PRODUCTION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SOUND LAB, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION TAPE EDITING, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION VIDEO and AUDIO PROCESSING, according to Section 12.24 X. 23.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSEUM, nonprofit.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL.

OFFICE BUILDING.

OFFICE, business or professional.

OFFICE, corporate headquarters.

PARK or PLAYGROUND (outdoor open space) - operated by governmental agency or philanthropic organization.

PARKING AREA, public (improvements as required by Section 12.21 A. 6).

PHARMACY, prescription - within office building - all entrances from inside - no outside advertising - limited hours.

PHILANTHROPIC INSTITUTION.

POLICE STATION, performance standards, according to Section

14.00 A. 3.

PRIVATE DETECTIVE AGENCY.

PRIVATE SCHOOL, elementary, middle, or high.

PROFESSIONAL OFFICE.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

REAL ESTATE OFFICE.

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

RESTAURANT, limited, within permitted office building - all entrances inside of building - limited hours - no entertainment or dancing - for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14.

ROOMING HOUSE (subject to the requirements of the R4 Zone).

SANITARIUM, according to Section 12.24 U. 12.

SAVINGS and LOAN ASSOCIATION

SCHOOL, art (same limitations as for Professional or Scientific School).

SCHOOL, elementary, middle, or high.

SCHOOL, private.

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, professional or scientific - classroom or lecture instruction only - not including dancing school, music school, trade school, nor any school specializing in manual training, shop work or in the repair or maintenance of machinery or mechanical equipment.

SCHOOL, public.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECURITY SERVICE.

SERVANT'S QUARTERS, as accessory use.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS, identification (as provided in Section 12.12.2 A. 6, also see Building Code for specific regulations).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious (except rescue mission or temporary revival).

THRIFT and LOAN COMPANY.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRAVEL AGENCY.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

UNIVERSITY.

C1 LIMITED COMMERCIAL ZONE

Retail Stores Selling New Merchandise Exclusively and Conducted Wholly within an Enclosed Building.
On-Site Signs Only - as an Incident to Such Business, Not More than Five Employees May be Engaged in Production or Servicing Activities.

NOTE: All retail stores, shops or businesses must sell new products only and shall be limited to less than 100,000 square feet of floor area.

ACCESSORY BUILDINGS, including storage garages when located on the same lot.

ACCESSORY USES.

ACUPRESSURIST's OFFICE.

ACUPUNCTURIST'S OFFICE.

ALZHEIMER'S / DEMENTIA CARE HOUSING.

APARTMENT HOUSE (subject to the requirements of the R4 Zone).
ARCHITECT'S OFFICE.

ARENA, according to Section 12.24 U. 2.

ART SCHOOL.

ART STORE.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BAIL BOND BROKER.

BAKERY GOODS STORE.

BANK.

BANQUET HALL.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BARBER SHOP.

BEAUTY SHOP or PARLOR.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BINGO (subject to the provisions of Section 12.21 A. 13).

BLOODMOBILE - maximum 72 hours.

BOARDING HOME for aged, with special care, philanthropic (increased yards required).

BOARDING HOUSE (subject to the requirements of the R4 Zone).

BOARDING HOUSE for AGED, with special care.

BOOK STORE, new.

BRIDGE CLUB.

BROKER (stocks, bonds, or real estate).

BUSINESS COLLEGE (same limitations as Professional or Scientific School).

BUTCHER SHOP (no slaughtering).

CAFE - no dancing or entertainment - for provisions concerning alcoholic beverages (see Section 12.21 A. 10 and 14).

CAFETERIA (for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14).

CAMERA SHOP.

CANDY STORE.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, new.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHARTER SCHOOL.

CHILD CARE FACILITY.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CLINIC, medical or dental - no animal clinic, no contagious, mental or drug or liquor addict cases.

CLOTHING ALTERATIONS SHOP.

CLOTHES CLEANING ESTABLISHMENT (non-flammable cleaning fluid only)

CLOTHING STORE, new.

CLUB, private, nonprofit.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COFFEE SHOP (same limitations as Restaurant).

COLLEGE, professional or scientific.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental agency.

COMMUNITY CENTER, operated by philanthropic organization.

COMMUNITY FACILITIES (as defined in Section 13.09 B. 3).

COMMUNITY GARDEN.

COMPUTER GRAPHICS STUDIO.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

COMPUTER STORE.

CONFECTIONARY STORE.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETOLOGICAL ESTABLISHMENT.

COUNSELING and REFERRAL FACILITY.

CREDIT ASSOCIATION or UNION - no repossessed articles to be stored on premises.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CULTURAL CENTER, owned and operated by a governmental agency or nonprofit organization.

DAIRY PRODUCTS STORE.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DELICATESSEN (for provisions relating to service of alcoholic beverages, see Section 12.21 A. 10, packaged alcoholic beverage sales require conditional use).

DENTAL CLINIC.

DETECTIVE or POLICE AGENCY, private.

DOCTOR'S or DENTIST'S OFFICE.

DOUGHNUT SHOP.

DRESS SHOP.

DRESSMAKING SHOP.

DRIVE-IN THEATER, according to Section 12.24 W. 16.

DRIVE-THROUGH FAST FOOD RESTAURANT, according to Section 12.24 W. 17.

DRUG STORE (alcoholic beverage sales require conditional use).

DRY CLEANERS, off premises.

DRY CLEANERS, self-service - non-flammable liquid in automatic machines.

DRY GOODS STORE.

DWELLING, group (subject to the requirements of the R4 Zone).

DWELLING, multiple (subject to the requirements of the R4 Zone).

DWELLING, one-family (subject to the requirements of the R4 Zone).

DWELLING, two-family (subject to the requirements of the R4 Zone).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELDERCARE FACILITY.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRICAL APPLIANCE STORE.

ELECTRONICS STORE.

ENGINEERING OFFICE - no laboratory or shop.

FABRIC STORE.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (2).

FINANCIAL INSTITUTION.

FIRE STATION, performance standards according to Section 14.00 A 3.

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

FISH MARKET.

FLORIST.

FLOWER SHOP.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNAL ASSOCIATION.

FURNITURE STORE, new.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GROCERY STORE (alcoholic beverage sales require conditional use).

HAIR DRESSER.

HARDWARE STORE, new.

HAT MAKING SHOP.

HELIPORT, incidental to a Hospital, according to Section 12.24 W. 23.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME for the AGED, with special care.

HOSPICE, including philanthropic.

HOSPITAL - no animal hospitals, or contagious, mental or drug or liquor addict cases (also see Zone R5).

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure - no portion of structure closer than 500 feet to an A or R Zone.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (within 500 feet of an A or R Zone), according to Section 12.24 W. 24. (a).

ICE CREAM PARLOR.

INSURANCE AGENCY or office, or company.

INTELLIGENCE AGENCY or office, private.

JEWELRY STORE.

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS (see Section 12.13 A. 2. (a). (27)).

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LAUNDROMAT, self service (same limitations as for Dry Cleaners, self-service).

LAUNDRY.

LIBRARY, public, nonprofit, or for profit (also see Zone R4).

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOAN OFFICE (no used or repossessed articles to be stored on premises).

LODGE, private, nonprofit.

LODGE.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MANICURE PARLOR.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

MESSENGER OFFICE.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MILLINERY SHOP.

MOBILE MEDICAL FACILITY - maximum 72 hours.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTEL or MOTOR LODGE (same limitations as Hotels).

MOTION PICTURE FILM or TELEVISION COMPUTER DESIGN, COMPUTER GRAPHICS, or ANIMATION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SET and PROP PRODUCTION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SOUND LAB, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION TAPE EDITING, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION VIDEO and AUDIO PROCESSING, according to Section 12.24 X. 23.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MUSIC STORE.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE - (no printing or distribution).

NEWSSTAND.

NOTIONS STORE.

NOVELTIES STORE (only those items not regulated by Section 12.70 of the Municipal Code).

NURSERY SCHOOL.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSING HOME (same limitations as for Hospital).

OFFICE BUILDING.

OFFICE, business or professional.

OFFICE, corporate headquarters.

ORPHANAGE.

ORTHOPEDIC APPLIANCE STORE.

OUTDOOR OPEN SALES, according to Section 12.24 W. 42. (a).

PAINT STORE.

PARK or PLAYGROUND (outdoor open space) - operated by government agency or philanthropic organization.

PARKING AREA, public.

PHARMACY, prescription - within office building - all entrances from inside - no outside advertising - limited hours.

PHILANTHROPIC INSTITUTION.

PHONOGRAPH RECORD STORE, new.

PHOTOGRAPHER.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY MARKET, dressed - no live poultry.

PRIVATE DETECTIVE AGENCY.

PRIVATE SCHOOL, elementary, middle, or high.

PRODUCE MARKET.

PROFESSIONAL OFFICE.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RADIO and TELEVISION STORE.

REAL ESTATE OFFICE.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE (subject to the provisions of Section 12.21 A. 18).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

RELIGIOUS ASSOCIATION - no church or house of worship.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

REST HOME, convalescent (same limitations as for Hospital).

RESTAURANT - no dancing or entertainment or drive-thru service (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14).

ROOMING HOUSE (subject to the requirements of the R4 Zone).

SANITARIUM (same limitations as for Hospital).

SAVINGS and LOAN ASSOCIATION

SCHOOL, art (same limitations as for Professional or Scientific School).

SCHOOL, professional or scientific - classroom or lecture instruction only - not including dancing school, music school, trade school, nor any school specializing in manual training, shop work or in the repair or maintenance of machinery or mechanical equipment.

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SCHOOL, public.

SCIENTIFIC INSTRUMENT STORE.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECURITY SERVICE.

SERVANT'S QUARTERS, as accessory use.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SHOE REPAIR SHOP.

SHOE STORE.

SIGNS, identification (as provided in Section 12.12.2 A. 6, also see Building Code for specific regulations).
SKILLED NURSING CARE HOUSING.

SODA FOUNTAIN.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SPECIAL CARE HOME, including philanthropic (same limitations as for Hospital).

SPORTING GOODS STORE.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STATIONERY STORE.

STEREO EQUIPMENT STORE.

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

TAILOR SHOP.

TANNING SALON.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious (except rescue mission or temporary revival).

THRIFT and LOAN COMPANY.

TICKET AGENCY or BROKER.

TOBACCO SHOP.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRAVEL AGENCY.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

UNIVERSITY.

WALLPAPER STORE.

WATER (DRINKING) STORE.

WEARING APPAREL STORE (new merchandise only).

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

YARN SHOP.

C1.5 LIMITED COMMERCIAL ZONE

Cross (+) indicates that all merchandise is sold at retail only and is new, except merchandise which is sold incidental to the operation of a permitted repair shop; that all activities, including storage, are conducted wholly within an enclosed building; that all products produced, whether primary or incidental, are sold on the premises; and that not more than five persons are engaged in such production or in servicing of materials.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area.

ACCESSORY BUILDINGS, including storage garages when located on the same lot.

ACCESSORY USES.

ACUPRESSURIST's OFFICE.

ACUPUNCTURIST'S OFFICE.

ADDING MACHINE REPAIR+.

ADDRESSOGRAPH SERVICE+.

ADVERTISING STUDIO.

AIR CONDITIONING EQUIPMENT SERVICE+.

ALZHEIMER'S / DEMENTIA CARE HOUSING.

ANTIQUE STORE.

APARTMENT HOUSE (subject to the requirements of the R4 Zone).

APPLIANCE REPAIR+, household.

AQUARIUM+.

ARCHITECT'S OFFICE.

ARENA, according to Section 12.24 U. 2.

ART GALLERY.

ART SCHOOL.

ART STORE.

AUDITORIUM+ - maximum seating capacity 3,000.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

AUTOMOTIVE FUELING and SERVICE STATION, according to Section 12.24 W. 2.

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BABY GYM (see Health Club).

BAIL BOND BROKER.

BAKERY GOODS STORE.

BANK.

BANQUET HALL.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BARBER SHOP.

BATH+, Turkish and the like.

BEAUTY SHOP or PARLOR.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BINGO (subject to the provisions of Article 4.5 of Chapter IV of this Code).

BLOODMOBILE - maximum 72 hours.

BLUEPRINTING+.

BOARDING HOME for aged, with special care, philanthropic (increased yards required).

BOARDING HOUSE (subject to the requirements of the R4 Zone).

BOARDING HOUSE for AGED, with special care.

BOOK STORE, new.

BOOK STORE, used.

BRIDGE CLUB.

BROADCASTING STUDIO+ - no transmitting towers.

BROKER (stocks, bonds, or real estate).

BUILDING MATERIALS RETAIL STORE+, rental.

BURGLAR ALARM BUSINESS*.

BUSINESS COLLEGE (same limitations as Professional or Scientific School).

BUTCHER SHOP (no slaughtering).

CAFE - no dancing or entertainment - for provisions concerning alcoholic beverages (see Section 12.21 A. 10 and 14).

CAFETERIA (for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14).

CALCULATOR REPAIR+.

CAMERA REPAIR+.

CAMERA SHOP.

CANDY STORE.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, new.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHARTER SCHOOL.

CHILD CARE FACILITY.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CLINIC, medical or dental - no animal clinic, no contagious, mental or drug or liquor addict cases.

CLOTHING ALTERATIONS SHOP.

CLOTHES CLEANING ESTABLISHMENT (non-flammable cleaning fluid only)

CLOTHING STORE, new.

CLUB - operated as a commercial enterprise (also see Zones R5 and C1).

CLUB, private, nonprofit.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COFFEE SHOP (same limitations as Restaurant).

COLLECTIBLES SHOP.

COLLECTION AGENCY+ no storage of new or used materials.

COLLEGE, professional or scientific.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY, according to Section 12.24 W. 13.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER - operated by governmental agency, philanthropic organization, or private agency (also see Zone R4).

COMMUNITY FACILITIES (as defined in Section 13.09 B. 3).

COMMUNITY GARDEN.

COMPUTER GRAPHICS STUDIO.

COMPUTER REPAIR+.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

COMPUTER STORE.

CONCERT HALL, maximum seating capacity 3,000.

CONFECTIONARY STORE.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETOLOGICAL ESTABLISHMENT.

COUNSELING and REFERRAL FACILITY.

CREDIT ASSOCIATION or UNION - no repossessed articles to be stored on premises.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CROSSFIT, BOXING, or OTHER PHYSICAL EXERCISE STUDIO.

CULTURAL CENTER, for profit, government, or nonprofit.

DAIRY PRODUCTS STORE.

DAY CARE - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY, adults.

DELICATESSEN (for provisions relating to service of alcoholic beverages, see Section 12.21 A. 10, packaged alcoholic beverage sales require conditional use).

DENTAL CLINIC.

DEPARTMENT STORE+.

DETECTIVE or POLICE AGENCY, private.

DOCTOR'S or DENTIST'S OFFICE.

DORMITORY.

DOUGHNUT SHOP.

DRESS SHOP.

DRESSMAKING SHOP.

DRIVE-THROUGH FAST FOOD RESTAURANT, according to Section 12.24 W. 17.

DRUG STORE (alcoholic beverage sales require conditional use).

DRY CLEANERS, off premises.

DRY CLEANERS, self-service - non-flammable liquid in automatic machines.

DRY GOODS STORE.

DWELLING, group (subject to the requirements of the R4 Zone).

DWELLING, multiple (subject to the requirements of the R4 Zone).

DWELLING, one-family (subject to the requirements of the R4 Zone).

DWELLING, two-family (subject to the requirements of the R4 Zone).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELDERCARE FACILITY.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRICAL APPLIANCE STORE.

ELECTRONIC DEVICES REPAIR+, household.

ELECTRONICS STORE.

EMPLOYMENT AGENCY or BUREAU.

ENGINEERING OFFICE - no laboratory or shop.

EXHIBITS+, commercial or cultural.

FABRIC STORE.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (2).

FILM DEVELOPING / PRINTING MACHINES.

FINANCIAL INSTITUTION.

FIRE STATION, performance standards according to Section 14.00 A 3.

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

FISH MARKET.

FLORIST.

FLOWER SHOP.

FORTUNE TELLING, psychic counseling.

FOSTER CARE HOME, occupied by a total of five or six children, according to Section 12.24 X. 9.

FRATERNAL ASSOCIATION.

FRATERNITY HOUSE.

FROZEN FOOD STORE+.

FURNITURE STORE, new.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP.

GLASS or MIRROR STORE+.

GOLF COURSE or CLUB - no miniature or pitch and putt courses, golf driving tees or ranges, and similar golf uses.

GOLF COURSE, according to Section 12.24 U. 8.

GOLF COURSE, miniature, according to Section 12.24 W. 26.

GOLF COURSE, pitch and putt, according to Section 12.24 W. 26.

GOLF DRIVING RANGE, according to Section 12.24 W. 26.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GROCERY STORE (alcoholic beverage sales require conditional use).

GYMNASIUM+.

HAIR DRESSER.

HARDWARE STORE, new.

HAT MAKING SHOP.

HEALTH CLUB+.

HELICOPTER LANDINGS, infrequent (see Section 12.22 A 6 for limitations).

HELIPORT, incidental to a Hospital, according to Section 12.24 W. 23.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOME for the AGED, with special care.

HOSPICE, including philanthropic.

HOSPITAL - no animal hospitals, or contagious, mental or drug or liquor addict cases (also see Zone R5).

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure - no portion of structure closer than 500 feet to an A or R Zone.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (within 500 feet of an A or R Zone), according to Section 12.24 W. 24. (a).

HOUSEHOLD APPLIANCE REPAIR.

ICE CREAM PARLOR.

IMPORT-EXPORT BUSINESS+ - maximum 3,000 square feet of storage area.

INSURANCE AGENCY or office, or company.

INTELLIGENCE AGENCY or office, private.

INTERIOR DECORATING STORE+.

JEWELRY STORE.

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS (see Section 12.13 A. 2. (a). (27)).

JUKE BOX RENTAL or SALES, new or used.
KARATE STUDIO.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LAUNDROMAT, self service (same limitations as for Dry Cleaners, self-service).

LAUNDRY.

LAWN MOWER and RENOVATOR REPAIR+.

LIBRARY, public, nonprofit, or for profit (also see Zone R4).

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOAN OFFICE (no used or repossessed articles to be stored on premises).

LOCKSMITH SHOP+.

LODGE, operating as a commercial enterprise (also see Zones R5 and C1).

LODGE, private, nonprofit.

LODGE.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MAIL ORDER HOUSE+.

MANICURE PARLOR.

MARTIAL ARTS STUDIO.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT (no hardware).

MESSENGER OFFICE.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MILLINERY SHOP.

MIMEOGRAPHING SERVICE+.

MOBILE MEDICAL FACILITY - maximum 72 hours.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MODEL HOME, according to Section 12.24 X. 15.

MOTEL or MOTOR LODGE (same limitations as Hotels).

MOTION PICTURE FILM or TELEVISION COMPUTER DESIGN, COMPUTER GRAPHICS, or ANIMATION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SET and PROP PRODUCTION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SOUND LAB, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION TAPE EDITING, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION VIDEO and AUDIO PROCESSING, according to Section 12.24 X. 23.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MOTION PICTURE THEATER+.

MUSEUM+, for profit (also see Zone R4).

MUSIC STORE.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE - (no printing or distribution).

NEWSSTAND+.

NOTIONS STORE.

NOVELTIES STORE (only those items not regulated by Section 12.70 of the Municipal Code).

NURSERY SCHOOL.

NURSERY, plant, no retail sales, according to Section 12.24 W. 31.

NURSING HOME (same limitations as for Hospital).

OFFICE BUILDING.

OFFICE, business or professional.

OFFICE, corporate headquarters.

ORPHANAGE.

ORTHOPEDIC APPLIANCE STORE.

PAINT STORE.

PARK or PLAYGROUND (outdoor open space) - operated by governmental agency, philanthropic organization, or private agency (also see Zone R1).

PARKING AREA, public.

PARKING BUILDING (same requirements as PB Zone).
PHARMACY, prescription - within office building - all entrances from inside - no outside advertising - limited hours.

PHILANTHROPIC INSTITUTION.

PHILATELIC STORE.

PHONOGRAPH RECORD STORE, new.

PHOTOCOPYING+.

PHOTOGRAPHER.

PINBALL MACHINES RENTAL or SALES, new or used.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

POULTRY MARKET, dressed - no live poultry.

PRIVATE DETECTIVE AGENCY.

PRIVATE SCHOOL, elementary, middle, or high.

PRODUCE MARKET.

PROFESSIONAL OFFICE.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUMPKIN SALES - October 15 to 31 only.

RADIO and TELEVISION STORE.

REAL ESTATE OFFICE.

RECREATION AREA, commercial - picnic grounds, boating, tennis, etc. No amusement enterprises of the type listed under Section 12.14 A. 3.

RECREATION CENTER, operated by government agency, according to Section 14.00 A. 5.

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE (subject to the provisions of Section 12.21 A. 18).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

REDUCING SALON+.

RELIGIOUS ASSOCIATION - no church or house of worship.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

REST HOME, convalescent (same limitations as for Hospital).

RESTAURANT - no dancing or entertainment or drive-thru service (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14).

ROOMING HOUSE (subject to the requirements of the R4 Zone).

RUBBER or METAL STAMP STORE+.

SANITARIUM (same limitations as for Hospital).

SAVINGS and LOAN ASSOCIATION.

SCHOOL, art (same limitations as for Professional or Scientific School).

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, private, other than nursery, elementary, middle, or high, according to Section 12.24 U. 24. (c).

SCHOOL, professional or scientific - classroom or lecture instruction only - not including dancing school, music school, trade school, nor any school specializing in manual training, shop work or in the repair or maintenance of machinery or mechanical equipment.

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SCHOOL, public.

SCIENTIFIC INSTRUMENT STORE.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECURITY SERVICE.

SERVANT'S QUARTERS, as accessory use.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SHOE REPAIR SHOP.

SHOE SHINE STAND+.

SHOE STORE.

SHOWCASE THEATER+.

SIGNS, identification (as provided in Section 12.12.2 A. 6, also see Building Code for specific regulations).

SKILLED NURSING CARE HOUSING.

SODA FOUNTAIN.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE.

SOUND SCORE PRODUCTION+.

SPA.

SPECIAL CARE HOME, including philanthropic (same limitations as for Hospital).

SPINNING / CYCLING STUDIO.

SPORT CARDS STORE.

SPORTING GOODS STORE.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STAMP STORE (postage).

STATIONERY STORE.

STEREO EQUIPMENT STORE.

STUDIO+, except drama, dancing, music, motion, motion picture, or television (also see Zones C2, CM and M1).

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

SWIMMING POOL+, commercial.

TAILOR SHOP.

TANNING SALON.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TELEPHONE EXCHANGE+.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious (except rescue mission or temporary revival).

TENNIS COURTS, privately operated.

THEATER+.

THRIFT and LOAN COMPANY.

TICKET AGENCY or BROKER.

TOBACCO SHOP.

TRADING STAMP BUSINESS+.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRAVEL AGENCY.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

TYPEWRITER REPAIR+.

UNIVERSITY.

WALLPAPER STORE.

WATER (DRINKING) STORE.

WEARING APPAREL STORE (new merchandise only).

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

XEROXING.

YARN SHOP.

YOGA STUDIO.

C2 COMMERCIAL ZONE

An asterisk (*) indicates that the use includes the manufacturing, compounding, processing, assembling or treating of products, provided not more than five persons are engaged in such activities on the premises; that the products or services are sold principally at retail from the premises; that all operations, except the herein listed "open storage area," are conducted within a completely enclosed building and are not objectionable due to odor, dust, smoke noise, vibrations or other causes.

Cross (+) indicates that all merchandise is sold at retail only and is new, except merchandise which is sold incidental to the operation of a permitted repair shop; that all activities, including storage, are conducted wholly within an enclosed building; that all products produced, whether primary or incidental, are sold on the premises; and that not more than five persons are engaged in such production or in servicing of materials.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area.

ACCESSORY BUILDINGS, including storage garages when located on the same lot.

ACCESSORY USES, including open storage (subject to the limitations of Section 12.14 A).

ACUPRESSURIST's OFFICE*.

ACUPUNCTURIST'S OFFICE*.

ADDING MACHINE REPAIR+*.

ADDRESSOGRAPH SERVICE+*.

ADULT BOOKSTORE (subject to the provisions of Section 12.70).

ADULT CABARET (subject to the provisions of Section 12.70).

ADULT MOTEL (subject to the provisions of Section 12.70).

ADULT MOTION PICTURE THEATER (subject to the provisions of Section 12.70).

ADULT THEATER (subject to the provisions of Section 12.70).

ADVERTISING SIGNS, statuary or structures, on-site only (see Section 62.00 et. seq. of Los Angeles Municipal Code).

ADVERTISING STUDIO*.

AIR CONDITIONING EQUIPMENT SERVICE+*.

ALZHEIMER'S / DEMENTIA CARE HOUSING*.

AMBULANCE SERVICE.

ANIMATED CARTOON STUDIO* - no use of live subjects and no processing of motion picture film.

ANTIQUE STORE*.

APARTMENT HOUSE* (subject to the requirements of the R4 Zone).

APPAREL and ACCESSORIES SILKSCREENING, EMBROIDERY and OTHER IMPRINTING TECHNIQUES.

APPLIANCE RENTAL, household.

APPLIANCE REPAIR+*, household.

AQUARIUM+*.

ARCHERY RANGE.

ARCHITECT'S OFFICE*.

ARENA (same limitations as for Sports Arena).

ART GALLERY*.

ART SCHOOL (also see Zone CR).

ART STORE*.

ASTRONOMICAL OBSERVATORY or moonwatch station.

ATHLETIC FIELD.

AUCTION HOUSE or STORE.

AUDITORIUM+* - maximum seating capacity 3,000.

AUTO RIDE AMUSEMENT - no race track - 5 mph maximum speed - low tone hush mufflers required (see ZAI Case No. 1685).

AUTOMOBILE CLUB.

AUTOMOBILE DISPLAY ROOM.

AUTOMOBILE PARKING*, under the provisions of Section 12.21 A. 4.

AUTOMOBILE PARTS or ACCESSORIES SALES.

AUTOMOBILE RENTAL - repairs within building and distance requirements complying with Section 12.14 A 27 - car storage within building or in open area with improvements as required by Section 12.21 A. 6.

AUTOMOBILE SALES, new or used (improvements as required by Section 12.21 A. 6).

AUTOMOBILE STORAGE AREA - improvements as required for Automobile Sales Area - no open repairing - no activity included in definition of "automobile wrecking".

AUTOMOBILE STORAGE GARAGE (see Automobile Storage Area).

AUTOMOTIVE BODY and FENDER REPAIRING - retail only - in completely enclosed building (see Section 12.14 A. 27).

AUTOMOTIVE EXHAUST TEST STATION (same limitations as Automobile Storage Garage).

AUTOMOTIVE FUELING and SERVICE STATION or GASOLINE STATION - lubrication, mechanical adjustments, tube and tire repairing, battery service and hoists wholly within a building (see special regulations of Section 12.14 A. 6).

AUTOMOTIVE PAINTING - (retail only - distance and building enclosure requirements as required by Section 12.14 A. 27).

AUTOMOTIVE PAINTING.

AUTOMOTIVE REPAIR, including Glass Shop, Sound Shop (see Section 12.14 A. 27).

AUTOMOTIVE UPHOLSTERING (same limitations as for Automobile Storage Garage).

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

AWNING STORE* - no fabrication or assembly.

BABY GYM* (see Health Club).

BAIL BOND BROKER*.

BAKERY GOODS STORE*.

BAKERY*.

BANK*.

BANQUET HALL*.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BARBER COLLEGE.

BARBER SHOP*.

BASEBALL BATTING RANGE or CAGE.

BASEBALL FIELD.

BASEBALL STADIUM - maximum seating capacity 3,000 people.

BATH+*, Turkish and the like.

BATTERY SERVICE (see Automotive Fueling and Service Station).

BATTERY STORE*.

BEAUTY COLLEGE.

BEAUTY SHOP or PARLOR*.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BICYCLE RENTAL.

BICYCLE REPAIR SHOP.

BICYCLE SALES, new or used.

BILLIARD PARLOR (see Pool Hall).

BINGO* (subject to the provisions of Article 4.5 of Chapter IV of this Code).

BIRD STORE*.

BLOODMOBILE* - maximum 72 hours.

BLUEPRINTING+*.

BOARDING HOME for aged, with special care, philanthropic (increased yards required).

BOARDING HOUSE* (subject to the requirements of the R4 Zone).

BOARDING HOUSE for AGED*, with special care.

BOAT RENTAL or SALES (improvements as required by Section 12.21 A. 6 for open land area).

BOAT REPAIR, small (< 40' length, < 8'6" width, < 14' height).

BODY and FENDER REPAIRING, automobile - retail only - in completely enclosed building (see Section 12.14 A. 27).

BOOK STORE*, new.

BOOK STORE*, used.

BOOSTER PUMP or FLOW CONTROL STATION, for public utility pipeline.

BOWLING ALLEY - in completely enclosed building.

BOWLING on the GREEN - no use of ten pins or wooden, plastic or metal alleys.

BOXING ARENA - maximum seating capacity for 3,000 people.

BRIDGE CLUB*.

BROADCASTING STUDIO+* - no transmitting towers.

BROKER* (stocks, bonds, or real estate).

BUILDING MATERIALS RETAIL STORE+*, rental.

BURGLAR ALARM BUSINESS*.

BUS STATION.

BUSINESS COLLEGE (also see Zone CR).

BUTCHER SHOP* (no slaughtering).

CAFE, with entertainment other than dancing (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14)*.

CAFETERIA* (for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14).

CALCULATOR REPAIR+*.

CALIBRATION and REPAIR SERVICE SHOP, for precision instruments, gauges and small metal objects.

CAMERA REPAIR+*.

CAMERA SHOP*.

CANDY STORE*.

CAR PAINTING (see Automotive Painting).

CAR RENTAL (see Automobile Rental).

CAR REPAIRING (see Automotive Repair).

CAR SALES AREA (see Automobile Sales Area).

CAR UPHOLSTERING (same limitations as for Automobile Storage Garage).

CAR WASH - (with mechanical equipment, sound level performance standards and enclosures as required by Section 12.14 A. 6 and 9).

CARNIVALS and RIDES, transient.

CAROUSEL.

CARPENTER SHOP*.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES*, new.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, secondhand.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHARITABLE INSTITUTION.

CHARTER SCHOOL.

CHECK CASHING OFFICE.

CHILD CARE FACILITY*.

CHRISTMAS TREE and ORNAMENT SELLING* - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH (including temporary revival or rescue mission).

CIRCUS, transient.

CLINIC, medical or dental - no animal clinic (subject to the limitations of Section 12.21 D).

CLOTHING ALTERATIONS SHOP*.

CLOTHES CLEANING ESTABLISHMENT (non-flammable cleaning fluid only)

CLOTHING STORE, new*.

CLOTHING STORE*, secondhand (also see Zone C1).

CLUB* - operated as a commercial enterprise (also see Zones R5 and C1).

CLUB*, private, nonprofit.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COFFEE SHOP* (same limitations as Restaurant).

COLLECTIBLES SHOP*.

COLLECTION AGENCY+* no storage of new or used materials.

COLLEGE (also see Zones R4 and CR).

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY for cable television or radio service - maximum height of most 35 feet above ground level or 20 feet above roof of building, whichever is higher.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER* - operated by governmental agency, philanthropic organization, or private agency (also see Zone R4).

COMMUNITY FACILITIES (as defined in Section 13.09 B. 3).

COMMUNITY GARDEN*.

COMPRESSED NATURAL GAS AUTOMOTIVE REFUELING STATION - building and site enclosure requirements same as Automotive Fueling and Service Station, Section 12.14 A 6.

COMPUTER GRAPHICS STUDIO*.

COMPUTER REPAIR+*.

COMPUTER SERVER EQUIPMENT ROOM.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT* (no hardware).

COMPUTER STORE*.

CONCERT HALL*, maximum seating capacity 3,000.

CONFECTIONARY STORE.

CONTRACTOR'S ESTABLISHMENT* - painting, plastering, cement work, etc. - not over five vehicles of not more than 5,600 pounds, or places of mobile mechanical equipment, excluding passenger automobiles (also see Zone C1.5).

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETOLOGICAL ESTABLISHMENT*.

COUNSELING and REFERRAL FACILITY*.

CREDIT ASSOCIATION or UNION* - no repossessed articles to be stored on premises.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CROSSFIT, BOXING, or OTHER PHYSICAL EXERCISE STUDIO*.

CULTURAL CENTER*, for profit, government, or nonprofit.

CYBER CAFÉ – containing five or more computers or terminals, according to ZA 2003-2970 and Section 12.24 W. 34.

CYBER CAFÉ - containing four or fewer computers or terminals.

DAIRY PRODUCTS STORE*.

DANCE HALL, according to Section 12.24 W. 18. (a).

DANCE STUDIO or ACADEMY.

DAY CARE* - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DAY CARE FACILITY - dogs and cats only (in enclosed buildings, no overnight stays).

DAY CARE FACILITY*, adults.

DELICATESSEN* (for provisions relating to service of alcoholic beverages, see Section 12.21 A. 10, packaged alcoholic beverage sales require conditional use).

DENTAL CLINIC*.

DENTAL EQUIPMENT and SUPPLIES STORE, retail, with incidental servicing of equipment in completely enclosed building.

DENTAL LABORATORY.

DEPARTMENT STORE+*.

DESIGNING OFFICE or SHOP*, industrial or invention.

DETECTIVE or POLICE AGENCY*, private.

DIAPER SERVICE* - only five employees exclusive of pressing, office and delivery personnel.

DOCTOR'S or DENTIST'S OFFICE*.

DORMITORY*.

DOUGHNUT SHOP*.

DRAMA SCHOOL, college, or studio.

DRESS SHOP*.

DRESSING ROOMS and OFFICES ASSOCIATED with ADJACENT STUDIO or THEATER.

DRESSMAKING SHOP*.

DRIVE-THROUGH FAST FOOD RESTAURANT, according to Section 12.24 W. 17.

DRIVING SCHOOL.

DRUG STORE* (alcoholic beverage sales require conditional use).

DRY CLEANERS, on premises (subject to the limitations of Section 12.14 A. 38).

DRY CLEANERS*, self-service - non-flammable liquid in automatic machines.

DRY GOODS STORE*.

DWELLING*, group (subject to the requirements of the R4 Zone).

DWELLING*, multiple (subject to the requirements of the R4 Zone).

DWELLING*, one-family (subject to the requirements of the R4 Zone).

DWELLING*, two-family (subject to the requirements of the R4 Zone).

EDUCATIONAL INSTITUTION (also see Zones R4 and CR).

ELDERCARE FACILITY*.

ELECTRIC CAR CHARGING STATION*, in permitted parking lot.

ELECTRIC DISTRIBUTING SUBSTATION.

ELECTRIC MOTOR REPAIR* (same limitations as for Repair Shop).

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRICAL APPLIANCE STORE*.

ELECTRONIC DEVICES REPAIR+*, household.

ELECTRONICS STORE*.

EMPLOYMENT AGENCY or BUREAU*.

ENGINEERING OFFICE* - no laboratory or shop.

ENGRAVING* - limitations do not apply when incidental to printing or publishing establishments.

EQUINE SHOW - no stables - maximum seating capacity for 3,000 people.

ESCORT BUREAU.

EXHIBITS+*, commercial or cultural.

FABRIC STORE*.

FAIRGROUNDS, public.

FARM MACHINERY SALES - no repairing, overhauling or wrecking - no sale of used parts.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (2).

FEED STORE* - in completely enclosed building.

FERRIS WHEEL.

FILM and TAPE EDITING and MOTION PICTURE RECONSTRUCTION.

FILM DEVELOPING / PRINTING MACHINES*.

FILM EXCHANGE (no laboratory).

FINANCIAL INSTITUTION*.

FIRE STATION.

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

FISH MARKET*.

FLORIST*.

FLOWER SHOP*.

FOOT MASSAGE.

FOOTBALL STADIUM (maximum seating capacity for 3,000 people).

FORTUNE TELLING*, psychic counseling.

FRATERNAL ASSOCIATION*.

FRATERNITY HOUSE*.

FROZEN FOOD LOCKER RENTAL - to individuals (each locker limited to 7 cubic feet).

FROZEN FOOD STORE+*.

FUEL STORE (in completely enclosed building).

FUN HOUSE (in completely enclosed building).

FUNERAL PARLOR, according to Section 12.24 W. 29.

FUR CLEANING (same limitations as for Dry Cleaners).

FURNITURE CLEANING*.

FURNITURE STORE*, new.

GAME ARCADE (fewer than 5 machines).

GARAGE, parking (same limitations as for Parking Building).

GARDEN EQUIPMENT RENTAL (same limitations as for Rental Equipment Store).

GARDEN FURNITURE and landscape gardening supplies DISPLAY AREA (in connection with retail store on same premises).

GASOLINE STATION (same limitations as for Automotive Fueling and Service Station).

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP*.

GLASS or MIRROR STORE+*.

GOLF COURSE or CLUB* - no miniature or pitch and putt courses, golf driving tees or ranges, and similar golf uses.

GOLF COURSE, miniature or pitch and putt, and similar commercial golf uses.

GOLF DRIVING RANGE.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE.

GROCERY STORE* (alcoholic beverage sales require conditional use).

GUNSMITH SHOP* (no sales).

GYMNASIUM.

HAIR DRESSER*.

HANDYMAN SHOP*.

HARDWARE STORE*, new.

HAT MAKING SHOP*.

HEALTH CLUB+*.

HELICOPTER LANDINGS*, infrequent (see Section 12.22 A 6 for limitations).

HELIPORT, incidental to a Hospital, according to Section 12.24 W. 23.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOBBYIST'S RENTAL SHOP (see ZAI Case No. 1223 for conditions and limitations).

HOME for the AGED, special care hotel (also see Zone R4).

HOSPICE*, including philanthropic.

HOSPITAL, including a hospital for contagious, mental, liquor, or drug addict cases - no animal hospital (also see Zones R5 and C1 - subject to the limitations of Section 12.21 D).

HOSTESS DANCE HALL, according to Section 12.24 W. 18. (b).

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure - no portion of structure closer than 500 feet to an A or R Zone.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (within 500 feet of an A or R Zone), according to Section 12.24 W. 24. (a).

HOUSE of WORSHIP (including Rescue Mission or Temporary Revival).

HOUSEHOLD MOVING RENTAL TRUCKS and TRAILERS, RENTAL, STORAGE, or STORAGE for RENTAL PURPOSES, including those which exceed a registered net weight of 5,600 pounds, according to Section 12.24 W. 39.

HYDROPONIC AGRICULTURE ENTERPRISE.

ICE CREAM PARLOR*.

ICE SKATING RINK - in completely enclosed building.

ICE STORAGE HOUSE - maximum capacity 5 tons.

IMPORT-EXPORT BUSINESS+* - maximum 3,000 square feet of storage area.

INSURANCE AGENCY* or office, or company.

INTELLIGENCE AGENCY* or office, private.

INTERIOR DECORATING SHOP*.

INTERIOR DECORATING STORE+*.

JEWELRY STORE*.

JEWELRY STORE, secondhand.

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS* (see Section 12.13 A. 2. (a). (27)).

JUKE BOX RENTAL or SALES*, new or used.

KARAOKE ESTABLISHMENT (see Nightclub).

KARATE STUDIO*.

LABOR UNION OFFICE.

LABORATORY, medical or dental.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LAUNDROMAT*, self service (same limitations as for Dry Cleaners, self-service).

LAUNDRY (subject to the limitations of Section 12.14 A. 38).

LAWN MOWER and RENOVATOR RENTAL (same limitations as for Rental Equipment Store).

LAWN MOWER and RENOVATOR REPAIR+*.

LIBRARY*, public, nonprofit, or for profit (also see Zone R4).

LIMOUSINE RENTAL.

LINEN SUPPLY BUSINESS* (same limitations as for Dry Cleaners).

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LITHOGRAPHING.

LOAN OFFICE - (no used or repossessed articles to be stored on premises).

LOCKER RENTAL - for individual's frozen food - each locker limited to 7 cubic feet capacity.

LOCKSMITH SHOP+*.

LODGE*.

LODGE, operating as a commercial enterprise (also see Zones R5 and C1)*.

LODGE, private, nonprofit*.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

LUMBER STORE.

MAGAZINE BUSINESS, secondhand.

MAIL ORDER HOUSE+*.

MANICURE PARLOR*.

MARINE OIL SERVICE STATION.

MARTIAL ARTS STUDIO*.

MASSAGE PARLOR, adult entertainment business, according to Section 12.24 W. 18. (c).

MASSAGE PARLOR, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist, according to ZA 2010-2714.

MASSEUR or MASSEUSE (subject to the provisions of Section 12.14 A. 37).

MATTRESS SHOP* - repairing only - no renovating.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET*.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT* (no hardware).

MEDICAL CLINIC (same limitations as for Clinic, medical or dental).

MEDICAL LABORATORY.

MENTAL HOSPITAL.

MERRY-GO-ROUND.

MESSENGER OFFICE*.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MILLINERY SHOP*.

MIMEOGRAPHING SERVICE+*.

MISSION, rescue.

MOBILE MEDICAL FACILITY* - maximum 72 hours.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MOBILE HOME SALES (new or used) and/or RENTAL AREA (same limitations as for Trailer Sales and/or Rental Area).

MODEL HOME, according to Section 12.24 X. 15.

MONUMENTS and TOMBSTONES, retail sales.

MORTUARY or MORTUARY SCHOOL, according to Section 12.24 W. 29.

MOTION PICTURE FILM or TELEVISION COMPUTER DESIGN, COMPUTER GRAPHICS, or ANIMATION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SET and PROP PRODUCTION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SOUND LAB, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION TAPE EDITING.

MOTION PICTURE FILM or TELEVISION TAPE RECONSTRUCTION.

MOTION PICTURE FILM or TELEVISION VIDEO and AUDIO PROCESSING, according to Section 12.24 X. 23.

MOTION PICTURE FILM RENTAL.

MOTION PICTURE PRODUCTION (no outdoor sets).

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MOTION PICTURE THEATER.

MOTORCYCLE or MOTOR SCOOTER RENTAL.

MOTORCYCLE or MOTOR SCOOTER REPAIR SHOP (same limitations as for Automotive Repair).

MOTORCYCLE or MOTOR SCOOTER SALES, new or used.

MOTORCYCLE STORAGE GARAGE.

MUSEUM+*, for profit (also see Zone R4).

MUSHROOM GROWING - completely within a building - use of commercial fertilizers okay, but no manure.

MUSIC SCHOOL or STUDIO.

MUSIC STORE*.

NATURAL GAS (compressed) REFUELING STATION.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE* - (no printing or distribution).

NEWSSTAND+*.

NIGHTCLUB (for provisions relating to alcoholic beverages, see Section 12.24 W. 1).

NOTIONS STORE*.

NOVELTIES STORE* (only those items not regulated by Section 12.70 of the Municipal Code).

NUMISMATIC STORE.

NURSERY SCHOOL*.

NURSERY, plant.

NURSING HOME (same limitations as for Hospital).

OBSERVATORY, astronomical, astrophysical, meteorological, moon-watch, and satellite.

OFFICE BUILDING*.

OFFICE*, business or professional.

OFFICE*, corporate headquarters.

OPEN-STORAGE AREA - not more than 3,000 square feet - on rear half of lot - strictly incidental to permitted commercial use of a building on front portion of same lot - area to be completely enclosed by a solid wall or fence at least 6 feet in height - no storage higher than the enclosure - no storage of power driven excavating or road building equipment - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

OPTICIAN.

ORPHANAGE*.

ORTHOPEDIC APPLIANCE STORE*.

OUTDOOR OPEN SALES, according to Section 12.24 W. 42. (a).

PAINT STORE*.

PARCEL DELIVERY SERVICE, branch - all storage, loading and unloading conducted in completely enclosed building.

PARK or PLAYGROUND (outdoor open space) - operated by government agency, philanthropic organization, or private agency.

PARKING AREA, public*.

PARKING BUILDING (subject to the provisions of Section 12.12.1.5 A).

PARKING GARAGE (same limitations as for Parking Building).

PAWNSHOP, according to Section 12.24 W. 33.

PENNY ARCADE, containing 4 or fewer coin, slug, or electronic controlled game machines, in completely enclosed building containing four or fewer machines (see also Section 12.24 W. 34).

PENNY ARCADE, containing 5 or more coin, slug, or electronic controlled game machines, according to Section 12.24 W. 34.

PEST or INSECT CONTROL BUSINESS (same limitations as for Contractor's Establishment).

PET GROOMING.

PET STORE* - including keeping or sale of domestic or wild animals other than those wild animals specified in the definition of accessory uses in Section 12.03 (Animal Regulation permit required).

PHARMACY*, prescription - within office building - all entrances from inside - no outside advertising - limited hours.

PHILANTHROPIC INSTITUTION*.

PHILATELIC STORE.

PHONOGRAPH RECORD STORE*, new.

PHONOGRAPH RECORD STORE, secondhand.

PHOTO DEVELOPING and FINISHING.

PHOTOCOPYING+*.

PHOTO-ENGRAVING* - limitations do not apply when incidental to printing or publishing establishment.

PHOTOGRAPHER*.

PINBALL MACHINES RENTAL or SALES*, new or used.

PLASTIC PLATE EMBOSSING.

PLUMBING SHOP*.

POLICE STATION.

PONY RIDING RING - no stables.

POOL HALL (see restrictions Section 12.14 A. 3).

POST OFFICE.

POTTERY and CERAMICS DISPLAY AREA - in connection with retail store on same premises.

POTTERY and CERAMICS STORE*, retail (see ZAI 2339 for limitations).

POULTRY MARKET*, dressed - no live poultry.

PRINTING ESTABLISHMENT.

PRIVATE DETECTIVE AGENCY*.

PRIVATE SCHOOL, elementary, middle, or high.

PRODUCE MARKET*.

PROFESSIONAL OFFICE*.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUBLISHING ESTABLISHMENT.

PUMPKIN SALES* - October 15 to 31 only.

QUALITY CONTROL LABORATORY as accessory to headquarters or branch offices of a manufacturer, subject to limitations under ZAI 2012.

RADIO and TELEVISION REPAIR SHOP*.

RADIO and TELEVISION STORE*.

RADIO BROADCASTING STUDIO - no transmitting towers.

REAL ESTATE OFFICE*.

RECORDING STUDIO - no manufacturing or treating of records, CDs, DVDs, cassette, or video tapes.

RECREATION AREA*, commercial - picnic grounds, boating, tennis, etc. No amusement enterprises of the type listed under Section 12.14 A. 3.

RECREATION BUILDING.

RECREATION CENTER, owned and operated by governmental agency.

RECREATIONAL VEHICLE RENTAL.

RECREATIONAL VEHICLE SALES, new or used.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE* (subject to the provisions of Section 12.21 A. 18).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

REDUCING SALON+*.

REFRIGERATION EQUIPMENT* INSTALLATION or SERVICE.

RELIGIOUS ASSOCIATION* - no church or house of worship.

RENTAL EQUIPMENT STORE, retail - with incidental open display and wall or fence enclosed storage, subject to limitations set forth in ZAI 1263 - excluding concrete mixers over one-half sack capacity and heavy contractor's equipment - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

REPAIR GARAGE (same limitations as for Automotive Repair).

REPAIR SHOP*, furniture, household appliances, electric motors, business machines, liquid measuring boxes, vending machines and the like.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

REST HOME, convalescent (see Hospital).

RESTAURANT* - no dancing or entertainment or drive-thru service (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14).

ROLLER SKATING RINK - in completely enclosed building.

ROOMING HOUSE* (subject to the requirements of the R4 Zone).

RUBBER or METAL STAMP STORE+*.

SAFE and VAULT REPAIRING and SERVICING*.

SANITARIUM* (same limitations as for Hospital).

SAVINGS and LOAN ASSOCIATION*.

SCENIC RAILWAY.

SCHOOL*, art (same limitations as for Professional or Scientific School).

SCHOOL, dance.

SCHOOL, drama.

SCHOOL, music.

SCHOOL, private - operated for profit or as a commercial enterprise.

SCHOOL*, professional or scientific - classroom or lecture instruction only - not including dancing school, music school, trade school, nor any school specializing in manual training, shop work or in the repair or maintenance of machinery or mechanical equipment.

SCHOOL, professional or scientific.

SCHOOL, public, elementary, middle, or high.

SCHOOL, trade, technical, or occupational - no noise, vibration, odor, etc.

SCIENTIFIC INSTRUMENT STORE*.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECONDHAND STORE (except pawnshops) - everything other than incidental storage in a completely enclosed building.

SECURITY SERVICE*.

SERVANT'S QUARTERS*, as accessory use.

SEXUAL ENCOUNTER ESTABLISHMENT, according to Section 12.24 W. 18. (c).

SHARPENING of GRINDING TOOLS or CUTLERY*.

SHEET METAL SHOP*.

SHELTER for the HOMELESS (maximum 30 persons; with conditions).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).
SHELTER for the HOMELESS*, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SHOE REPAIR SHOP*.

SHOE SHINE STAND+*.

SHOE STORE*.

SHOOTING GALLERY - in completely enclosed building.

SHOWCASE THEATER+*.

SIDE SHOW, circus - transient in character.

SIGN PAINTING* (see ZAI 1424 for limitations).

SIGNS, advertising, on-site only (see Building Code for regulations.).

SIGNS*, identification (as provided in Section 12.12.2 A. 6, also see Building Code for specific regulations).

SKATEBOARD TRACK - in completely enclosed building.

SKATING RINK or SKATE PARK (indoor) - in completely enclosed building.

SKILLED NURSING CARE HOUSING*.

SLOT-CAR RACING - in completely enclosed building.

SODA FOUNTAIN*.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE*.

SOUND SCORE PRODUCTION+*.

SPA*.

SPECIAL CARE HOME*, including philanthropic (same limitations as for Hospital).

SPINNING / CYCLING STUDIO*.

SPORT CARDS STORE*.

SPORTING GOODS STORE*.

SPORTS ARENA or STADIUM - maximum seating capacity for 3,000 people - no auto, motorcycle, dog or horse races or rodeos.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STAMP STORE* (postage).

STATION, bus or train - no storage of vehicles - see Transportation Yard, Zone M1.

STATIONERY STORE*.

STEREO EQUIPMENT STORE*.

STORAGE BUILDING for HOUSEHOLD GOODS, including truck rentals, according to Section 12.24 W. 50.

STORAGE BUILDING for retail merchandise, with office - maximum 4,500 square feet of space used for storage - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

STORAGE, incidental (also see Open Storage Area) - no accessory uses for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

STRIPTEASE SHOW in completely enclosed building (subject to the provisions of Section 12.70).

STUDIO, dance, drama, motion, and music.

STUDIO+*, except drama, dancing, music, motion, motion picture, or television (also see Zones C2, CM and M1).

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

SWIMMING POOL+*, commercial.

TAILOR SHOP*.

TANNING SALON*.

TATTOO STUDIO.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TAXICAB BUSINESS - incidental repairs in enclosed building.

TAXIDERMIST*.

TELEPHONE EXCHANGE+*.

TELEVISION PRODUCTION (no outdoor sets).

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious (except rescue mission or temporary revival).

TEMPORARY STORAGE of ABANDONED, PARTIALLY DISMANTLED, OBSOLETE, or WRECKED AUTOMOBILES (not including wrecking, dismantling, storage, or sale of used parts), according to Section 12.24 W. 48.

TENNIS COURTS*, privately operated.

TERMITE CONTROL BUSINESS (same limitations as for Contractor's Establishment).

THEATER+*.

THRIFT and LOAN COMPANY*.

TICKET AGENCY or BROKER*.

TINSMITH SHOP*.

TIRE SHOP* - including retreading or recapping.

TOBACCO SHOP*.

TOMBSTONES, retail sales.

TOW TRUCK DISPATCHING.

TOWEL SUPPLY BUSINESS* (same limitations as for Dry Cleaners).

TRADE, TECHNICAL, or OCCUPATIONAL SCHOOL.

TRADING STAMP BUSINESS+*.

TRAILER SALES (new or used) and/or RENTAL AREA - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds (improvements as required by Section 12.21 A. 6).

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRAIN STATION.

TRANSFER BUSINESS - no storage of trucks (see Zone M1).

TRAVEL AGENCY*.

TRAVELING THEATRICAL PERFORMANCE – under canvas.

TROPICAL FISH STORE.

TRUCK GARDENING.

TRUCK RENTAL (same limitations as for Automobile Rental)- only accessory to a gasoline station - cannot exceed registered net weight of 5,600 pounds.

TUTORING CENTER for SCHOOL-AGE CHILDREN*.

TYPEWRITER REPAIR+*.

TYPOGRAPHY SHOP*.

U-DRIVE BUSINESS.

UNION HALL.

UNIVERSITY (also see Zones R4 and CR).

UPHOLSTERY SHOP*.

USED AUTO SALE (with conditions of 12.22 A28).

USED CAR LOT (same limitations as for Automobile Sales Area).

VENETIAN BLIND* LAUNDERING, SERVICING, and REPAIRING.

VETERINARY CLINIC - no hospitalization, in completely enclosed building.

VIDEO and OTHER MEDIA PRODUCTION (no outdoor sets).

VIDEO GAME ARCADE - in completely enclosed building containing four or fewer machines (see also Section 12.24 W. 34).

WALLPAPER STORE*.

WATER (DRINKING) STORE*.

WEARING APPAREL STORE* (new merchandise only).

WEDDING CHAPEL.

WINDOW and EXHIBIT BOOTH DISPLAY*, DESIGNING, FABRICATING, and FASHIONING.

WINDOW SHADE SHOP*.

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

WOODWORKING EQUIPMENT RENTAL SHOP (see ZAI 1223 for limitations and conditions).

WRESTLING ARENA - maximum seating capacity of 3,000 people.

WROUGHT IRON SHOP - no fabrication.

XEROXING*.

YARN SHOP*.

YOGA STUDIO*.

C4 COMMERCIAL ZONE

All Operations to be Conducted Wholly within a Completely Enclosed Building, Except as Permitted in the C2 Zone.
No Objectionable or Annoying Dust, Noise, Odor or Vibrations.
Limit of One H.P. on Motors for Lathes, Drill Presses, Grinders, Shapers, Milling Machines, Saws, Polishers and Metal Cutters.
No Drop Hammers or Automatic Screw Machines.
No Punch Presses Exceeding Five Ton Capacity.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area.

ACCESSORY BUILDING (to permitted use).

ACCESSORY USES.

ACUPRESSURIST'S OFFICE.

ACUPUNCTURIST'S OFFICE.

ADDING MACHINE REPAIR - only as strictly a service for new articles sold at retail on the premises.

ADDRESSOGRAPH SERVICE.
ADULT BOOKSTORE (subject to the provisions of Section 12.70).

ADULT MOTEL (subject to the provisions of Section 12.70).

ADULT MOTION PICTURE THEATER (subject to the provisions of Section 12.70).

ADULT THEATER (subject to the provisions of Section 12.70).

ADVERTISING SIGNS, statuary or structures, on-site only.

ADVERTISING STUDIO.

AIR CONDITIONING EQUIPMENT SERVICE - only as strictly a service for new articles sold at retail on the premises.

AMBULANCE SERVICE.

ANIMATED CARTOON STUDIO.

ANTIQUE SHOP.

APARTMENT HOUSE.

APPLIANCE REPAIR, household - only as strictly a service for new articles sold at retail on the premises.

AQUARIUM.

ARCHITECT'S OFFICE.

ARENA, according to Section 12.24 U. 2.

ART GALLERY.

ART SCHOOL.

ART STORE.

ASTRONOMICAL OBSERVATORY.

AUCTIONS - court ordered only.

AUDITORIUM - maximum 3,000 seating capacity.

AUTOMOBILE CLUB.

AUTOMOBILE DISPLAY ROOM.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

AUTOMOBILE PARTS, new.

AUTOMOBILE RENTAL - only in completely enclosed building and as incidental to an authorized agency dealing in new automobiles and on the same premises.

AUTOMOBILE SALES, new.

AUTOMOBILE SALES, used - only as incidental to an authorized agency dealing in new automobiles and on the same premises.

AUTOMOBILE STORAGE AREA - only incidental storage on the same premises with authorized agency dealing in new automobiles.

AUTOMOTIVE BODY and FENDER REPAIRING - only as incidental to an authorized agency dealing in new automobiles and on the same premises.

AUTOMOTIVE FUELING and SERVICE STATION, according to Section 12.24 W. 2.

AUTOMOTIVE REPAIR, according to Section 12.24 W. 3.

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BAIL BOND BROKER.

BAKERY.

BAKERY GOODS STORE.

BANK.

BANQUET HALL.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BARBER COLLEGE.

BARBER SHOP.

BATH, Turkish and the like.

BATTERY SERVICE - only as incidental to an authorized agency dealing in new automobiles and on the same premises.

BEAUTY COLLEGE.

BEAUTY SHOP or PARLOR.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BICYCLE RENTAL - only in completely enclosed building and as incidental to an authorized agency dealing in new bicycles and on the same premises.

BICYCLE REPAIR SHOP - only as incidental to an authorized agency dealing in new bicycles and on the same premises.

BICYCLE SALES, new.

BILLBOARDS.

BINGO.

BIRD STORE.

BLOODMOBILE - maximum 72 hours.

BLUEPRINTING.

BOARDING HOUSE.

BOAT SALES, new.

BODY and FENDER REPAIRING - only as incidental to an authorized agency dealing in new automobiles and on the same premises.

BOOK STORE, new or used.

BRIDGE CLUB.

BROADCASTING STUDIO.

BROKER (stocks, bonds, or real estate).

BUILDING MATERIALS RETAIL SALES - only as incidental to retail hardware store.

BURGLAR ALARM BUSINESS.

BUSINESS COLLEGE.

BUS STATION.

BUTCHER SHOP.

CAFÉ (including Café with Entertainment.

CAFETERIA.

CALCULATOR REPAIR - only as strictly a service for new articles sold at retail.

CAMERA REPAIR - only as strictly a service for new articles sold at retail on the premises.

CAMERA SHOP.

CANDY STORE.

CAR RENTAL (see Automobile Rental).

CAR REPAIR (see Automotive Repair).

CAR SALES, new (see Automobile Sales, new).

CAR SALES, used (see Automobile Sales, used).

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, new.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHARITABLE INSTITUTION.

CHARTER SCHOOL.

CHILD CARE FACILITY.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, including rescue mission.

CLINIC, medical or dental.

CLOTHING ALTERATIONS SHOP.

CLOTHING STORE, new.

CLUB, private, nonprofit.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COFFEE SHOP.

COIN SHOP.

COLLECTIBLES SHOP.

COLLECTION AGENCY.

COLLEGE.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMISSION MERCHANT or BROKER.

COMMUNITY ANTENNA FACILITY.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER, operated by governmental, philanthropic, or private agency.

COMMUNITY FACILITIES (as defined in Section 13.09 B. 3).

COMMUNITY GARDEN.

COMPUTER REPAIR - only as strictly a service for new articles sold at retail on the premises.

COMPUTER SERVER EQUIPMENT ROOM.

COMPUTER STORE.

CONCERT HALL - maximum 3,000 seating capacity.

CONFECTIONERY STORE.

CONTRACTOR'S ESTABLISHMENT - office only.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETOLOGICAL ESTABLISHMENT.

COUNSELING and REFERRAL FACILITY.

CREDIT ASSOCIATION or UNION.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CULTURAL CENTER.

DAIRY PRODUCTS STORE.

DANCE HALL, according to Section 12.24 W. 18. (a).

DANCE STUDIO or ACADEMY.

DAY CARE FACILITY, adults.

DAY CARE in HOME for fourteen or fewer children.

DELICATESSEN.

DENTAL CLINIC.

DENTAL EQUIPMENT and SUPPLIES STORE.

DENTAL LABORATORY.

DEPARTMENT STORE.

DESIGNING OFFICE or SHOP.

DETECTIVE or POLICE AGENCY, private.

DOCTOR'S or DENTIST'S OFFICE.

DORMITORY.

DOUGHNUT SHOP.

DRAMA SCHOOL, COLLEGE, or STUDIO.

DRESS SHOP.

DRESSING ROOMS and OFFICES ASSOCIATED with ADJACENT STUDIO or THEATER.

DRESSMAKING SHOP.

DRIVE-THROUGH FAST FOOD RESTAURANT, according to Section 12.24 W. 17.

DRIVING SCHOOL.

DRUG STORE.

DRY GOODS STORE.

DWELLING, group.

DWELLING, multiple.

DWELLING, one-family.

DWELLING, two-family.

EDUCATIONAL INSTITUTION.

ELDERCARE FACILITY.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC MOTOR REPAIR - only as strictly a service for new articles sold at retail on the premises.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRICAL APPLIANCE STORE.

ELECTRONICS STORE.

EMPLOYMENT AGENCY.

ENGINEERING OFFICE.

ENGRAVING.

ESCORT BUREAU.

EXHIBITS, commercial or cultural.

FABRIC STORE.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (2).

FARM MACHINERY SALES.

FILM and TAPE EDITING and MOTION PICTURE RECONSTRUCTION.

FILM DEVELOPMENT / PRINTING MACHINES.

FILM EXCHANGE.

FINANCIAL INSTITUTION.

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

FIRE STATION.

FISH MARKET.

FLORIST.

FLOWER SHOP.

FOOT MASSAGE.

FORTUNE TELLING, psychic counseling.

FRATERNAL ASSOCIATION.

FRATERNITY HOUSE.

FROZEN FOOD STORE.

FRUIT STORE.

FUNERAL PARLOR, according to Section 12.24 W. 29.

FURNITURE CLEANING - only as strictly a service for new articles sold at retail on the premises.

FURNITURE STORE.

GARAGE, parking.

GARDEN FURNITURE DISPLAY AREA.

GASOLINE STATION (see Automotive Service Station).

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP.

GLASS or MIRROR STORE.

GOLF COURSE, according to Section 12.24 U. 8.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE.

GROCERY STORE.

HAIR DRESSER.

HARDWARE STORE.

HAT MAKING SHOP.

HELICOPTER LANDINGS, infrequent.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure - no portion of structure closer than 500 feet to an A or R Zone.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (within 500 feet of an A or R Zone), according to Section 12.24 W. 24. (a).

HOUSE of WORSHIP, including rescue mission.

HYDROPONIC AGRICULTURAL ENTERPRISE.

ICE CREAM PARLOR.

IMPORT-EXPORT BUSINESS.

INSURANCE AGENCY.

INTELLIGENCE AGENCY, private.

INTERIOR DECORATING STORE.

JEWELRY STORE, new.

JEWELRY STORE, secondhand - only as incidental to the sale of new jewelry, and where not more than 15% of the net floor area is used for sale of secondhand jewelry.

JUKE BOX RENTAL or SALES, new or used.

KARAOKE ESTABLISHMENT (see Nightclub).

LABOR UNION OFFICE.

LABORATORY, medical or dental.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LAUNDRY.

LAWN MOWER and RENOVATOR REPAIR - only as strictly a service for new articles sold at retail on the premises.

LIBRARY, public, profit, and nonprofit.

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LITHOGRAPHING.

LOAN OFFICE (no used or repossessed articles to be stored on premises).

LOCKER RENTAL.

LOCKSMITH SHOP.

LODGE, private, nonprofit.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MAIL ORDER HOUSE.

MANICURE PARLOR.

MASSAGE PARLOR, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist, according to ZA 2010-2714.

MASSEUR or MASSEUSE.

MATTRESS SHOP.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET.

MEDICAL CLINIC.

MEDICAL LABORATORY.

MESSENGER OFFICE.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MILLINERY SHOP.

MISSION, rescue.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MOBILE HOME RENTAL - only in completely enclosed building and as incidental to an authorized agency dealing in new mobile homes and on the same premises.

MOBILE HOME SALES, new.

MOBILE HOME SALES, used - only as incidental to an authorized agency dealing in new mobile homes and on the same premises.

MOBILE MEDICAL FACILITY – maximum 72 hours.

MODEL HOME, according to Section 12.24 X. 15.

MONUMENTS and TOMBSTONES, retail sales.

MORTUARY or MORTUARY SCHOOL, according to Section 12.24 W. 29.

MOTION PICTURE FILM RENTAL.

MOTION PICTURE FILM or TELEVISION COMPUTER DESIGN, COMPUTER GRAPHICS, or ANIMATION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SET and PROP PRODUCTION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SOUND LAB, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION TAPE EDITING.

MOTION PICTURE FILM or TELEVISION TAPE RECONSTRUCTION.

MOTION PICTURE FILM or TELEVISION VIDEO and AUDIO PROCESSING, according to Section 12.24 X. 23.

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MOTION PICTURE THEATER.

MOTORCYCLE or MOTOR SCOOTER RENTAL - only in completely enclosed building and as incidental to an authorized agency dealing in new motorcycles or motor scooters and on the same premises.

MOTORCYCLE or MOTOR SCOOTER REPAIR - only as incidental to an authorized agency dealing in new motorcycles or motor scooters and on the same premises.

MOTORCYCLE or MOTOR SCOOTER SALES, new.

MOTORCYCLE or MOTOR SCOOTER SALES - only as incidental to an authorized agency dealing in new motorcycles or motor scooters and on the same premises.

MOTORCYCLE STORAGE GARAGE.

MUSEUM, profit, nonprofit.

MUSHROOM GROWING.

MUSIC SCHOOL or STUDIO.

MUSIC STORE.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE- (no printing or distribution).

NEWSSTAND.

NIGHTCLUB.

NOTIONS STORE.

NOVELTIES STORE (only those items not regulated by Section 12.70 of the Municipal Code).

NUMISMATIC STORE.

NURSERY, plant.

NURSERY SCHOOL.

OBJECTS of ART STORE, new or used.

OBSERVATORY.

OFFICE, business or professional.

OFFICE, corporate headquarters.

OPTICIAN.

ORPHANAGE.

ORTHOPEDIC APPLIANCE STORE.

PAINT STORE.

PARCEL DELIVERY SERVICE, branch.

PARK or PLAYGROUND (outdoor open space), operated by governmental or private agency.

PARK or PLAYGROUND (outdoor open space), operated by philanthropic organization.

PARKING AREA, public.

PARKING, automobile.

PARKING BUILDING.

PARKING GARAGE.

PET GROOMING.

PET STORE.

PHARMACY, prescription.

PHILANTHROPIC INSTITUTION.

PHILATELIC STORE.

PHONOGRAPH RECORD STORE, new.

PHOTOCOPYING.

PHOTO DEVELOPING and FINISHING.

PHOTO-ENGRAVING.

PHOTOGRAPHER.

PINBALL MACHINE RENTAL or SALES, new or used.

POLICE STATION.

POST OFFICE.

POTTERY and CERAMICS DISPLAY AREA.

POTTERY and CERAMICS STORE, retail.

POULTRY MARKET.

PRINTING ESTABLISHMENT.

PRIVATE DETECTIVE AGENCY.

PRIVATE SCHOOL, elementary, middle, or high.

PRODUCE MARKET.

PROFESSIONAL OFFICE.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUBLISHING ESTABLISHMENT.

PUMPKIN SALES - October 15 to 31 only.

QUALITY CONTROL LABORATORY.

RADIO and TELEVISION REPAIR SHOP - only as strictly a service for new articles sold at retail on the premises.

RADIO and TELEVISION STORE.

RADIO BROADCASTING STUDIO.

REAL ESTATE OFFICE.

RECORDING STUDIO.

RECREATION BUILDING.

RECREATION CENTER, owned and operated by governmental agency.

RECREATIONAL VEHICLE RENTAL - only in completely enclosed building and as incidental to an authorized agency dealing in new recreational vehicles and on the same premises.

RECREATIONAL VEHICLE SALES, new.

RECREATIONAL VEHICLE SALES, used - only as incidental to an authorized agency dealing in new recreational vehicles and on the same premises.

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE (subject to the provisions of Section 12.21 A. 18).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

REFRESHMENT STAND.

REFRIGERATION EQUIPMENT INSTALLATION and SERVICE - only as strictly a service for new articles sold at retail on the premises.

RELIGIOUS ASSOCIATION.

REPAIR SHOP - only as strictly a service for new articles sold at retail on the premises.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

RESTAURANT.

RETAIL STORE or BUSINESS.

ROOMING HOUSE.

SAFE and VAULT REPAIRING and SERVICE - only as strictly a service for new articles sold at retail on the premises.

SANDWICH SHOP.

SANITARIUM, according to Section 12.24 U. 12.

SAVINGS and LOAN ASSOCIATION.

SCHOOL, art.

SCHOOL, dance.

SCHOOL, drama.

SCHOOL, elementary, middle, or high.

SCHOOL, music.

SCHOOL, private.

SCHOOL, professional or scientific.

SCHOOL, public.

SCHOOL, trade, technical, or occupational.

SCIENTIFIC INSTRUMENT STORE.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECONDHAND STORE (see ZAI 2472 for Antique Shops, Art Galleries, Book Stores, Stamp Stores, and Coin Stores).

SECURITY SERVICE.

SERVICE STATION (see Automotive Service Station).

SHELTER for the HOMELESS, maximum 30 persons (with conditions).

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SHOE REPAIR SHOP.

SHOE SHINE STAND.

SHOE STORE.

SHOWCASE THEATER.

SIGNS, advertising, on-site only (see Building Code for regulations.).

SIGNS, identification (as provided in Section 12.12.2 A. 6, also see Building Code for specific regulations).

SODA FOUNTAIN.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE.

SOUND SCORE PRODUCTION.

SPA.

SPORT CARDS STORE.

SPORTING GOODS STORE.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STAMP STORE (postage).

STATION, bus or train.

STATIONERY STORE.

STEREO EQUIPMENT STORE.

STORAGE BUILDING for RETAIL MERCHANDISE, with office.

STORAGE, incidental.

STUDIO, including dance, drama, music, and motion.

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

SWIMMING POOL, commercial.

TAILOR SHOP.

TANNING SALON.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TAXICAB BUSINESS.

TAXIDERMIST.

TEA ROOM.

TELECOMMUTING CENTER.

TELEPHONE EXCHANGE.

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious.

TEMPORARY STORAGE of ABANDONED, PARTIALLY DISMANTLED, OBSOLETE, or WRECKED AUTOMOBILES (not including wrecking, dismantling, storage, or sale of used parts), according to Section 12.24 W. 48.

THEATER.

THRIFT and LOAN COMPANY.

TICKET AGENCY or BROKER.

TOBACCO SHOP.

TOMBSTONES, retail sales.

TRADE, TECHNICAL, or OCCUPATIONAL SCHOOL.

TRADING STAMP BUSINESS.

TRAILER RENTAL - only in completely enclosed building and as incidental to an authorized agency dealing in new trailers and on the same premises.

TRAILER SALES, new.

TRAILER SALES, used - only as incidental to an authorized agency dealing in new trailers and on the same premises.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRAIN STATION.

TRAVEL AGENCY.

TROPICAL FISH STORE.

TRUCK GARDENING.

TUTORING CENTER for SCHOOL-AGE CHILDREN.

TYPEWRITER REPAIR - only as strictly a service for new articles sold at retail on the premises.

TYPOGRAPHY SHOP.

UNION HALL.

UNIVERSITY.

USED AUTO SALE (with conditions of 12.22 A28).

USED CAR LOT (see Automobile Sales, used).

VENETIAN BLINDS, LAUNDERING, SERVICING and REPAIRING - only as strictly a service for new articles sold at retail on the premises.

VETERINARY CLINIC (see C2 Zone).

WALLPAPER STORE.

WATER (DRINKING) STORE.

WEARING APPAREL STORE.

WEDDING CHAPEL.

WINDOW SHADE SHOP.

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

XEROXING.

YARN SHOP.

C5 COMMERCIAL ZONE

An asterisk (*) indicates that the use includes the manufacturing, compounding, processing, assembling or treating of products, provided not more than five persons are engaged in such activities on the premises; that the products or services are sold principally at retail from the premises; that all operations, except the herein listed “open storage area,” are conducted within a completely enclosed building and are not objectionable due to odor, dust, smoke noise, vibrations or other causes.

Cross (+) indicates that all merchandise is sold at retail only and is new, except merchandise which is sold incidental to the operation of a permitted repair shop; that all activities, including storage, are conducted wholly within an enclosed building; that all products produced, whether primary or incidental, are sold on the premises; and that not more than five persons are engaged in such production or in servicing of materials.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area.

ACCESSORY BUILDING (to permitted use).

ACCESSORY USES, including open storage (subject to the limitations of Section 12.14 A).

ACUPRESSURIST’s OFFICE*.

ACUPUNCTURIST'S OFFICE*.

ADDING MACHINE REPAIR+*.

ADDRESSOGRAPH SERVICE+*.

ADULT BOOKSTORE (subject to the provisions of Section 12.70).

ADULT CABARET (subject to the provisions of Section 12.70).

ADULT MOTEL (subject to the provisions of Section 12.70).

ADULT MOTION PICTURE THEATER (subject to the provisions of Section 12.70).

ADULT THEATER (subject to the provisions of Section 12.70).

ADVERTISING SIGNS, statuary or structures, on-site only (see Section 62.00 et. seq. of Los Angeles Municipal Code).

ADVERTISING STUDIO*.

AIR CONDITIONING EQUIPMENT SERVICE+*.

ALZHEIMER'S / DEMENTIA CARE HOUSING*.

AMBULANCE SERVICE.

ANIMATED CARTOON STUDIO* - no use of live subjects and no processing of motion picture film.

ANTIQUE STORE*.

APARTMENT HOUSE* (subject to the requirements of the R4 Zone).

APPAREL and ACCESSORIES SILKSCREENING, EMBROIDERY and OTHER IMPRINTING TECHNIQUES.

APPLIANCE RENTAL, household.

APPLIANCE REPAIR+*, household.

AQUARIUM+*.

ARCHERY RANGE.

ARCHITECT'S OFFICE*.

ARENA (same limitations as for Sports Arena).

ART GALLERY*.

ART SCHOOL (also see Zone CR).

ART STORE*.

ASTRONOMICAL OBSERVATORY or moonwatch station.

ATHLETIC FIELD.

AUCTION HOUSE or STORE.

AUDITORIUM+* - maximum seating capacity 3,000.

AUTO RIDE AMUSEMENT - no race track - 5 mph maximum speed - low tone hush mufflers required (see ZAI Case No. 1685).

AUTOMOBILE CLUB.

AUTOMOBILE DISPLAY ROOM.

AUTOMOBILE PARKING*, under the provisions of Section 12.21 A. 4.

AUTOMOBILE PARTS or ACCESSORIES SALES.

AUTOMOBILE RENTAL - repairs within building and distance requirements complying with Section 12.14 A 27 - car storage within building or in open area with improvements as required by Section 12.21 A. 6.

AUTOMOBILE SALES, new or used (improvements as required by Section 12.21 A. 6).

AUTOMOBILE STORAGE AREA - improvements as required for Automobile Sales Area - no open repairing - no activity included in definition of "automobile wrecking".

AUTOMOBILE STORAGE GARAGE (see Automobile Storage Area).

AUTOMOTIVE BODY and FENDER REPAIRING - retail only - in completely enclosed building (see Section 12.14 A. 27).

AUTOMOTIVE EXHAUST TEST STATION (same limitations as Automobile Storage Garage).

AUTOMOTIVE FUELING and SERVICE STATION or GASOLINE STATION - lubrication, mechanical adjustments, tube and tire repairing, battery service and hoists wholly within a building (see special regulations of Section 12.14 A. 6).

AUTOMOTIVE PAINTING - (retail only - distance and building enclosure requirements as required by Section 12.14 A. 27).

AUTOMOTIVE PAINTING.

AUTOMOTIVE REPAIR, including Glass Shop, Sound Shop (see Section 12.14 A. 27).

AUTOMOTIVE UPHOLSTERING (same limitations as for Automobile Storage Garage).

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

AWNING STORE* - no fabrication or assembly.

BABY GYM* (see Health Club).

BAIL BOND BROKER*.

BAKERY GOODS STORE*.

BAKERY*.

BANK*.

BANQUET HALL*.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BARBER COLLEGE.

BARBER SHOP*.

BASEBALL BATTING RANGE or CAGE.

BASEBALL FIELD.

BASEBALL STADIUM - maximum seating capacity 3,000 people.

BATH+*, Turkish and the like.

BATTERY SERVICE (see Automotive Fueling and Service Station).

BATTERY STORE*.

BEAUTY COLLEGE.

BEAUTY SHOP or PARLOR*.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BICYCLE RENTAL.

BICYCLE REPAIR SHOP.

BICYCLE SALES, new or used.

BILLIARD PARLOR (see Pool Hall).

BINGO* (subject to the provisions of Article 4.5 of Chapter IV of this Code).

BIRD STORE*.

BLOODMOBILE* - maximum 72 hours.

BLUEPRINTING+*.

BOARDING HOME for aged, with special care, philanthropic (increased yards required).

BOARDING HOUSE for AGED*, with special care.

BOARDING HOUSE* (subject to the requirements of the R4 Zone).

BOAT RENTAL or SALES (improvements as required by Section 12.21 A. 6 for open land area).

BOAT REPAIR, small (< 40' length, < 8'6" width, < 14' height).

BODY and FENDER REPAIRING, automobile - retail only - in completely enclosed building (see Section 12.14 A. 27).

BOOK STORE*, new.

BOOK STORE*, used.

BOOSTER PUMP or FLOW CONTROL STATION, for public utility pipeline.

BOWLING ALLEY - in completely enclosed building.

BOWLING on the GREEN - no use of ten pins or wooden, plastic or metal alleys.

BOXING ARENA - maximum seating capacity for 3,000 people.

BRIDGE CLUB*.

BROADCASTING STUDIO+* - no transmitting towers.

BROKER* (stocks, bonds, or real estate).

BUILDING MATERIALS RETAIL STORE+*, rental.

BURGLAR ALARM BUSINESS*.

BUS STATION.

BUSINESS COLLEGE (also see Zone CR).

BUTCHER SHOP* (no slaughtering).

CAFE, with entertainment other than dancing (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14)*.

CAFETERIA* (for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14).

CALCULATOR REPAIR+*.

CALIBRATION and REPAIR SERVICE SHOP, for precision instruments, gauges and small metal objects.

CAMERA REPAIR+*.

CAMERA SHOP*.

CANDY STORE*.

CAR PAINTING (see Automotive Painting).

CAR RENTAL (see Automobile Rental).

CAR REPAIRING (see Automotive Repair).

CAR SALES AREA (see Automobile Sales Area).

CAR UPHOLSTERING (same limitations as for Automobile Storage Garage).

CAR WASH - (with mechanical equipment, sound level performance standards and enclosures as required by Section 12.14 A. 6 and 9).

CARNIVALS and RIDES, transient.

CAROUSEL.

CARPENTER SHOP*.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES*, new.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, secondhand.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHARITABLE INSTITUTION.

CHARTER SCHOOL.

CHECK CASHING OFFICE.

CHILD CARE FACILITY*.

CHRISTMAS TREE and ORNAMENT SELLING* - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH (including temporary revival or rescue mission).

CIRCUS, transient.

CLINIC, medical or dental - no animal clinic (subject to the limitations of Section 12.21 D).

CLOTHING ALTERATIONS SHOP*.

CLOTHES CLEANING ESTABLISHMENT (non-flammable cleaning fluid only)

CLOTHING STORE*, secondhand (also see Zone C1).

CLOTHING STORE, new*.

CLUB* - operated as a commercial enterprise (also see Zones R5 and C1).

CLUB*, private, nonprofit.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COFFEE SHOP* (same limitations as Restaurant).

COLLECTIBLES SHOP*.

COLLECTION AGENCY+* no storage of new or used materials.

COLLEGE (also see Zones R4 and CR).

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY for cable television or radio service - maximum height of most 35 feet above ground level or 20 feet above roof of building, whichever is higher.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER* - operated by governmental agency, philanthropic organization, or private agency (also see Zone R4).

COMMUNITY FACILITIES (as defined in Section 13.09 B. 3).

COMMUNITY GARDEN*.

COMPRESSED NATURAL GAS AUTOMOTIVE REFUELING STATION - building and site enclosure requirements same as Automotive Fueling and Service Station, Section 12.14 A 6.

COMPUTER GRAPHICS STUDIO*.

COMPUTER REPAIR+*.

COMPUTER SERVER EQUIPMENT ROOM.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT* (no hardware).

COMPUTER STORE*.

CONCERT HALL*, maximum seating capacity 3,000.

CONFECTIONARY STORE.

CONTRACTOR'S ESTABLISHMENT* - painting, plastering, cement work, etc. - not over five vehicles of not more than 5,600 pounds, or places of mobile mechanical equipment, excluding passenger automobiles (also see Zone C1.5).

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETOLOGICAL ESTABLISHMENT*.

COUNSELING and REFERRAL FACILITY*.

CREDIT ASSOCIATION or UNION* - no repossessed articles to be stored on premises.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CROSSFIT, BOXING, or OTHER PHYSICAL EXERCISE STUDIO*.

CULTURAL CENTER*, for profit, government, or nonprofit.

CYBER CAFÉ – containing five or more computers or terminals, according to ZA 2003-2970 and Section 12.24 W. 34.

CYBER CAFÉ - containing four or fewer computers or terminals.

DAIRY PRODUCTS STORE*.

DANCE HALL, according to Section 12.24 W. 18. (a).

DANCE STUDIO or ACADEMY.

DAY CARE FACILITY - dogs and cats only (in enclosed buildings, no overnight stays).

DAY CARE FACILITY*, adults.

DAY CARE* - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DELICATESSEN* (for provisions relating to service of alcoholic beverages, see Section 12.21 A. 10, packaged alcoholic beverage sales require conditional use).

DENTAL CLINIC*.

DENTAL EQUIPMENT and SUPPLIES STORE, retail, with incidental servicing of equipment in completely enclosed building.

DENTAL LABORATORY.

DEPARTMENT STORE+*.

DESIGNING OFFICE or SHOP*, industrial or invention.

DETECTIVE or POLICE AGENCY*, private.

DIAPER SERVICE* - only five employees exclusive of pressing, office and delivery personnel.

DOCTOR'S or DENTIST'S OFFICE*.

DORMITORY*.

DOUGHNUT SHOP*.

DRAMA SCHOOL, college, or studio.

DRESS SHOP*.

DRESSING ROOMS and OFFICES ASSOCIATED with ADJACENT STUDIO or THEATER.

DRESSMAKING SHOP*.

DRIVE-THROUGH FAST FOOD RESTAURANT, according to Section 12.24 W. 17.

DRIVING SCHOOL.

DRUG STORE* (alcoholic beverage sales require conditional use).

DRY CLEANERS*, self-service - non-flammable liquid in automatic machines.

DRY CLEANERS, on premises (subject to the limitations of Section 12.14 A. 38).

DRY GOODS STORE*.

DWELLING*, group (subject to the requirements of the R4 Zone).

DWELLING*, multiple (subject to the requirements of the R4 Zone).

DWELLING*, one-family (subject to the requirements of the R4 Zone).

DWELLING*, two-family (subject to the requirements of the R4 Zone).

EDUCATIONAL INSTITUTION (also see Zones R4 and CR).

ELDERCARE FACILITY*.

ELECTRIC CAR CHARGING STATION*, in permitted parking lot.

ELECTRIC DISTRIBUTING SUBSTATION.

ELECTRIC MOTOR REPAIR* (same limitations as for Repair Shop).

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRICAL APPLIANCE STORE*.

ELECTRONIC DEVICES REPAIR+*, household.

ELECTRONICS STORE*.

EMPLOYMENT AGENCY or BUREAU*.

ENGINEERING OFFICE* - no laboratory or shop.

ENGRAVING* - limitations do not apply when incidental to printing or publishing establishments.

EQUINE SHOW - no stables - maximum seating capacity for 3,000 people.

ESCORT BUREAU.

EXHIBITS+*, commercial or cultural.

FABRIC STORE*.

FAIRGROUNDS, public.

FARM MACHINERY SALES - no repairing, overhauling or wrecking - no sale of used parts.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (2).

FEED STORE* - in completely enclosed building.

FERRIS WHEEL.

FILM and TAPE EDITING and MOTION PICTURE RECONSTRUCTION.

FILM DEVELOPING / PRINTING MACHINES*.

FILM EXCHANGE (no laboratory).

FINANCIAL INSTITUTION*.

FIRE STATION.

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

FISH MARKET*.

FLORIST*.

FLOWER SHOP*.

FOOT MASSAGE.

FOOTBALL STADIUM (maximum seating capacity for 3,000 people).

FORTUNE TELLING*, psychic counseling.

FRATERNAL ASSOCIATION*.

FRATERNITY HOUSE*.

FROZEN FOOD LOCKER RENTAL - to individuals (each locker limited to 7 cubic feet).

FROZEN FOOD STORE+*.

FUEL STORE (in completely enclosed building).

FUN HOUSE (in completely enclosed building).

FUNERAL PARLOR, according to Section 12.24 W. 29.

FUR CLEANING (same limitations as for Dry Cleaners).

FURNITURE CLEANING*.

FURNITURE STORE*, new.

GAME ARCADE (fewer than 5 machines).

GARAGE, parking (same limitations as for Parking Building).

GARDEN EQUIPMENT RENTAL (same limitations as for Rental Equipment Store).

GARDEN FURNITURE and landscape gardening supplies DISPLAY AREA (in connection with retail store on same premises).

GASOLINE STATION (same limitations as for Automotive Fueling and Service Station).

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP*.

GLASS or MIRROR STORE+*.

GOLF COURSE or CLUB* - no miniature or pitch and putt courses, golf driving tees or ranges, and similar golf uses.

GOLF COURSE, miniature or pitch and putt, and similar commercial golf uses.

GOLF DRIVING RANGE.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE.

GROCERY STORE* (alcoholic beverage sales require conditional use).

GUNSMITH SHOP* (no sales).

GYMNASIUM.

HAIR DRESSER*.

HANDYMAN SHOP*.

HARDWARE STORE*, new.

HAT MAKING SHOP*.

HEALTH CLUB+*.

HELICOPTER LANDINGS*, infrequent (see Section 12.22 A 6 for limitations).

HELIPORT, incidental to a Hospital, according to Section 12.24 W. 23.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOBBYIST'S RENTAL SHOP (see ZAI Case No. 1223 for conditions and limitations).

HOME for the AGED, special care hotel (also see Zone R4).

HOSPICE*, including philanthropic.

HOSPITAL, including a hospital for contagious, mental, liquor, or drug addict cases - no animal hospital (also see Zones R5 and C1 - subject to the limitations of Section 12.21 D).

HOSTESS DANCE HALL, according to Section 12.24 W. 18. (b).

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure - no portion of structure closer than 500 feet to an A or R Zone.

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (within 500 feet of an A or R Zone), according to Section 12.24 W. 24. (a).

HOUSE of WORSHIP (including Rescue Mission or Temporary Revival).

HOUSEHOLD MOVING RENTAL TRUCKS and TRAILERS, RENTAL, STORAGE, or STORAGE for RENTAL PURPOSES, including those which exceed a registered net weight of 5,600 pounds, according to Section 12.24 W. 39.

HYDROPONIC AGRICULTURE ENTERPRISE.

ICE CREAM PARLOR*.

ICE SKATING RINK - in completely enclosed building.

ICE STORAGE HOUSE - maximum capacity 5 tons.

IMPORT-EXPORT BUSINESS+* - maximum 3,000 square feet of storage area.

INSURANCE AGENCY* or office, or company.

INTELLIGENCE AGENCY* or office, private.

INTERIOR DECORATING SHOP*.

INTERIOR DECORATING STORE+*.

JEWELRY MANUFACTURING.

JEWELRY STORE*.

JEWELRY STORE, secondhand.

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS* (see Section 12.13 A. 2. (a). (27)).

JUKE BOX RENTAL or SALES*, new or used.

KARAOKE ESTABLISHMENT (see Nightclub).

KARATE STUDIO*.

LABOR UNION OFFICE.

LABORATORY, medical or dental.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LAUNDROMAT*, self service (same limitations as for Dry Cleaners, self-service).

LAUNDRY (subject to the limitations of Section 12.14 A. 38).

LAWN MOWER and RENOVATOR RENTAL (same limitations as for Rental Equipment Store).

LAWN MOWER and RENOVATOR REPAIR+*.

LIBRARY*, public, nonprofit, or for profit (also see Zone R4).

LIMOUSINE RENTAL.

LINEN SUPPLY BUSINESS* (same limitations as for Dry Cleaners).

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LITHOGRAPHING.

LOAN OFFICE - (no used or repossessed articles to be stored on premises).

LOCKER RENTAL - for individual's frozen food - each locker limited to 7 cubic feet capacity.

LOCKSMITH SHOP+*.

LODGE*.

LODGE, operating as a commercial enterprise (also see Zones R5 and C1)*.

LODGE, private, nonprofit*.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

LUMBER STORE.

MAGAZINE BUSINESS, secondhand.

MAIL ORDER HOUSE+*.

MANICURE PARLOR*.

MARINE OIL SERVICE STATION.

MARTIAL ARTS STUDIO*.

MASSAGE PARLOR, adult entertainment business, according to Section 12.24 W. 18. (c).

MASSAGE PARLOR, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist, according to ZA 2010-2714.

MASSEUR or MASSEUSE (subject to the provisions of Section 12.14 A. 37).

MATTRESS SHOP* - repairing only - no renovating.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET*.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT* (no hardware).

MEDICAL CLINIC (same limitations as for Clinic, medical or dental).

MEDICAL LABORATORY.

MENTAL HOSPITAL.

MERRY-GO-ROUND.

MESSENGER OFFICE*.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MILLINERY SHOP*.

MIMEOGRAPHING SERVICE+*.

MISSION, rescue.

MOBILE MEDICAL FACILITY* - maximum 72 hours.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MOBILE HOME SALES (new or used) and/or RENTAL AREA (same limitations as for Trailer Sales and/or Rental Area).

MODEL HOME, according to Section 12.24 X. 15.

MONUMENTS and TOMBSTONES, retail sales.

MORTUARY or MORTUARY SCHOOL, according to Section 12.24 W. 29.

MOTEL or MOTOR LODGE* (same limitations as Hotels).

MOTION PICTURE FILM or TELEVISION COMPUTER DESIGN, COMPUTER GRAPHICS, or ANIMATION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SET and PROP PRODUCTION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SOUND LAB, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION TAPE EDITING.

MOTION PICTURE FILM or TELEVISION TAPE RECONSTRUCTION.

MOTION PICTURE FILM or TELEVISION VIDEO and AUDIO PROCESSING, according to Section 12.24 X. 23.

MOTION PICTURE FILM RENTAL.

MOTION PICTURE PRODUCTION (no outdoor sets).

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MOTION PICTURE THEATER.

MOTORCYCLE or MOTOR SCOOTER RENTAL.

MOTORCYCLE or MOTOR SCOOTER REPAIR SHOP (same limitations as for Automotive Repair).

MOTORCYCLE or MOTOR SCOOTER SALES, new or used.

MOTORCYCLE STORAGE GARAGE.

MUSEUM+*, for profit (also see Zone R4).

MUSHROOM GROWING - completely within a building - use of commercial fertilizers okay, but no manure.

MUSIC SCHOOL or STUDIO.

MUSIC STORE*.

NATURAL GAS (compressed) REFUELING STATION.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE* - (no printing or distribution).

NEWSSTAND+*.

NIGHTCLUB (for provisions relating to alcoholic beverages, see Section 12.24 W. 1).

NOTIONS STORE*.

NOVELTIES STORE* (only those items not regulated by Section 12.70 of the Municipal Code).

NUMISMATIC STORE.

NURSERY SCHOOL*.

NURSERY, plant.

NURSING HOME (same limitations as for Hospital).

OBSERVATORY, astronomical, astrophysical, meteorological, moon-watch, and satellite.

OFFICE BUILDING*.

OFFICE*, business or professional.

OFFICE*, corporate headquarters.

OPEN-STORAGE AREA - not more than 3,000 square feet - on rear half of lot - strictly incidental to permitted commercial use of a building on front portion of same lot - area to be completely enclosed by a solid wall or fence at least 6 feet in height - no storage higher than the enclosure - no storage of power driven excavating or road building equipment - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

OPTICIAN.

ORPHANAGE*.

ORTHOPEDIC APPLIANCE STORE*.

PAINT STORE*.

PARCEL DELIVERY SERVICE, branch - all storage, loading and unloading conducted in completely enclosed building.

PARK or PLAYGROUND (outdoor open space) - operated by government agency, philanthropic organization, or private agency.

PARKING AREA, public*.

PARKING BUILDING (subject to the provisions of Section 12.12.1.5 A).

PARKING GARAGE (same limitations as for Parking Building).

PAWNSHOP, according to Section 12.24 W. 33.

PENNY ARCADE, containing 4 or fewer coin, slug, or electronic controlled game machines, in completely enclosed building containing four or fewer machines (see also Section 12.24 W. 34).

PENNY ARCADE, containing 5 or more coin, slug, or electronic controlled game machines, according to Section 12.24 W. 34.

PEST or INSECT CONTROL BUSINESS (same limitations as for Contractor's Establishment).

PET GROOMING.

PET STORE* - including keeping or sale of domestic or wild animals other than those wild animals specified in the definition of accessory uses in Section 12.03 (Animal Regulation permit required).

PHARMACY*, prescription - within office building - all entrances from inside - no outside advertising - limited hours.

PHILANTHROPIC INSTITUTION*.

PHILATELIC STORE.

PHONOGRAPH RECORD STORE*, new.

PHONOGRAPH RECORD STORE, secondhand.

PHOTO DEVELOPING and FINISHING.

PHOTOCOPYING+*.

PHOTO-ENGRAVING* - limitations do not apply when incidental to printing or publishing establishment.

PHOTOGRAPHER*.

PINBALL MACHINES RENTAL or SALES*, new or used.

PLASTIC PLATE EMBOSSING.

PLUMBING SHOP*.

POLICE STATION.

PONY RIDING RING - no stables.

POOL HALL (see restrictions Section 12.14 A. 3).

POST OFFICE.

POTTERY and CERAMICS DISPLAY AREA - in connection with retail store on same premises.

POTTERY and CERAMICS STORE*, retail (see ZAI 2339 for limitations).

POULTRY MARKET*, dressed - no live poultry.

PRINTING ESTABLISHMENT.

PRIVATE DETECTIVE AGENCY*.

PRIVATE SCHOOL, elementary, middle, or high.

PRODUCE MARKET*.

PROFESSIONAL OFFICE*.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUBLISHING ESTABLISHMENT.

PUMPKIN SALES* - October 15 to 31 only.

QUALITY CONTROL LABORATORY as accessory to headquarters or branch offices of a manufacturer, subject to limitations under ZAI 2012.

RADIO and TELEVISION REPAIR SHOP*.

RADIO and TELEVISION STORE*.

RADIO BROADCASTING STUDIO - no transmitting towers.

REAL ESTATE OFFICE*.

RECORDING STUDIO - no manufacturing or treating of records, CDs, DVDs, cassette, or video tapes.

RECREATION AREA*, commercial - picnic grounds, boating, tennis, etc. No amusement enterprises of the type listed under Section 12.14 A. 3.

RECREATION BUILDING.

RECREATION CENTER, owned and operated by governmental agency.

RECREATIONAL VEHICLE RENTAL.

RECREATIONAL VEHICLE SALES, new or used.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE* (subject to the provisions of Section 12.21 A. 18).

REDUCED PARKING for SENIOR INDEPENDENT HOUSING and ASSISTED LIVING CARE HOUSING, according to Section 12.24 W. 38.

REDUCING SALON+*.

REFRIGERATION EQUIPMENT* INSTALLATION or SERVICE.

RELIGIOUS ASSOCIATION* - no church or house of worship.

RENTAL EQUIPMENT STORE, retail - with incidental open display and wall or fence enclosed storage, subject to limitations set forth in ZAI 1263 - excluding concrete mixers over one-half sack capacity and heavy contractor's equipment - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

REPAIR GARAGE (same limitations as for Automotive Repair).

REPAIR SHOP*, furniture, household appliances, electric motors, business machines, liquid measuring boxes, vending machines and the like.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

REST HOME, convalescent (see Hospital).

RESTAURANT* - no dancing or entertainment or drive-thru service (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14).

ROLLER SKATING RINK - in completely enclosed building.

ROOMING HOUSE* (subject to the requirements of the R4 Zone).

RUBBER or METAL STAMP STORE+*.

SAFE and VAULT REPAIRING and SERVICING*.

SANITARIUM* (same limitations as for Hospital).

SAVINGS and LOAN ASSOCIATION*.

SCENIC RAILWAY.

SCHOOL*, art (same limitations as for Professional or Scientific School).

SCHOOL*, professional or scientific - classroom or lecture instruction only - not including dancing school, music school, trade school, nor any school specializing in manual training, shop work or in the repair or maintenance of machinery or mechanical equipment.

SCHOOL, dance.

SCHOOL, drama.

SCHOOL, music.

SCHOOL, private - operated for profit or as a commercial enterprise.

SCHOOL, professional or scientific.

SCHOOL, public, elementary, middle, or high.

SCHOOL, trade, technical, or occupational - no noise, vibration, odor, etc.

SCIENTIFIC INSTRUMENT STORE*.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECONDHAND STORE (except pawnshops) - everything other than incidental storage in a completely enclosed building.

SECURITY SERVICE*.

SERVANT'S QUARTERS*, as accessory use.

SEXUAL ENCOUNTER ESTABLISHMENT, according to Section 12.24 W. 18. (c).

SHARPENING of GRINDING TOOLS or CUTLERY*.

SHEET METAL SHOP*.

SHELTER for the HOMELESS (maximum 30 persons; with conditions).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SHOE REPAIR SHOP*.

SHOE SHINE STAND+*.

SHOE STORE*.

SHOOTING GALLERY - in completely enclosed building.

SHOWCASE THEATER+*.

SIDE SHOW, circus - transient in character.

SIGN PAINTING* (see ZAI 1424 for limitations).

SIGNS*, identification (as provided in Section 12.12.2 A. 6, also see Building Code for specific regulations).

SIGNS, advertising, on-site only (see Building Code for regulations.).

SKATEBOARD TRACK - in completely enclosed building.

SKATING RINK or SKATE PARK (indoor) - in completely enclosed building.

SKILLED NURSING CARE HOUSING*.

SLOT-CAR RACING - in completely enclosed building.

SODA FOUNTAIN*.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SORORITY HOUSE*.

SOUND SCORE PRODUCTION+*.

SPA*.

SPECIAL CARE HOME*, including philanthropic (same limitations as for Hospital).

SPINNING / CYCLING STUDIO*.

SPORT CARDS STORE*.

SPORTING GOODS STORE*.

SPORTS ARENA or STADIUM - maximum seating capacity for 3,000 people - no auto, motorcycle, dog or horse races or rodeos.

STAMP STORE* (postage).

STATION, bus or train - no storage of vehicles - see Transportation Yard, Zone M1.

STATIONERY STORE*.

STEREO EQUIPMENT STORE*.

STORAGE BUILDING for HOUSEHOLD GOODS, including truck rentals, according to Section 12.24 W. 50.

STORAGE BUILDING for retail merchandise, with office - maximum 4,500 square feet of space used for storage - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

STORAGE, incidental (also see Open Storage Area) - no accessory uses for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

STRIPTEASE SHOW in completely enclosed building (subject to the provisions of Section 12.70).

STUDIO, dance, drama, motion, and music.

STUDIO+*, except drama, dancing, music, motion, motion picture, or television (also see Zones C2, CM and M1).

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

SWIMMING POOL+*, commercial.

TAILOR SHOP*.

TANNING SALON*.

TATTOO STUDIO.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TAXICAB BUSINESS - incidental repairs in enclosed building.

TAXIDERMIST*.

TELEPHONE EXCHANGE+*.

TELEVISION PRODUCTION (no outdoor sets).

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPLE, religious (except rescue mission or temporary revival).

TEMPORARY STORAGE of ABANDONED, PARTIALLY DISMANTLED, OBSOLETE, or WRECKED AUTOMOBILES (not including wrecking, dismantling, storage, or sale of used parts), according to Section 12.24 W. 48.

TENNIS COURTS*, privately operated.

TERMITE CONTROL BUSINESS (same limitations as for Contractor's Establishment).

THEATER+*.

THRIFT and LOAN COMPANY*.

TICKET AGENCY or BROKER*.

TINSMITH SHOP*.

TIRE SHOP* - including retreading or recapping.

TOBACCO SHOP*.

TOMBSTONES, retail sales.

TOW TRUCK DISPATCHING.

TOWEL SUPPLY BUSINESS* (same limitations as for Dry Cleaners).

TRADE, TECHNICAL, or OCCUPATIONAL SCHOOL.

TRADING STAMP BUSINESS+*.

TRAILER SALES (new or used) and/or RENTAL AREA - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds (improvements as required by Section 12.21 A. 6).

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRAIN STATION.

TRANSFER BUSINESS - no storage of trucks (see Zone M1).

TRAVEL AGENCY*.

TRAVELING THEATRICAL PERFORMANCE – under canvas.

TROPICAL FISH STORE.

TRUCK GARDENING.

TRUCK RENTAL (same limitations as for Automobile Rental)- only accessory to a gasoline station - cannot exceed registered net weight of 5,600 pounds.

TUTORING CENTER for SCHOOL-AGE CHILDREN*.

TYPEWRITER REPAIR+*.

TYPOGRAPHY SHOP*.

U-DRIVE BUSINESS.

UNION HALL.

UNIVERSITY (also see Zones R4 and CR).

UPHOLSTERY SHOP*.

USED AUTO SALE (with conditions of 12.22 A28).

USED CAR LOT (same limitations as for Automobile Sales Area).

VENETIAN BLIND* LAUNDERING, SERVICING, and REPAIRING.

VETERINARY CLINIC - no hospitalization, in completely enclosed building.

VIDEO and OTHER MEDIA PRODUCTION (no outdoor sets).

VIDEO GAME ARCADE - in completely enclosed building containing four or fewer machines (see also Section 12.24 W. 34).

WALLPAPER STORE*.

WATER (DRINKING) STORE*.

WEARING APPAREL STORE* (new merchandise only).

WEDDING CHAPEL.

WINDOW and EXHIBIT BOOTH DISPLAY*, DESIGNING, FABRICATING, and FASHIONING.

WINDOW SHADE SHOP*.

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

WOODWORKING EQUIPMENT RENTAL SHOP (see ZAI 1223 for limitations and conditions).

WRESTLING ARENA - maximum seating capacity of 3,000 people.

WROUGHT IRON SHOP - no fabrication.

XEROXING*.

YARN SHOP*.

YOGA STUDIO*.

CM COMMERCIAL MANUFACTURING ZONE

An asterisk (*) indicates that the use includes the manufacturing, compounding, processing, assembling or treating of products, provided not more than five persons are engaged in such activities on the premises; that the products or services are sold principally at retail from the premises; that all operations, except the herein listed "open storage area," are conducted within a completely enclosed building and are not objectionable due to odor, dust, smoke noise, vibrations or other causes.

Cross (+) indicates that all merchandise is sold at retail only and is new, except merchandise which is sold incidental to the operation of a permitted repair shop; that all activities, including storage, are conducted wholly within an enclosed building; that all products produced, whether primary or incidental, are sold on the premises; and that not more than five persons are engaged in such production or in servicing of materials.

A number sign (#) indicates that only previously prepared materials or ingredients may be used in the manufacturing process.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area; wholesale businesses are not limited in amount of floor space for storage.

ACCESSORY BUILDING (to permitted use).

ACCESSORY USES, including open storage (subject to the limitations of Section 12.14 A).

ACUPRESSURIST's OFFICE*.

ACUPUNCTURIST'S OFFICE*.

ADDING MACHINE REPAIR+*.

ADDRESSOGRAPH SERVICE+*.

ADULT BOOKSTORE (subject to the provisions of Section 12.70).

ADULT CABARET (subject to the provisions of Section 12.70).

ADULT MOTEL (subject to the provisions of Section 12.70).

ADULT MOTION PICTURE THEATER (subject to the provisions of Section 12.70).

ADULT THEATER (subject to the provisions of Section 12.70).

ADVERTISING SIGNS, statuary or structures, on-site only (see Section 62.00 et. seq. of Los Angeles Municipal Code).

ADVERTISING STUDIO*.

AIR CONDITIONING EQUIPMENT SERVICE+*.

ALZHEIMER'S / DEMENTIA CARE HOUSING*.

AMBULANCE SERVICE.

ANIMATED CARTOON STUDIO* - no use of live subjects and no processing of motion picture film.

ANTIQUE STORE*.

APARTMENT HOUSE* (subject to the requirements of the R4 Zone).

APPAREL and ACCESSORIES SILKSCREENING, EMBROIDERY and OTHER IMPRINTING TECHNIQUES.

APPLIANCE RENTAL, household.

APPLIANCE REPAIR+*, household.

AQUARIUM+*.

ARCHERY RANGE.

ARCHITECT'S OFFICE*.

ARENA (same limitations as for Sports Arena).

ART SCHOOL (also see Zone CR).

ART STORE*.

ASSAYING.

ASTRONOMICAL OBSERVATORY or moonwatch station.

ATHLETIC FIELD.

AUCTION HOUSE or STORE.

AUDITORIUM+* - maximum seating capacity 3,000.

AUTO RIDE AMUSEMENT - no race track - 5 mph maximum speed - low tone hush mufflers required (see ZAI Case No. 1685).

AUTOMOBILE CLUB.

AUTOMOBILE DISPLAY ROOM.

AUTOMOBILE PARKING*, under the provisions of Section 12.21 A. 4.

AUTOMOBILE PARTS or ACCESSORIES SALES.

AUTOMOBILE RENTAL - repairs within building and distance requirements complying with Section 12.14 A 27 - car storage within building or in open area with improvements as required by Section 12.21 A. 6.

AUTOMOBILE SALES, new or used (improvements as required by Section 12.21 A. 6).

AUTOMOBILE STORAGE AREA - improvements as required for Automobile Sales Area - no open repairing - no activity included in definition of "automobile wrecking".

AUTOMOBILE STORAGE GARAGE (see Automobile Storage Area).

AUTOMOTIVE BODY and FENDER REPAIRING - retail only - in completely enclosed building (see Section 12.14 A. 27).

AUTOMOTIVE EXHAUST TEST STATION (same limitations as Automobile Storage Garage).

AUTOMOTIVE FUELING and SERVICE STATION or GASOLINE STATION - lubrication, mechanical adjustments, tube and tire repairing, battery service and hoists wholly within a building (see special regulations of Section 12.14 A. 6).

AUTOMOTIVE PAINTING - (retail only - distance and building enclosure requirements as required by Section 12.14 A. 27).

AUTOMOTIVE PAINTING.

AUTOMOTIVE REPAIR, including Glass Shop, Sound Shop (see Section 12.14 A. 27).

AUTOMOTIVE UPHOLSTERING (same limitations as for Automobile Storage Garage).

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

AWNING ASSEMBLY#.

AWNING STORE#.

BABY GYM* (see Health Club).

BAIL BOND BROKER*.

BAKERY GOODS DISTRIBUTOR.

BAKERY GOODS MANUFACTURING.

BAKERY GOODS STORE*.

BAKERY*.

BANK*.

BANQUET HALL*.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BARBER COLLEGE.

BARBER SHOP*.

BASEBALL BATTING RANGE or CAGE.

BASEBALL FIELD.

BASEBALL STADIUM - maximum seating capacity 3,000 people.

BATH+*, Turkish and the like.

BATTERY SERVICE (see Automotive Fueling and Service Station).

BATTERY STORE*.

BEAUTY COLLEGE.

BEAUTY SHOP or PARLOR*.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BICYCLE RENTAL.

BICYCLE REPAIR SHOP.

BICYCLE SALES, new or used.

BILLIARD PARLOR (see Pool Hall).

BINGO* (subject to the provisions of Article 4.5 of Chapter IV of this Code).

BIRD STORE*.

BLOODMOBILE* - maximum 72 hours.

BLUEPRINTING+*.

BOARDING HOUSE* (subject to the requirements of the R4 Zone).

BOAT RENTAL or SALES (improvements as required by Section 12.21 A. 6 for open land area).

BOAT REPAIR, small (< 40' length, < 8'6" width, < 14' height).

BODY and FENDER REPAIRING, automobile - retail only - in completely enclosed building (see Section 12.14 A. 27).

BONE PRODUCTS MANUFACTURING#.

BOOK BINDERY.

BOOK STORE*, new.

BOOK STORE*, used.

BOOSTER PUMP or FLOW CONTROL STATION, for public utility pipeline.

BOWLING ALLEY - in completely enclosed building.

BOWLING on the GREEN - no use of ten pins or wooden, plastic or metal alleys.

BOX LUNCH PREPARATION.

BOXING ARENA - maximum seating capacity for 3,000 people.

BRIDGE CLUB*.

BROADCASTING STUDIO+* - no transmitting towers.

BROKER* (stocks, bonds, or real estate).

BUILDING MATERIALS RETAIL STORE+*, rental.

BURGLAR ALARM BUSINESS*.

BUS STATION.

BUSINESS COLLEGE (also see Zone CR).

BUTCHER SHOP* (no slaughtering).

BUTTON MAKING#.

CAFE, with entertainment other than dancing (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14)*.

CAFETERIA* (for provisions concerning alcoholic beverages, see Section 12.21 A. 10 and 14).

CALCULATOR REPAIR+*.

CALIBRATION and REPAIR SERVICE SHOP, for precision instruments, gauges and small metal objects.

CAMERA REPAIR+*.

CAMERA SHOP*.

CANDY MANUFACTURING.

CANDY STORE*.

CANVAS PRODUCTS MANUFACTURING#.

CAP MANUFACTURING#.

CAR PAINTING (see Automotive Painting).

CAR RENTAL (see Automobile Rental).

CAR REPAIRING (see Automotive Repair).

CAR SALES AREA (see Automobile Sales Area).

CAR UPHOLSTERING (same limitations as for Automobile Storage Garage).

CAR WASH - (with mechanical equipment, sound level performance standards and enclosures as required by Section 12.14 A. 6 and 9).

CARNIVALS and RIDES, transient.

CAROUSEL.

CARPENTER SHOP*.

CATERING ESTABLISHMENT.

CD, DVD, VIDEO TAPE, or CASSETTE PLAYER ASSEMBLY.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES*, new.

CD, DVD, VIDEO TAPE, or CASSETTE RENTAL and SALES, secondhand.

CELLOPHANE PRODUCTS MANUFACTURING#.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CERAMIC PRODUCTS MANUFACTURING - total capacity of kilns, 7 cubic feet - no clay pulverizing.

CHARITABLE INSTITUTION.

CHECK CASHING OFFICE.

CHILD CARE FACILITY (primarily for children of local workers), according to Section 12.24 W. 51.

CHRISTMAS TREE and ORNAMENT SELLING* - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHURCH, according to Section 12.24 W. 9.

CIRCUS, transient.

CLAY PRODUCTS STORAGE.

CLINIC, medical or dental - no animal clinic (subject to the limitations of Section 12.21 D).

CLOTH PRODUCTS MANUFACTURING#.

CLOTHES CLEANING ESTABLISHMENT (non-flammable cleaning fluid only)

CLOTHING ALTERATIONS SHOP*.

CLOTHING MANUFACTURING#.

CLOTHING STORE*, secondhand (also see Zone C1).

CLOTHING STORE, new*.

CLUB* - operated as a commercial enterprise (also see Zones R5 and C1).

CLUB*, private, nonprofit.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COFFEE SHOP* (same limitations as Restaurant).

COIL MANUFACTURING#, small.

COLLECTIBLES SHOP*.

COLLECTION AGENCY+* no storage of new or used materials.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

COMMUNITY ANTENNA FACILITY for cable television or radio service - maximum height of most 35 feet above ground level or 20 feet above roof of building, whichever is higher.

COMMUNITY CARE FACILITY, serving 6 or fewer residents.

COMMUNITY CENTER* - operated by governmental agency, philanthropic organization, or private agency (also see Zone R4).

COMMUNITY GARDEN*.

COMPRESSED NATURAL GAS AUTOMOTIVE REFUELING STATION - building and site enclosure requirements same as Automotive Fueling and Service Station, Section 12.14 A 6.

COMPUTER ASSEMBLY.

COMPUTER GRAPHICS STUDIO*.

COMPUTER REPAIR+*.

COMPUTER SERVER EQUIPMENT ROOM.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT* (no hardware).

COMPUTER STORE*.

CONCERT HALL*, maximum seating capacity 3,000.

CONDENSER MANUFACTURING#, small.

CONFECTIONARY STORE.

CONFECTIONERY MANUFACTURING.

CONTRACTOR'S ESTABLISHMENT* - painting, plastering, cement work, etc. - not over five vehicles of not more than 5,600 pounds, or places of mobile mechanical equipment, excluding passenger automobiles (also see Zone C1.5).

COOKIE MANUFACTURING.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

COSMETICS MANUFACTURING.

COSMETOLOGICAL ESTABLISHMENT*.

COUNSELING and REFERRAL FACILITY*.

CREDIT ASSOCIATION or UNION* - no repossessed articles to be stored on premises.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CRYSTAL HOLDER MANUFACTURING.

CYBER CAFÉ – containing five or more computers or terminals, according to ZA 2003-2970 and Section 12.24 W. 34.

CYBER CAFÉ - containing four or fewer computers or terminals.

DAIRY PRODUCTS STORE*.

DANCE HALL, according to Section 12.24 W. 18. (a).

DANCE STUDIO or ACADEMY.

DAY CARE FACILITY - dogs and cats only (in enclosed buildings, no overnight stays).

DAY CARE* - accessory to residential use - 14 or fewer children (for limitations see Section 12.22 A. 3).

DELICATESSEN* (for provisions relating to service of alcoholic beverages, see Section 12.21 A. 10, packaged alcoholic beverage sales require conditional use).

DENTAL CLINIC*.

DENTAL EQUIPMENT and SUPPLIES STORE, retail, with incidental servicing of equipment in completely enclosed building.

DENTAL LABORATORY.

DEPARTMENT STORE+*.

DESIGNING OFFICE or SHOP*, industrial or invention.

DETECTIVE or POLICE AGENCY*, private.

DIAPER SERVICE* - only five employees exclusive of pressing, office and delivery personnel.

DOCTOR'S or DENTIST'S OFFICE*.

DOG and CAT FOOD CATERER.

DOUGHNUT MANUFACTURING.

DOUGHNUT SHOP*.

DRAMA SCHOOL, college, or studio.

DRESS MANUFACTURING#.

DRESS SHOP*.

DRESSING ROOMS and OFFICES ASSOCIATED with ADJACENT STUDIO or THEATER.

DRESSMAKING SHOP*.

DRIVE-THROUGH FAST FOOD RESTAURANT, according to Section 12.24 W. 17.

DRIVING SCHOOL.

DRUG STORE* (alcoholic beverage sales require conditional use).

DRY CLEANERS*, self-service - non-flammable liquid in automatic machines.

DRY CLEANERS, on premises (subject to the limitations of Section 12.14 A. 38).

DRY GOODS STORE*.

DWELLING*, group (subject to the requirements of the R4 Zone).

DWELLING*, multiple (subject to the requirements of the R4 Zone).

DWELLING*, one-family (subject to the requirements of the R4 Zone).

DWELLING*, two-family (subject to the requirements of the R4 Zone).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELDERCARE FACILITY*.

ELECTRIC APPLIANCE ASSEMBLY.

ELECTRIC CAR CHARGING STATION*, in permitted parking lot.

ELECTRIC DISTRIBUTING SUBSTATION.

ELECTRIC MOTOR REPAIR* (same limitations as for Repair Shop).

ELECTRIC PARTS, assembly and manufacturing - small parts such as coils, condensers, transformers or crystal holders.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ELECTRICAL APPLIANCE STORE*.

ELECTRONIC DEVICES REPAIR+*, household.

ELECTRONIC INSTRUMENTS and DEVICES, assembly of.

ELECTRONICS STORE*.

EMPLOYMENT AGENCY or BUREAU*.

ENGINEERING OFFICE* - no laboratory or shop.

ENGRAVING* - limitations do not apply when incidental to printing or publishing establishments.

EQUINE SHOW - no stables - maximum seating capacity for 3,000 people.

ESCORT BUREAU.

EXHIBITS+*, commercial or cultural.

FABRIC STORE*.

FAIRGROUNDS, public.

FARM MACHINERY SALES - no repairing, overhauling or wrecking - no sale of used parts.

FEED STORE* - in completely enclosed building.

FELT PRODUCTS MANUFACTURING#.

FERRIS WHEEL.

FILM and TAPE EDITING and MOTION PICTURE RECONSTRUCTION.

FILM DEVELOPING / PRINTING MACHINES*.

FILM EXCHANGE (no laboratory).

FILM LABORATORY.

FINANCIAL INSTITUTION*.

FIRE STATION.

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

FISH MARKET, wholesale or jobber.

FITNESS STUDIO, BOXING, or OTHER PHYSICAL EXERCISE STUDIO.

FLORIST*.

FLOWER SHOP*.

FOOD COMMISSARY.

FOOT MASSAGE.

FOOTBALL STADIUM (maximum seating capacity for 3,000 people).

FORTUNE TELLING*, psychic counseling.

FRATERNAL ASSOCIATION*.

FROZEN FOOD LOCKER RENTAL - to individuals (each locker limited to 7 cubic feet).

FROZEN FOOD STORE+*.

FUEL STORE (in completely enclosed building).

FUN HOUSE (in completely enclosed building).

FUNERAL PARLOR, according to Section 12.24 W. 29.

FUR CLEANING (same limitations as for Dry Cleaners).

FUR PRODUCTS MANUFACTURING#.

FURNITURE CLEANING*.

FURNITURE STORE*, new.

GAME ARCADE (fewer than 5 machines).

GARAGE, parking (same limitations as for Parking Building).

GARDEN EQUIPMENT RENTAL (same limitations as for Rental Equipment Store).

GARDEN FURNITURE and landscape gardening supplies DISPLAY AREA (in connection with retail store on same premises).

GARMENT MANUFACTURING#.

GASOLINE STATION (same limitations as for Automotive Fueling and Service Station).

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GIFT SHOP*.

GLASS or MIRROR STORE+*.

GLASS PRODUCTS MANUFACTURING# - edgings, beveling and silvering.

GLOVE MANUFACTURING#.

GOLF BALLS MANUFACTURING#.

GOLF COURSE or CLUB* - no miniature or pitch and putt courses, golf driving tees or ranges, and similar golf uses.

GOLF COURSE, miniature or pitch and putt, and similar commercial golf uses.

GOLF DRIVING RANGE.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE.

GROCERY STORE* (alcoholic beverage sales require conditional use).

GUNSMITH SHOP* (no sales).

GYMNASIUM.

HAIR DRESSER*.

HANDYMAN SHOP*.

HARDWARE STORE*, new.

HAT MAKING SHOP*.

HAT MANUFACTURING#.

HAY BARN.

HEALTH CLUB+*.

HELICOPTER LANDINGS*, infrequent (see Section 12.22 A 6 for limitations).

HELIPORT, incidental to a Hospital, according to Section 12.24 W. 23.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOBBYIST'S RENTAL SHOP (see ZAI Case No. 1223 for conditions and limitations).

HOME for the AGED, special care hotel (also see Zone R4).

HOSIERY MANUFACTURING#.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOSTESS DANCE HALL, according to Section 12.24 W. 18. (b).

HOUSEHOLD MOVING RENTAL TRUCKS and TRAILERS, RENTAL, STORAGE, or STORAGE for RENTAL PURPOSES, including those which exceed a registered net weight of 5,600 pounds, according to Section 12.24 W. 39.

HYDROPONIC AGRICULTURE ENTERPRISE.

ICE CREAM MANUFACTURING.

ICE CREAM PARLOR*.

ICE SKATING RINK - in completely enclosed building.

ICE STORAGE HOUSE - maximum capacity 5 tons.

IMPORT-EXPORT BUSINESS+* - maximum 3,000 square feet of storage area.

INSURANCE AGENCY* or office, or company.

INTELLIGENCE AGENCY* or office, private.

INTERIOR DECORATING SHOP*.

INTERIOR DECORATING STORE+*.

JEWELRY MANUFACTURING - no drop hammer.

JEWELRY STORE*.

JEWELRY STORE, secondhand.

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS* (see Section 12.13 A. 2. (a). (27)).

JUKE BOX RENTAL or SALES*, new or used.

KARAOKE ESTABLISHMENT (see Nightclub).

KARATE STUDIO*.

KNITTING MILL#.

LABOR UNION OFFICE.

LABORATORY, experimental, film, motion picture, research or testing.

LABORATORY, medical or dental.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LAPIDARY SHOP.

LAUNDROMAT*, self service (same limitations as for Dry Cleaners, self-service).

LAUNDRY (subject to the limitations of Section 12.14 A. 38).

LAWN MOWER and RENOVATOR RENTAL (same limitations as for Rental Equipment Store).

LAWN MOWER and RENOVATOR REPAIR+*.

LEATHER PRODUCTS MANUFACTURING# - except machine belting.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

LIMOUSINE RENTAL.

LINEN SUPPLY BUSINESS* (same limitations as for Dry Cleaners).

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LITHOGRAPHING.

LOAN OFFICE - (no used or repossessed articles to be stored on premises).

LOCKER RENTAL - for individual's frozen food - each locker limited to 7 cubic feet capacity.

LOCKSMITH SHOP+*.

LODGE*.

LODGE, operating as a commercial enterprise (also see Zones R5 and C1)*.

LODGE, private, nonprofit*.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

LUMBER STORE.

MACHINE SHOP, precision.

MAGAZINE BUSINESS, secondhand.

MAIL ORDER HOUSE+*.

MANICURE PARLOR*.

MARINE OIL SERVICE STATION.

MARKET, public, wholesale and jobbers.

MARTIAL ARTS STUDIO*.

MASSAGE PARLOR, adult entertainment business, according to Section 12.24 W. 18. (c).

MASSAGE PARLOR, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist, according to ZA 2010-2714.

MASSEUR or MASSEUSE (subject to the provisions of Section 12.14 A. 37).

MATTRESS FACTORY or RENOVATING#.

MATTRESS SHOP* - repairing only - no renovating.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MEAT MARKET*.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT* (no hardware).

MEDICAL CLINIC (same limitations as for Clinic, medical or dental).

MEDICAL LABORATORY.

MERRY-GO-ROUND.

MESSENGER OFFICE*.

METALS# (precious or semi-precious), manufacturing products.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MILLINERY SHOP*.

MIMEOGRAPHING SERVICE+*.

MOBILE MEDICAL FACILITY* - maximum 72 hours.

MOBILE HOME PARK, according to Section 14.00 A. 7.

MOBILE HOME SALES (new or used) and/or RENTAL AREA (same limitations as for Trailer Sales and/or Rental Area).

MODEL HOME, according to Section 12.24 X. 15.

MONUMENTS and TOMBSTONES, retail sales.

MORTUARY or MORTUARY SCHOOL, according to Section 12.24 W. 29.

MOTEL or MOTOR LODGE* (same limitations as Hotels).

MOTION PICTURE FILM or TELEVISION COMPUTER DESIGN, COMPUTER GRAPHICS, or ANIMATION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SET and PROP PRODUCTION, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION SOUND LAB, according to Section 12.24 X. 23.

MOTION PICTURE FILM or TELEVISION TAPE EDITING.

MOTION PICTURE FILM or TELEVISION TAPE RECONSTRUCTION.

MOTION PICTURE FILM or TELEVISION VIDEO and AUDIO PROCESSING, according to Section 12.24 X. 23.

MOTION PICTURE FILM RENTAL.

MOTION PICTURE PRODUCTION (no outdoor sets).

MOTION PICTURE STUDIO, according to Section 12.24 U. 15.

MOTION PICTURE THEATER.

MOTORCYCLE or MOTOR SCOOTER RENTAL.

MOTORCYCLE or MOTOR SCOOTER REPAIR SHOP (same limitations as for Automotive Repair).

MOTORCYCLE or MOTOR SCOOTER SALES, new or used.

MOTORCYCLE STORAGE GARAGE.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

MUSHROOM GROWING - completely within a building - use of commercial fertilizers okay, but no manure.

MUSIC SCHOOL or STUDIO.

MUSIC STORE*.

NATURAL GAS (compressed) REFUELING STATION.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NEWSPAPER OFFICE* - (no printing or distribution).

NEWSSTAND+*.

NIGHTCLUB (for provisions relating to alcoholic beverages, see Section 12.24 W. 1).

NOTIONS STORE*.

NOVELTIES STORE* (only those items not regulated by Section 12.70 of the Municipal Code).

NUMISMATIC STORE.

NURSERY SCHOOL (primarily for children of local workers), according to Section 12.24 W. 51.

NURSERY, plant.

NUT ROASTING, FRYING, or CANDY COATING (no shelling of nuts).

OBSERVATORY, astronomical, astrophysical, meteorological, moon-watch, and satellite.

OFFICE BUILDING*.

OFFICE*, business or professional.

OFFICE*, corporate headquarters.

OPEN-STORAGE AREA - not more than 3,000 square feet - on rear half of lot - strictly incidental to permitted commercial use of a building on front portion of same lot - area to be completely enclosed by a solid wall or fence at least 6 feet in height - no storage higher than the enclosure - no storage of power driven excavating or road building equipment - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

OPTICAL GOODS MANUFACTURING.

OPTICIAN.

ORPHANAGE*.

ORTHOPEDIC APPLIANCE STORE*.

OXYGEN, storage of compressed - in Interstate Commerce Commission approved type cylinders.

PACKAGING BUSINESS.

PAINT STORE*.

PAPER PRODUCTS MANUFACTURING#.

PARCEL DELIVERY SERVICE, branch - all storage, loading and unloading conducted in completely enclosed building.

PARK or PLAYGROUND (outdoor open space) - operated by government agency, philanthropic organization, or private agency.

PARKING AREA, public*.

PARKING BUILDING (subject to the provisions of Section 12.12.1.5 A).

PARKING GARAGE (same limitations as for Parking Building).

PAWNSHOP, according to Section 12.24 W. 33.

PENNY ARCADE, containing 4 or fewer coin, slug, or electronic controlled game machines, in completely enclosed building containing four or fewer machines (see also Section 12.24 W. 34).

PENNY ARCADE, containing 5 or more coin, slug, or electronic controlled game machines, according to Section 12.24 W. 34.

PERFUME MANUFACTURING, blending and bottling.

PEST or INSECT CONTROL BUSINESS (same limitations as for Contractor's Establishment).

PET GROOMING.

PET STORE* - including keeping or sale of domestic or wild animals other than those wild animals specified in the definition of accessory uses in Section 12.03 (Animal Regulation permit required).

PHARMACY*, prescription - within office building - all entrances from inside - no outside advertising - limited hours.

PHILANTHROPIC INSTITUTION*.

PHILATELIC STORE.

PHONOGRAPH ASSEMBLY.

PHONOGRAPH RECORD STORE*, new.

PHONOGRAPH RECORD STORE, secondhand.

PHOTO DEVELOPING and FINISHING.

PHOTOCOPYING+*.

PHOTO-ENGRAVING* - limitations do not apply when incidental to printing or publishing establishment.

PHOTOGRAPHER*.

PIE MANUFACTURING.

PINBALL MACHINES RENTAL or SALES*, new or used.

PLASTIC PLATE EMBOSSING.

PLASTIC PRODUCTS MANUFACTURING - from previously molded material.

PLUMBING SHOP*.

POLICE STATION.

PONY RIDING RING - no stables.

POOL HALL (see restrictions Section 12.14 A. 3).

POST OFFICE.

POTTERY and CERAMICS DISPLAY AREA - in connection with retail store on same premises.

POTTERY and CERAMICS STORE*, retail (see ZAI 2339 for limitations).

POTTERY MANUFACTURING - total capacity of kilns 8 cubic feet - no clay pulverizing.

POULTRY DEALER or BROKER, wholesale.

POULTRY MARKET*, dressed - no live poultry.

PRINTING ESTABLISHMENT.

PRIVATE DETECTIVE AGENCY*.

PRODUCE MARKET, wholesale.

PROFESSIONAL OFFICE*.

PUBLIC MARKET, wholesale.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUBLISHING ESTABLISHMENT.

PUMPKIN SALES* - October 15 to 31 only.

QUALITY CONTROL LABORATORY as accessory to headquarters or branch offices of a manufacturer, subject to limitations under ZAI 2012.

RADIO and TELEVISION ASSEMBLY.

RADIO and TELEVISION REPAIR SHOP*.

RADIO and TELEVISION STORE*.

RADIO BROADCASTING STUDIO - no transmitting towers.

REAL ESTATE OFFICE*.

RECORDING STUDIO - no manufacturing or treating of records, CDs, DVDs, cassette, or video tapes.

RECREATION AREA*, commercial - picnic grounds, boating, tennis, etc. No amusement enterprises of the type listed under Section 12.14 A. 3.

RECREATION BUILDING.

RECREATION CENTER, owned and operated by governmental agency.

RECREATIONAL VEHICLE RENTAL.

RECREATIONAL VEHICLE SALES, new or used.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

RECYCLING COLLECTION or BUYBACK CENTER in CONJUNCTION with a GROCERY STORE* (subject to the provisions of Section 12.21 A. 18).

REDUCING SALON+*.

REFRIGERATION EQUIPMENT* INSTALLATION or SERVICE.

RELIGIOUS ASSOCIATION* - no church or house of worship.

RENTAL EQUIPMENT STORE, retail - with incidental open display and wall or fence enclosed storage, subject to limitations set forth in ZAI 1263 - excluding concrete mixers over one-half sack capacity and heavy contractor's equipment - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

REPAIR GARAGE (same limitations as for Automotive Repair).

REPAIR SHOP*, furniture, household appliances, electric motors, business machines, liquid measuring boxes, vending machines and the like.

RESEARCH AND DEVELOPMENT CENTER, according to Section 12.24 U. 23.

RESTAURANT* - no dancing or entertainment or drive-thru service (for provisions relating to alcoholic beverages, see Section 12.21 A. 10 and 14).

ROLLER SKATING RINK - in completely enclosed building.

ROOMING HOUSE* (subject to the requirements of the R4 Zone).

RUBBER or METAL STAMP STORE+*.

SAFE and VAULT REPAIRING and SERVICING*.

SANITARIUM, according to Section 12.24 U. 12.

SAVINGS and LOAN ASSOCIATION*.

SCENIC RAILWAY.

SCHOOL*, art (same limitations as for Professional or Scientific School).

SCHOOL*, professional or scientific - classroom or lecture instruction only - not including dancing school, music school, trade school, nor any school specializing in manual training, shop work or in the repair or maintenance of machinery or mechanical equipment.

SCHOOL, dance.

SCHOOL, drama.

SCHOOL, music.

SCHOOL, professional or scientific.

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SCHOOL, trade, technical, or occupational - no noise, vibration, odor, etc.

SCIENTIFIC INSTRUMENT and EQUIPMENT MANUFACTURING.

SCIENTIFIC INSTRUMENT STORE*.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SECONDHAND STORE (except pawnshops) - everything other than incidental storage in a completely enclosed building.

SECURITY SERVICE*.

SERVANT'S QUARTERS*, as accessory use.

SEXUAL ENCOUNTER ESTABLISHMENT, according to Section 12.24 W. 18. (c).

SHARPENING of GRINDING TOOLS or CUTLERY*.

SHEET METAL SHOP*.

SHELL PRODUCTS MANUFACTURING#.

SHELTER for the HOMELESS (maximum 30 persons; with conditions).

SHELTER for the HOMELESS*, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SHELTER for the HOMELESS, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81).

SHOE MANUFACTURING#.

SHOE REPAIR SHOP*.

SHOE SHINE STAND+*.

SHOE STORE*.

SHOOTING GALLERY - in completely enclosed building.

SHOWCASE THEATER+*.

SIDE SHOW, circus - transient in character.

SIGN PAINTING* (see ZAI 1424 for limitations).

SIGNS*, identification (as provided in Section 12.12.2 A. 6, also see Building Code for specific regulations).

SIGNS, advertising, on-site only (see Building Code for regulations.).

SILK SCREEN PRINTING - except on hard plastic, metal or glass objects.

SKATEBOARD TRACK - in completely enclosed building.

SKATING RINK or SKATE PARK (indoor) - in completely enclosed building.

SLOT-CAR RACING - in completely enclosed building.

SODA FOUNTAIN*.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SOUND SCORE PRODUCTION+*.

SPA*.

SPINNING / CYCLING STUDIO*.

SPORT CARDS STORE*.

SPORTING GOODS STORE*.

SPORTS ARENA or STADIUM - maximum seating capacity for 3,000 people - no auto, motorcycle, dog or horse races or rodeos.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

STAMP STORE* (postage).

STATION, bus or train - no storage of vehicles - see Transportation Yard, Zone M1.

STATIONERY STORE*.

STEREO EQUIPMENT ASSEMBLY.

STEREO EQUIPMENT STORE*.

STONES (precious or semi-precious), manufacturing products of.

STORAGE BUILDING for HOUSEHOLD GOODS, including truck rentals, according to Section 12.24 W. 50.

STORAGE BUILDING.

STORAGE, incidental (also see Open Storage Area) - no accessory uses for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds.

STRIPTEASE SHOW in completely enclosed building (subject to the provisions of Section 12.70).

STUDIO, dance, drama, motion, and music.

STUDIO+*, except drama, dancing, music, motion, motion picture, or television (also see Zones C2, CM and M1).

SWIMMING POOL+*, commercial.

TAILOR SHOP*.

TANNING SALON*.

TATTOO STUDIO.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TAXICAB BUSINESS - incidental repairs in enclosed building.

TAXIDERMIST*.

TELEPHONE EXCHANGE+*.

TELEVISION PRODUCTION (no outdoor sets).

TELEVISION STUDIO, according to Section 12.24 U. 15.

TEMPORARY STORAGE of ABANDONED, PARTIALLY DISMANTLED, OBSOLETE, or WRECKED AUTOMOBILES (not including wrecking, dismantling, storage, or sale of used parts), according to Section 12.24 W. 48.

TENNIS COURTS*, privately operated.

TERMITE CONTROL BUSINESS (same limitations as for Contractor's Establishment).

TESTING LABORATORY.

TEXTILE PRODUCTS MANUFACTURING#.

THEATER+*.

THRIFT and LOAN COMPANY*.

TICKET AGENCY or BROKER*.

TINSMITH SHOP*.

TIRE SHOP* - including retreading or recapping.

TOBACCO SHOP*.

TOILETRIES MANUFACTURING (except soap).

TOMBSTONES, retail sales.

TOW TRUCK DISPATCHING.

TOWEL SUPPLY BUSINESS* (same limitations as for Dry Cleaners).

TRADE, TECHNICAL, or OCCUPATIONAL SCHOOL.

TRADING STAMP BUSINESS+*.

TRAILER SALES (new or used) and/or RENTAL AREA - no accessory use for the rental or storage of commercial vehicles or contractor's equipment exceeding a registered net weight of 5,600 pounds (improvements as required by Section 12.21 A. 6).

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRAIN STATION.

TRANSFER BUSINESS - no storage of trucks (see Zone M1).

TRANSFORMER MANUFACTURING, small.

TRAVEL AGENCY*.

TRAVELING THEATRICAL PERFORMANCE – under canvas.

TROPICAL FISH STORE.

TRUCK RENTAL (same limitations as for Automobile Rental)- only accessory to a gasoline station - cannot exceed registered net weight of 5,600 pounds.

TYPEWRITER REPAIR+*.

TYPOGRAPHY SHOP*.

U-DRIVE BUSINESS.

UNION HALL.

UPHOLSTERY SHOP*.

USED AUTO SALE (with conditions of 12.22 A28).

USED CAR LOT (same limitations as for Automobile Sales Area).

VENETIAN BLIND* LAUNDERING, SERVICING, and REPAIRING.

VETERINARY CLINIC - no hospitalization, in completely enclosed building.

VIDEO and OTHER MEDIA PRODUCTION (no outdoor sets).

VIDEO GAME ARCADE - in completely enclosed building containing four or fewer machines (see also Section 12.24 W. 34).

WALLPAPER STORE*.

WAREHOUSE.

WATER (DRINKING) STORE*.

WEARING APPAREL STORE* (new merchandise only).

WINDOW and EXHIBIT BOOTH DISPLAY*, DESIGNING, FABRICATING, and FASHIONING.

WINDOW SHADE MANUFACTURING#, cloth.

WINDOW SHADE SHOP*.

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIPING RAG STORAGE - laundered only.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

WOODWORKING EQUIPMENT RENTAL SHOP (see ZAI 1223 for limitations and conditions).

WRESTLING ARENA - maximum seating capacity of 3,000 people.

WROUGHT IRON SHOP - no fabrication.

XEROXING*.

YARN PRODUCTS MANUFACTURING#.

YARN SHOP*.

YOGA STUDIO*.

YOGA STUDIO.

MR1 RESTRICTED INDUSTRIAL ZONE

Note: there are five separate alphabetic use lists in this zone category.

All Operations to be Conducted within a Completely Enclosed Building and Specified Open Yard Activities and Incidental Storage within Areas Enclosed by Solid Fence or Wall at Least 6 Feet High.
Purpose of MR1 Zone is to Protect Industrial Land for Industrial Use and Prohibit Unrelated Commercial and Nonindustrial Uses.
No Residential and/or Institutional Uses Permitted.
All Activities with no Objectionable or Annoying Dust, Noise, Odor or Vibration.
Same Limitations on Equipment (i.e., Motors, Drill or Punch Presses, Etc.) As CM Zone. See Section 12.17.1 A. 2.

A number sign (#) indicates that only previously prepared materials or ingredients may be used in the manufacturing process.

ACCESSORY BUILDINGS, which are customarily incidental to a permitted use including not to exceed one dwelling unit used solely by watchman or caretaker of an industrial use which requires 24 hour supervision.

ACCESSORY USES.

AGRICULTURAL USES, such as field crops, truck gardening, berry, bush or tree crops, flower gardening, nurseries, orchards, aviaries, apiaries, mushroom farms and the like.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BOWLING on the GREEN.

CHILD CARE FACILITY (primarily for children of local workers), according to Section 12.24 W. 51.

CHRISTMAS TREE and ORNAMENT SELLING - December 1 to 25 only (subject to the provisions of Sec. 12.22 A. 4).

CHRISTMAS TREE FARM.

CHURCH, according to Section 12.24 W. 9.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COMMUNITY GARDEN.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRICAL DISTRIBUTING SUBSTATION.

FARMING.

HELICOPTER LANDINGS, infrequent.

HYDROPONIC AGRICULTURAL ENTERPRISE.

MUSHROOM GROWING.

NURSERY, plant.

PUMPKIN SALES - October 15 to 31 only.

RABBIT KEEPING.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SIGNS (as provided in Section 12.17.5 B. 9, also see Building Code for specific regulations).

TURKEY KEEPING.

ZONE C2 USES, which are devoted primarily to the manufacturing of products, or assembling, compounding or treatment of materials with limited retail business only if incidental to the main industrial or manufacturing use (see limitations in Section 12.17.5 B. 2), or uses which are conducted only as an accessory use to the main use and provide services for those persons employed on the premises. An asterisk (*) indicates that the processing, assembly or manufacturing is primarily for wholesale trade.

The following commercial uses are permitted:

ACUPRESSURIST's OFFICE.

ACUPUNCTURIST'S OFFICE.

ADDRESSOGRAPH SERVICE*.

ADVERTISING STRUCTURES MANUFACTURING.

ANIMATED CARTOON STUDIO.

AQUARIUM.

ARENA, fewer than 25,000 seats, according to Section 12.24 U. 2.

AUDITORIUM, fewer than 25,000 seats, according to Section 12.24 U. 2.

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BAKERY* (also see Zone C2).

BANK.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

BLOODMOBILE - maximum 72 hours - for employees onsite only.

BOX LUNCH PREPARATION*.

CAFÉ, for use by the general public, according to Section 12.24 W. 40.

CAFETERIA.

CARPENTER SHOP.

CATERING ESTABLISHMENT*.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CLINIC, medical or dental.

COFFEE SHOP.

COMPUTER GRAPHICS STUDIO.

COMPUTER SERVER EQUIPMENT ROOM.

CONTRACTOR'S ESTABLISHMENT.

DAY CARE FACILITY - dogs and cats only (in enclosed buildings, no overnight stays).

DENTAL CLINIC.

DENTAL LABORATORY.

DINING ROOM.

DOCTOR'S or DENTIST'S OFFICE.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

ENGRAVING* (also see Zone C2).

EQUINE BOARDING, BREEDING, GRAZING, RAISING, or TRAINING (commercial), according to Section 12.24 W. 5.

FILM and TAPE EDITING and MOTION PICTURE RECONSTRUCTION.

FIRE STATION, performance standards, according to Section 14.00 A. 3.

FROZEN FOOD LOCKER RENTAL.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GREENHOUSE.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOUSEHOLD MOVING RENTAL TRUCKS and TRAILERS, RENTAL, STORAGE, or STORAGE for RENTAL PURPOSES, including those which exceed a registered net weight of 5,600 pounds, according to Section 12.24 W. 39.

JEWELRY MANUFACTURING - no drop hammer.

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS, according to Section 12.24 X. 13.

LABORATORY, medical or dental.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOCKER RENTAL.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MEDICAL CLINIC.

MEDICAL LABORATORY.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MOBILE MEDICAL FACILITY - maximum 72 hours for employees on site only.

MODEL HOME, according to Section 12.24 X. 15.

MOTION PICTURE FILM or TELEVISION TAPE EDITING.

MOTION PICTURE FILM or TELEVISION TAPE RECONSTRUCTION.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL (primarily for children of local workers), according to Section 12.24 W. 51.

OFFICES and SHOWROOMS, accessory to the primary industrial use, provided office and showrooms do not exceed floor area of primary industrial use, and as otherwise limited by Section 12.17.5 B 3 (e).

OFFICE BUILDINGS, subject to the provisions of Section 12.17.5 B 3 (j).

OFFICES, corporate headquarters.

OPEN STORAGE.

PARCEL DELIVERY SERVICE, branch.

PARKING AREA, public.

PARKING BUILDING.

PHOTO-ENGRAVING* (also see Zone C2).

PLASTIC PLATE EMBOSSING.

POLICE STATION, performance standards, according to Section

14.00 A. 3.

PRINTING ESTABLISHMENT, wholesale.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

PUBLISHING ESTABLISHMENT, wholesale.

QUALITY CONTROL LABORATORY.

RECREATIONAL FACILITY - as an accessory use incidental to the primary industrial use of the parcel.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

REFRESHMENT STAND - as an accessory use incidental to the primary industrial use of the parcel.

RESEARCH and DEVELOPMENT CENTER.

RESTAURANT - as an accessory use incidental to the primary industrial use of the property.

RESTAURANT, for use by the general public, according to Section 12.24 W. 40.

RIDING ACADEMY, SCHOOL, CLUB, or STABLE, according to Section 12.24 W. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SHEET METAL SHOP.

SIGN PAINTING.

SODA FOUNTAIN (see Restaurant).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SOUND SCORE PRODUCTION.

STADIUM, fewer than 25,000 seats, according to Section 12.24 U. 2.

STAND for DISPLAY and SALE of AGRICULTURAL PRODUCTS RAISED on the PREMISES.

STUDIO, dance, drama, music, motion.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TEA ROOM (see Restaurant).

TELECOMMUTING CENTER.

TEMPORARY STORAGE of ABANDONED, PARTIALLY DISMANTLED, OBSOLETE, or WRECKED AUTOMOBILES (not including wrecking, dismantling, storage, or sale of used parts), according to Section 12.24 W. 48.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

TRUCK GARDENING.

TYPOGRAPHY SHOP* (also see Zone C2).

UPHOLSTERY SHOP# - no manufacturing or assembly of frames or garnetting or carding of material (also see Zones C2 and M1).

USED CAR LOT.

WINDOW and EXHIBIT BOOTH DISPLAY, DESIGNING, and FABRICATING.

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

ZONE CM USES, only those listed as first permitted in the CM Zone (Section 12.17.1 A. 2) and in full compliance with CM Zone regulations, an asterisk (*) indicates the processing, assembly or manufacturing is primarily for wholesale trade.

The following CM uses are permitted:

ASSAYING.

AWNING ASSEMBLY.

BAKERY GOODS DISTRIBUTOR.

BAKERY GOODS MANUFACTURING.

BONE PRODUCTS MANUFACTURING#.

BOOK BINDERY

BOX LUNCH PREPARATION.

BUTTON MAKING#.

CANDY MANUFACTURING*.

CANVAS PRODUCTS MANUFACTURING#.

CAP MANUFACTURING#.

CATERING ESTABLISHMENT.

CATERING TRUCK YARD.

CD, DVD, VIDEO TAPE, or CASSETTE PLAYER ASSEMBLY.

CELLOPHANE PRODUCTS MANUFACTURING#.

CERAMIC PRODUCTS MANUFACTURING – total capacity of kilns 8 cubic feet - no clay pulverizing.

CLAY PRODUCTS STORAGE.

CLOTH PRODUCTS MANUFACTURING#.

CLOTHING MANUFACTURING*#.

COIL (electrical) MANUFACTURING#, small.

COMPUTER ASSEMBLY.

CONDENSER (electrical) MANUFACTURING#, small.

CONFECTIONERY MANUFACTURING#.

COOKIE MANUFACTURING#.

COSMETICS MANUFACTURING.

CRYSTAL HOLDER MANUFACTURING.

DOG and CAT FOOD CATERER*.

DOUGHNUT MANUFACTURING* (also see Bakery in Zone C2).

DRESS MANUFACTURING*#.

ELECTRIC APPLIANCE ASSEMBLY.

ELECTRIC PARTS ASSEMBLY and MANUFACTURING - small parts such as coils, condensers, transformers or crystal holders.

ELECTRONIC INSTRUMENTS and DEVICES ASSEMBLY.

FELT PRODUCTS MANUFACTURING#.

FILM LABORATORY.

FISH MARKET, wholesale or jobber.

FOOD COMMISSARY.

FROZEN FOOD LOCKER RENTAL.

FUR PRODUCTS MANUFACTURING#.

GARMENT MANUFACTURING#.

GLASS PRODUCTS MANUFACTURING# -edging, leveling and silvering.

GLOVE MANUFACTURING#.

GOLF BALL MANUFACTURING#.

HAT MANUFACTURING#.

HAY BARN.

HOSIERY MANUFACTURING#.

ICE CREAM MANUFACTURING*.

KNITTING MILL#.

LABORATORY, experimental, film, motion picture, research or testing.

LAPIDARY SHOP*.

LEATHER PRODUCTS MANUFACTURING* - except machine belting.

MACHINE SHOP, precision.

MARKET, public, wholesale and jobbers.

MATTRESS FACTORY or RENOVATING#.

METALS*# (precious or semi-precious), manufacturing products of.

NUT ROASTING*, FRYING, or CANDY COATING - no shelling of nuts.

OPTICAL GOODS MANUFACTURING*.

OXYGEN, storage of compressed - in Interstate Commerce Commission approved type cylinders.

PACKAGING BUSINESS.

PAPER PRODUCTS MANUFACTURING#*.

PERFUME MANUFACTURING*, blending, and bottling.

PHONOGRAPH ASSEMBLY.

PIE MANUFACTURING*.

PLASTIC PRODUCTS MANUFACTURING – from previously molded material.

POTTERY MANUFACTURING* - total capacity of kilns 8 cubic feet - no clay pulverizing.

POULTRY DEALER or BROKER, wholesale.

PRODUCE MARKET, wholesale.

PUBLIC MARKET, wholesale.

RADIO and TELEVISION ASSEMBLY.

SCIENTIFIC INSTRUMENT and EQUIPMENT MANUFACTURING.

SHELL PRODUCTS MANUFACTURING#*.

SHOE MANUFACTURING#*.

SILK SCREEN PRINTING - except on hard plastic, metal or glass objects.

STEREO EQUIPMENT ASSEMBLY.

STONES* (precious or semi-precious), manufacturing products of.

STORAGE BUILDING.

TESTING LABORATORY.

TEXTILE PRODUCTS MANUFACTURING#.

TOILETRIES MANUFACTURING (except soap).

TRANSFORMER MANUFACTURING, small.
WAREHOUSE.

WINDOW SHADE MANUFACTURING#, cloth.

WIPING RAG STORAGE - laundered only.

YARN PRODUCTS MANUFACTURING#*.

The following uses when conducted wholly within a completely enclosed building:

The assembly, manufacturing, processing or treatment of products from the following previously prepared materials:

cork
feathers
fiber#
hair#
horn#
paint# - not employing a boiling process
plastics#
rubber#
tobacco#
wool#

ADVERTISING STRUCTURES MANUFACTURING.

ANIMAL (small) BREEDING AND BOARDING (see definition of Accessory Use) not within 500 feet of residential zone - no outside keeping of animals.

ANIMAL HOSPITAL (same limitations as for Dog and Cat Hospital).

AUTOMOBILE PARTS, repairing or rebuilding for wholesale.

AUTOMOBILE REBUILDING OR RECONDITIONING, wholesale.

AUTOMOTIVE ASSEMBLY, wholesale.

AWNING MANUFACTURING.

BATHING CAP MANUFACTURING.

BATTERY MANUFACTURING.

BILLBOARD MANUFACTURING.

BLACKSMITH SHOP, no drop hammers, automatic screw machines, or punch presses with a rated capacity of over 20 tons, except over 20 ton capacity permitted by Department of Building and Safety per Section 12.17.5 B. 4. (j).

BOTTLING PLANT - except fish products or sauerkraut.

BRASS FOUNDRY, according to Section 12.24 W. 20.

BUTTON MANUFACTURING#.

CANNERY - except fish products or sauerkraut.

CARPET and RUG CLEANING PLANT.

CASE HARDENING.

CAT BREEDING or BOARDING.

CEMENT PRODUCTS MANUFACTURING#.

CIGAR MANUFACTURING.

CIGARETTE MANUFACTURING.

COLD STORAGE PLANT.

COMPUTER MANUFACTURING.

COMPUTER SOFTWARE and OTHER COMPUTER-RELATED PRODUCTS and SERVICES DEVELOPMENT and PRODUCTION (including hardware).

COMPUTER SUPPORT FACILITIES.

CONCRETE PRODUCTS MANUFACTURING#.

DAY CARE FACILITY, dogs and cats – no overnight stays.

DISTRIBUTION CENTER, PLANT, or WAREHOUSE.

DOG and CAT HOSPITAL - not within 500 feet of a residential zone - no outside keeping of animals.

DOG BREEDING or BOARDING.

DOOR MANUFACTURING (same limitations as for Sash manufacturing).

DRUG MANUFACTURING, assembly, compounding, processing, or treatment.

DRY CLEANING PLANT, wholesale.

DWELLING, as an accessory to industrial development on same lot - only if designed and used solely by a watchman or caretaker.

DYEING WORKS PLANT.

ELECTRICAL and NEON SIGN MANUFACTURING.

ELECTRIC FOUNDRY, according to Section 12.24 W. 20.

ELECTRONIC INSTRUMENTS and DEVICES MANUFACTURING.

ELECTRONIC PRODUCTS ASSEMBLY and MANUFACTURING.

ELECTROPLATING of SMALL ARTICLES such as jewelry, small hardware and small parts for manufactured products.

FIBER PRODUCTS MANUFACTURING.

FOOD PRODUCTS MANUFACTURING# - except fish, sauerkraut, vinegar or yeast, or the rendering or retrieving of fats or oils - no noxious or offensive odors shall emanate from the premises.

FOUNDRY (except iron, steel, brass, manganese, bronze and zinc), according to Section 12.24 W. 20.

FOUNDRY (iron, steel, brass, manganese, bronze and zinc), according to Section 12.24 W. 20.

FRUIT CANNERY.

FURNITURE ASSEMBLY PLANT.

FURNITURE MANUFACTURING - incidental mill work and use of power or electric shop tools permitted only in a completely enclosed area or room within the building.

HAIR CARE PRODUCTS MANUFACTURING#.

HEAT TREATING, CASE HARDENING, temporary - applying solid film lubricants and similar processing of small parts used in manufacturing of mechanical apparatus, devices or equipment.

ICE and COLD STORAGE PLANT.

IRON FOUNDRY or FABRICATION PLANT, according to Section 12.24 W. 20.

KENNEL - not within 500 feet of a residential zone - no outside keeping of animals.

LAUNDRY PLANT, wholesale.

LIGHT SHEET METAL PRODUCTS MANUFACTURING, such as heating and ventilating ducts and equipment, cornices, eaves, rain gutters, eaves and the like.

MACHINE BELT MANUFACTURING#, from previously tanned leather.

MACHINE SHOP, no drop hammers, automatic screw machines, or punch presses with a rated capacity over 20 tons, except over 20 ton capacity permitted by Department of Building and Safety per Section 12.17.5 B. 4. (j).

MANNEQUIN MANUFACTURING.

MAT MANUFACTURING#.

MEDIA-RELATED PRODUCTS and SERVICES DEVELOPMENT and PRODUCTION (including hardware).

METAL SPINNING.

METAL STAMP MANUFACTURING.

MUSICAL INSTRUMENT MANUFACTURING.

NEON LIGHT MANUFACTURING.

NEON SIGN MANUFACTURING.

NOVELTIES MANUFACTURING.

OFFICE, accessory to the primary industrial use of the lot.

OFFICE BUILDING, if used only for offices of industrial firms, industrial engineering firms, and other professional, administrative, and clerical services needed by industries in the area.

OFFICE, corporate headquarters.

PARCEL DELIVERY SERVICE.

PERFUMED TOILET SOAP MANUFACTURING - no refining of rendering of fats or oils.

PHARMACEUTICALS MANUFACTURING, assembly, compounding, processing, or treatment.

PLASTIC PRODUCTS MANUFACTURING#, such as bottling caps, buttons, mats, stamps, washers and the like. (No Banbury Mills or rolling mills of more than 60 inches in length permitted to be used.)

POINT MANUFACTURING# - not employing a boiling process.

PRINTING ESTABLISHMENT, wholesale.

PUBLISHING ESTABLISHMENT, wholesale.

RECYCLING MATERIAL SORTING FACILITY (subject to the provisions of Section 12.21 A. 18 (e)).

RECYCLING MATERIALS SORTING FACILITY, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (e), according to Section 12.24 U. 22. (d).

RESEARCH and DEVELOPMENT CENTER.

RUBBER PRODUCTS MANUFACTURING# (see Plastics Products Manufacturing - same limitations).

RUBBER STAMP MANUFACTURING.

RUG CLEANING PLANT.

SASH, WINDOW or DOOR MANUFACTURING#, incidental mill work and use of power or electric shop tools permitted only in a completely enclosed area or room within a building.

SEA WATER FACILITY, according to Section 12.24 U. 25.

SHEET METAL PRODUCTS MANUFACTURING, light sheet metal products only, such as heating and ventilating ducts and equipment, cornices, rain gutters, eaves and the like.

SIGN MANUFACTURING, including electrical.

STAMP MANUFACTURING#, metal, rubber or plastic and the like.

STEEL FOUNDRY or FABRICATION PLANT and HEAVYWEIGHT CASTING, according to Section 12.24 W. 20.

STEREO EQUIPMENT MANUFACTURING.

SYNTHETIC RUBBER PRODUCTS MANUFACTURING# (see Plastic Products Manufacturing - same limitations).

TABLEWARE MANUFACTURING#.

TEMPERING.

TIRE RETREADING or RECAPPING# (see also Tire Shop in Zone C2).

TOBACCO PRODUCTS MANUFACTURING.

TOY MANUFACTURING.

TRUCK REPAIRING or OVERHAULING.

VEGETABLE CANNERY.

VETERINARY CLINIC.

VETERINARY HOSPITAL (not within 500 feet of a residential zone - no outside keeping of animals).

WASHER MANUFACTURING#, metal, rubber or plastic and the like.

WINDOW MANUFACTURING (same limitations as Sash Manufacturing).

WOODWORKING SHOP - incidental mill work and the use of power or electric shop tools permitted only in a completely enclosed area or room within a building.

The following uses when conducted either in a completely enclosed building or within an area enclosed on all sides with a solid wall or solid fence not less than 6 feet in height when no material or equipment is stored to a height greater than that of the enclosing wall or fence (except for lumber in lumber yards). See Section 12.21 A 9 for wall maintenance requirements and types of walls permitted.

BATHTUB MANUFACTURING.

BOAT BUILDING, small - no shop building.

BUILDING MATERIALS SALES YARD, including the sale of rock, sand, gravel and the like as incidental part of main business. No concrete mixing on premises.

CONTRACTOR'S EQUIPMENT STORAGE YARD or PLANT.

DRAYING YARD or TERMINAL.

ELECTRICAL RECEIVING or TRANSFORMING STATION.

FREIGHTING YARD or TERMINAL.

LUMBER YARD, retail - including only incidental mill work and use of power or electric shop tools when conducted a completely enclosed area or room within a building (see Section 12.17.5 B. 5. (d) for limitations) - lumber may be stored higher than wall or fence.

MOTION PICTURE PRODUCTION (including outdoor sets).

OPEN STORAGE - no storage of impounded or wrecked autos and the like (see Sections 12.17.5 B. 5. (b) and 12.17.5 B. 9. (d) for limitations).

PARKING of TRUCKS or BUSES.

PUBLIC UTILITY SERVICE YARD.

RECREATIONAL VEHICLE STORAGE.

STORAGE, including open and incidental.

TELEVISION PRODUCTION (including outdoor sets).

TELEVISION STUDIO.

TRUCKING YARD or TERMINAL.

VIDEO and OTHER MEDIA PRODUCTION (including outdoor sets).

M1 LIMITED INDUSTRIAL ZONE

Note: there are four separate alphabetic use lists in this zone category.

A number sign (#) indicates that only previously prepared materials or ingredients may be used in the manufacturing process.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area.

ZONE C2 COMMERCIAL USES except housing, day care, eldercare and nursing care facilities, sanitariums, and hospitals;

conducted in compliance with all building enclosure and fence enclosure requirements of the C2 Zone.

ZONE MR1 USES conducted in full compliance with Zone MR1 regulations.

Conditional and Public Benefit Uses:

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHILD CARE FACILITY (primarily for children of local workers), according to Section 12.24 W. 51.

CHURCH, according to Section 12.24 W. 9.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

CYBER CAFÉ – containing five or more computers or terminals, according to ZA 2003-2970 and Section 12.24 W. 34.

DANCE HALL, according to Section 12.24 W. 18. (a).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE BOARDING, BREEDING, grazing, raising or training (commercial), according to Section 12.24 W. 5.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (4).

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

FUNERAL PARLOR, according to Section 12.24 W. 29.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOSTESS DANCE HALL, according to Section 12.24 W. 18. (b).

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (when more than half of the lot is located in a commercial zone), according to Section 12.24 W. 24. (b).

JOINT LIVING / WORK QUARTERS for ARTISTS and

ARTISANS, according to Section 12.24 X. 13.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MASSAGE PARLOR, adult entertainment business, according to Section 12.24 W. 18. (c).

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MODEL HOME, according to Section 12.24 X. 15.

MORTUARY or MORTUARY SCHOOL, according to Section 12.24 W. 29.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL (primarily for children of local workers), according to Section 12.24 W. 51.

PAWNSHOP, according to Section 12.24 W. 33.

PENNY ARCADE, containing 5 or more coin, slug, or electronic controlled game machines, according to Section 12.24 W. 34.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

RECYCLING MATERIALS SORTING FACILITY, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (e), according to Section 12.24 U. 22. (d).

RIDING ACADEMY, SCHOOL, CLUB, or STABLE, according to Section 12.24 W. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SEXUAL ENCOUNTER ESTABLISHMENT, according to Section 12.24 W. 18. (c).

SHELTER for the HOMELESS, fewer than 30 beds, with reduced parking requirements, performance standards according to Section 14.00 A 8.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

STORAGE BUILDING for HOUSEHOLD GOODS, including truck rentals, less than 500 feet from an A or R Zone, according to Section 12.24 W. 50.

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TEMPORARY STORAGE of ABANDONED, PARTIALLY DISMANTLED, OBSOLETE, or WRECKED AUTOMOBILES (not including wrecking, dismantling, storage, or sale of used parts), according to Section 12.24 W. 48.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, when the property containing the facility is located across the street from, abutting, or adjoining a residential use or A or R Zone, including the RA Zone, and/or if the facility cannot meet the Wireless Telecommunication Facilities standards contained in Section 12.21 A.20. of this Code, according to Section 12.24 W. 49.

The following uses are to be conducted wholly within a completely enclosed building, except for incidental storage yard enclosed on all sides with a 6-foot, solid wall or fence and automobile parking enclosed and improved as required by Section 12.21 A. 6:

Same Limitations as MR1 Zone Pertaining to Enclosure Requirements, Type and Location of Equipment and Processes Used.
Avoiding Annoyances and Purposes Same as MR1 Zone.

AEROSOL (pressure products) PACKAGING - excepting the use or packaging of liquor petroleum products (ZAI 1598).

AIRCRAFT ENGINE or AIRCRAFT PARTS REPAIRING, RECONDITIONING or REBUILDING, no engine testing or aircraft assembly (ZAI 2156).

ANIMAL HOSPITAL - no outside keeping of animals - no open runs (also see Zone MR1).

ASBESTOS PRODUCTS MANUFACTURING.

AUTOMOBILE REBUILDING and RECONDITIONING, wholesale.

AUTOMOTIVE PAINTING, UPHOLSTERING, BODY and FENDER REPAIRING or UNDERCOAT SPRAYING, wholesale.

AUTOMOTIVE UPHOLSTERING .

AWNING STORE.

BABBITT METAL MANUFACTURING.

BATTERY REBUILDING.

BEVERAGE MANUFACTURING, non-alcoholic.

BLACKSMITH SHOP - no drop hammer - punch press over 20 ton capacity only when approved by Building Department (also see Zone MR1).

BLENDING and MIXING of COMPOUNDS# for WATER SOFTENING, BOILER CLEANING, rust or corrosion prevention - cold process with no heating or boiling using previously prepared ingredients which are non-explosive, non-flammable and which do not produce noxious or dangerous odors, fumes, dust or gases, nor change in chemical composition (see ZAI 1294).

BODY and FENDER REPAIRING, wholesale.

BOX and CRATE ASSEMBLY - from previously prepared stock.

BOX SPRING MANUFACTURING - previously manufactured springs.

BROOM MANUFACTURING#.

BRUSH MANUFACTURING#.

BUILDING FURNISHINGS CLEANING.

BUTANE GAS FILLING STATION.

CABINET SHOP (same limitations as for Wood Products Manufacturing -also see Carpenter Shop in Zone C2).

CANDLE MANUFACTURING# - no rendering.

CARBON PAPER MANUFACTURING#.

CAT BREEDING or BOARDING - no outside keeping of animals - no open runs.

CD, DVD, VIDEO TAPE, or CASSETTE MANUFACTURING - from previously made plastic or other blanks.

CELLULOSE PRODUCTS MANUFACTURING#.

CENTRAL STEAM (heated or chilled water) DISTRIBUTING PLANT (service to buildings on adjacent sites - ZAI 2143).

CERAMIC PRODUCTS MANUFACTURING - previously pulverized clay; no brick, tile, terra cotta or sewer pipe (also see Zones CM and MR1).

CLOTH SHRINKING, SPONGING or WATERPROOFING.

COFFEE ROASTING.

CONCERT HALL, unlimited seating capacity (also see Zone C2).

CORNICE WORKS.

CREAMERY.

DAIRY PRODUCTS DEPOT - wholesale or retail deliveries.

DAIRY PRODUCTS MANUFACTURING (also see Zone CM for Ice Cream Manufacturing).

DEHYDRATING OF FOOD - no noxious or offensive odors.

DISTRIBUTING STATION, milk.

DOG and CAT FOOD MANUFACTURING - no fish products - no slaughtering - no noxious or offensive odors.

DOG and CAT HOSPITAL - no outside keeping of animals - no open runs (also see Zone MR1).

DOG KENNEL, breeding, boarding, training or sale of dogs (no outside keeping of animals - no open runs (also see Zone MR1 and Section 12.24 W. 25).

DRY CLEANING PLANT.

EGG CANDLING and wholesale distribution.

ELECTRIC FOUNDRY - no brass, bronze, iron, steel or zinc.

ELECTRIC GENERATOR or motor manufacturing - no foundry.

ELECTRIC MOTOR REPAIR, wholesale (also see Zone C2).

ELECTROPLATING WORKS.

FABRIC SHRINKING, SPONGING, WATERPROOFING or DYEING.

FABRICATION of LIGHT WEIGHT STEEL.

FISH DISTRIBUTING, wholesale or stock wagon operators.

FLOCKING and SILK SCREEN PROCESSING.

FLOUR MILL.

FOOD DEHYDRATING PLANT - no noxious or offensive odors.

FOUNDRY - no brass, manganese, bronze, iron, steel or zinc - no noxious fumes or odors.

FREIGHT FORWARDING STATION or TERMINAL.

FRUIT CANNERY - no noxious or offensive odors - (also see Cannery in Zone MR1).

FRUIT PRESERVING.

GRAIN ELEVATOR.

HAIR CARE PRODUCTS MANUFACTURING# (also see Zone MR1).

HEATING EQUIPMENT MANUFACTURING (see Foundry for limitations).

HONEY PROCESSING and PACKAGING.

ICE MANUFACTURING or DISTRIBUTING - including dry ice.

ICE STORAGE PLANT.

INK MANUFACTURING#.

INTERIOR DECORATING STORE (also see Zone C1.5).

IRON WORKS, ornamental - no foundry or drop hammer - punch presses over 20 ton capacity only when approved by Building Department.

JEWELRY MANUFACTURING.

JUICE MANUFACTURING.

JUKE BOX MANUFACTURING and ASSEMBLY.

KENNEL, dog and cat - no outside keeping of animals, no open runs (also see Zone MR1 and Section 12.24 W. 25).

LAUNDRY PLANT.

LEATHER MACHINE BELT MANUFACTURING#.

LIQUOR or SPIRITS RECTIFYING – aggregate capacity of stills not over 500 gallons.

MACHINERY (farm) REPAIRING and OVERHAULING.

MEAT CUTTING PLANT - no slaughtering - no rendering or refining of fats and oils, no noxious or offensive odors.

METAL PRODUCTS INSPECTION by X-RAY.

MILK BOTTLING or DISTRIBUTING STATION.

MOTOR COACH REPAIRING or OVERHAULING.

MOTORCYCLE or MOTOR SCOOTER REPAIRING, wholesale.

OFFICIAL POLICE GARAGE (see restrictions Section 12.17.6 A. 8).

ORTHOPEDIC or SURGICAL SUPPLIES MANUFACTURING.

PACKING PLANT, fruit or vegetable.

PAINT MIXING - not employing a boiling process.

PECTIN MANUFACTURING, from fruit or citrus peel (no manufacturing of alcohol or distillation of liquors).

PHONOGRAPH RECORD MANUFACTURING - from previously made plastic or other blanks.

PLASTIC PRINTING PLATE PRODUCTION#.

PLUMBING SHOP (also see Zone C2).

POLISH MIXING, automobile or furniture (not employing a boiling process).

POTATO CHIP FACTORY - no noxious or offensive odors.

POULTRY KILLING.

PRINTING or STENCILING DESIGNS on FABRIC, CLOTH or WALLPAPER.

PUMPING PLANT - except oil wells.

RABBIT KILLING, incidental to retail business.

REFRIGERATION PLANT - storage of fruits, vegetables, meat, fish, eggs or dairy products.

SAUSAGE MANUFACTURING (no noxious or offensive odors - no rendering or refining of fats and oils).

SHELLAC MIXING - no cooking.

SIGN PAINTING (also see Zone C2).

SKATING RINK or SKATE PARK (indoor) - in completely enclosed building.

SOAP MANUFACTURING - cold mix only - no rendering or refining of fats or oils.

SOFT DRINK MANUFACTURING or BOTTLING.

STARCH (liquid) MIXING and BOTTLING from dry starch.

STENCIL MANUFACTURING.

STORAGE BUILDING for HOUSEHOLDGOODS, including truck rentals (more than 500 ft. from A or R Zone, building no higher than 37 ft.).

TAXIDERMIST (also see Zone C2).

TOOL MANUFACTURING - excluding foundries, drop hammers and automatic screw machines - punch presses over 20 ton capacity, only when approved by the Building Department.

TRAILER MANUFACTURING (no fabrication of chassis).

TYPEWRITER RIBBON MANUFACTURING#.

VEGETABLE CANNERY - no noxious or offensive odors (also see Cannery in Zone MR1).

VENETIAN BLIND MANUFACTURING.

VENTILATING DUCT MANUFACTURING.

VETERINARY HOSPITAL - no outside keeping of animals - no open runs (also see Zone MR1).

WATERPROOFING COMPOUND MANUFACTURING - from previously pulverized, flasked or liquefied ingredients which are non-explosive, non-flammable and which do not produce noxious or dangerous odors, dust, fumes or gases.

WATER SOFTENING UNIT, servicing and regeneration plant.

WAX POLISH# (for automobiles, floors and furniture) BLENDING, MIXING, and PACKAGING - from previously prepared waxes or liquid ingredients which are non-explosive, non-flammable and which do not produce noxious or dangerous odors, dust, fumes or gases and not involving boiling process.

WELDING, acetylene or electric - no manufacturing of machinery listed in Zone M3 or fabricating of products from steel plate or structural steel.

WINDOW SHADE MANUFACTURING - wood or metal.

WOOD PRODUCTS MANUFACTURING – only incidental mill work - planers, routers, stickers and molders operated in room with doors and windows closed.

WROUGHT IRON, iron works, ornamental.

<u>The following uses are to be conducted wholly within a completely enclosed building or in an area enclosed on all sides with a solid wall or fence, not less than 6 feet in height</u>:

BUS STORAGE or OPERATING YARD.

CEMENT (bulk) TRANSFER, from enclosed dustproof hopper railroad cars to enclosed dustproof hopper cement truck using

closed dustproof conveyed "Bazooka" - no silos or manufacturing (also see Zone M3 - ZAI 1676).

CEMENT MIXER RENTAL.

CESSPOOL PUMPING, CLEANING, and DRAINING EQUIPMENT STORAGE YARD.

CLAY PRODUCTS STORAGE YARD.

COMMERCIAL VEHICLE RENTAL and STORAGE.

COMMUNITY ANTENNA FACILITY for cable television or radio service (also see Zone C2).

CONTRACTOR'S EQUIPMENT RENTAL YARD or PLANT.

FEED STORAGE and SALES YARD - no animal keeping.

FUEL YARD (same limitations as Wood Yard).

GARDENER'S REFUSE COLLECTION YARD or STATION - no burning, composting, processing or sorting - no refuse kept over 48 hours.

HOUSEHOLD MOVING TRUCK REPAIR and STORAGE.

LUMBER YARD, retail - only incidental mill work - planers, routers, stickers, and molders operated in room with doors and windows closed - no lumber salvaging.

MOVING VAN STORAGE or OPERATING YARD.

PRODUCE YARD or TERMINAL.

RADIO BROADCASTING TRANSMITTER.

TANK TRUCK PARKING or STORAGE (see Section 57.32.38 of the Los Angeles Municipal Code).

TELEVISION BROADCASTING TRANSMITTER with incidental antenna towers.

TRACTOR RENTAL YARD.

TRAILER (utility) RENTAL and STORAGE.

TRUCK RENTAL, SALES or STORAGE YARD for trucks with registered net weight over 5,600 pounds.

WATER WORKS or STORAGE FACILITIES.

WOOD YARD (no sawing except in completely enclosed building).

<u>The following uses are permitted without restriction as to enclosed yard or building</u>:

ARENA, AUDITORIUM or STADIUM - unlimited seating capacity.

BASEBALL STADIUM – unlimited seating capacity.

BOXING ARENA.

CONCERT HALL.

FOOTBALL STADIUM.

RESERVOIR, water.

SPORTS STADIUM.

WIRELESS TELECOMMUNICATION FACILITY, including radio and television transmitters (must meet standards under Sec. 12.21.A 20, cannot be across the street from, abutting, or adjoining a residential use or an A or R Zone.).

WRESTLING ARENA - unlimited seating capacity.

MR2 RESTRICTED INDUSTRIAL ZONE

Note: there are three separate alphabetic use lists in this zone category.

A number sign (#) indicates that only previously prepared materials or ingredients may be used in the manufacturing process.

ZONE MR1 USES, subject to the same limitations specified in the MR1 Zone.

<u>Conditional and Public Benefit Uses</u>:

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

CAFÉ, for use by the general public, according to Section 12.24 W. 40.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHILD CARE FACILITY (primarily for children of local workers), according to Section 12.24 W. 51.

CHURCH, according to Section 12.24 W. 9.

CIRCUS QUARTERS or MENAGERIE, according to Section 12.24 W. 10.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

COLUMBARIUM, outside cemetery, according to Section 12.24 W. 12.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CREMATORIUM, outside cemetery, according to Section 12.24 W. 12.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

EQUINE BOARDING, BREEDING, GRAZING, RAISING, or TRAINING (commercial), according to Section 12.24 W. 5.

FIRE STATION, performance standards, according to Section 14.00 A. 3.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS, according to Section 12.24 X. 13.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MAUSOLEUM, outside cemetery, according to Section 12.24 W. 12.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MODEL HOME, according to Section 12.24 X. 15.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL (primarily for children of local workers), according to Section 12.24 W. 51.

POLICE STATION, performance standards, according to Section 14.00 A. 3.

PUBLIC UTILITIES and PUBLIC SERVICE USES and STRUCTURES, except wireless telecommunication facilities and radio or television transmitters, according to Section 14.00 A. 6.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, according to Section 12.24 U. 22. (a).

RECYCLING MATERIALS SORTING FACILITY, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (e), according to Section 12.24 U. 22. (d).

RESTAURANT, for use by the general public, according to Section 12.24 W. 40.

RIDING ACADEMY, SCHOOL, CLUB, or STABLE, according to Section 12.24 W. 5.

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

AIRCRAFT FACTORY.

ANIMAL KEEPING or RAISING, domestic - not more than five swine - no stock yards or cattle feeding yards - no new animal kennel within 500 feet of a residential zone.

ARMS MANUFACTURING (no explosive materials).

BAG CLEANING - employing tubular vacuum cleaning and efficient dust collecting equipment in completely enclosed building.

BAG STORAGE, SORTING, COLLECTION or BALING.

BOLT or SCREW THREAD ROLLING or CUTTING.

BOTTLE WASHING, COLLECTION, or STORAGE - in a completely enclosed building.

BOX FACTORY or COOPERAGE.

BREWERY.

CANVAS, CLOTH, CORK, EXTERIOR or TEXTILE MANUFACTURING#.

CARPET and RUG MANUFACTURING#.

CATTLE BREEDING, GRAZING, RAISING, or TRAINING.

CATTLE KEEPING.

CHICKEN KEEPING and RAISING.

CHINCHILLA KEEPING and RAISING.

CLOTH MANUFACTURING#.

COIL SPRING MANUFACTURING# - inner springs for mattresses and upholstered furniture using only coiling and knotting machines – light-weight wire.

CORK MANUFACTURING#.

DIE CASTING.

EARTHWORK or GRUB RAISING.

ELECTRICAL EQUIPMENT MANUFACTURING.

EMBALMING.

ENAMELING WORKS#.

EQUINE KEEPING or RAISING (see Animal Keeping).

EXCELSIOR MANUFACTURING#.

FENCING, woven wire MANUFACTURING - from previously fabricated material - no galvanizing.

FISH KEEPING or RAISING.

FOWL KEEPING or RAISING.

FROG KEEPING or RAISING.

FUNERAL PARLOR.

FURNITURE MANUFACTURING.

GOAT KEEPING or RAISING.

HOG KEEPING, five or fewer.

INNER SPRING MANUFACTURING.

INSECTICIDE or PESTICIDE BLENDING or MIXING# - previously manufactured ingredients - cold process.

LIQUID FERTILIZER MANUFACTURING# - from previously manufactured chemicals and other inorganic materials by dissolving in water.

LUBRICATING OIL, CANNING and PACKAGING.

MATCH MANUFACTURING, safety paper only.

MORTUARY or MORTUARY SCHOOL.

NITROGEN MANUFACTURING, COMPRESSING, and BULK STORAGE.

NUTRIA KEEPING or RAISING.

OXYGEN MANUFACTURING, COMPRESSING, and BULK STORAGE.

PICKLE MANUFACTURING - in a completely enclosed building.

PIGEON KEEPING or RAISING.

POULTRY KEEPING, RAISING, or HATCHERY.

RABBIT RAISING.

ROLL FORMING of METAL, COLD PROCESS.

RUG MANUFACTURING#.

SACK STORAGE, SORTING, COLLECTION, or BALING.

SCREW MACHINE PRODUCTS MANUFACTURING.

SCREW THREAD ROLLING or CUTTING.

SHEEP KEEPING or RAISING.

SNAKE or REPTILE KEEPING or RAISING.

STABLE, private.

SWINE KEEPING, five or fewer.

TEXTILE MANUFACTURING#.

TURKEY KEEPING or RAISING.

UNDERTAKING.

VINEGAR MANUFACTURING (in a completely enclosed building).

WIRE FENCING MANUFACTURING - from previously fabricated material - no galvanizing.

WOVEN WIRE MANUFACTURING (same limitations as Fencing Manufacturing).

YEAST MANUFACTURING - in a completely enclosed building.

The following uses when conducted wholly within a completely enclosed building or enclosed by a solid wall or solid fence at least 6 feet in height (see Section 12.17.6 B. 3 - no stored material or equipment may be higher than the enclosing wall or fence, except for lumber yards):

AGRICULTURAL EQUIPMENT SALES YARD, wholesale.

BARREL STORAGE, empty.

BUILDING MATERIALS SALVAGE YARD.

LUMBER YARD, wholesale.

MONUMENT WORKS.

PLANING MILL.

TRUCK and UTILITY TRACTOR RENTAL of trucks with registered net weight over 5,600 pounds.

The following uses when conducted wholly within an enclosed building:

JUNK COLLECTION, SORTING, STORAGE, or BALING.

PAPER COLLECTION, SORTING, STORAGE, or BALING.

RAG COLLECTION, SORTING, STORAGE, or BALING.

SCRAP METAL COLLECTION, SORTING, STORAGE, or BALING.

M2 LIGHT INDUSTRIAL ZONE

Any Open Lot Use Permitted in the A or R Zones, Which Does Not Involve the Use of Buildings or Structures Other Than Accessory Buildings Incident to the Use of Land.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area.

ZONES M1 or MR2 USES with no building or enclosed area required, except where such requirement is indicated below, but not including any of the following:

Any building permitted in any R Zone, other than accessory buildings incident to the use of the land;

Any building containing dwelling units or guest rooms;

The open air sale of merchandise from a privately owned vacant lot or drive-in theater.

Cement or concrete products manufactured in the open.

Conditional and Public Benefit Uses:

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHILD CARE FACILITY (primarily for children of local workers), according to Section 12.24 W. 51.

CHIPPING and GRINDING ACTIVITIES (not fully enclosed), according to Section 12.24 W. 8.

CHURCH, according to Section 12.24 W. 9.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CYBER CAFÉ – containing five or more computers or terminals, according to ZA 2003-2970 and Section 12.24 W. 34.

DANCE HALL, according to Section 12.24 W. 18. (a).

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (4).

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HAZARDOUS WASTE FACILITY, storage and/or treatment, according to Section 12.24 U. 10.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOSTESS DANCE HALL, according to Section 12.24 W. 18. (b).

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (when more than half of the lot is located in a commercial zone), according to Section 12.24 W. 24. (b).

JOINT LIVING / WORK QUARTERS for ARTISTS and ARTISANS, according to Section 12.24 X. 13.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MASSAGE PARLOR, adult entertainment business, according to Section 12.24 W. 18. (c).

MEDICAL WASTE TREATMENT, according to Section 12.24 U. 10.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MODEL HOME, according to Section 12.24 X. 15.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL (primarily for children of local workers), according to Section 12.24 W. 51.

OUTDOOR OPEN SALES, according to Section 12.24 W. 42. (a).

PAWNSHOP, according to Section 12.24 W. 33.

PENNY ARCADE, containing 5 or more coin, slug, or electronic controlled game machines, according to Section 12.24 W. 34.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (d), according to Section 12.24 U. 22. (b).

RECYCLING MATERIALS PROCESSING FACILITIES, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (f), according to Section 12.24 U. 22. (c).

RECYCLING MATERIALS SORTING FACILITY, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (e), according to Section 12.24 U. 22. (d).

SANITARIUM, according to Section 12.24 U. 12.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEXUAL ENCOUNTER ESTABLISHMENT, according to Section 12.24 W. 18. (c).

SHELTER for the HOMELESS, fewer than 30 beds, with reduced parking requirements, performance standards according to Section 14.00 A 8.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SOLID WASTE ALTERNATIVE TECHNOLOGY PROCESSING FACILITY, according to Section 12.24 U. 28.

STORAGE BUILDING for HOUSEHOLD GOODS, including truck rentals, less than 500 feet from an A or R Zone, according to Section 12.24 W. 50.

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, when the property containing the facility is located across the street from, abutting, or adjoining a residential use or A or R Zone, including the RA Zone, and/or if the facility cannot meet the Wireless Telecommunication Facilities standards contained in Section 12.21 A.20. of this Code, according to Section 12.24 W. 49.

ADHESIVE MANUFACTURING, liquid - from previously prepared material - no rendering or reduction of vegetable or animal matter.

AIRCRAFT ENGINE TESTING (ZAI 2156).

AIRCRAFT FUELING STATION (see Section 57.04 of the Los Angeles Municipal Code).

AIRCRAFT HANGAR.

AIRCRAFT REPAIRING.

AIRPORT or AIRCRAFT LANDING FIELD.

ALLIGATOR FARM.

ANIMAL KEEPING, wild.

ANIMAL RAISING (see definition of Accessory Use) no hog ranches having more than five swine or stockyards or cattle feeding yard.

ANTI-KNOCK COMPOUND (for gasoline) MANUFACTURING.

APPLIANCES (secondhand) STORAGE, DISPLAY, PROCESSING, or SALES.

AUCTION, open air (also see Stadium, Zones C2 and M1).

AUTOMOBILE DISMANTLING YARD (see limitations, Section 12.19 A. 4. (b)).

AUTOMOBILE IMPOUND YARD or yard for storage of abandoned, dismantled, partially dismantled, obsolete or wrecked automobiles -completely enclosed by solid wall or fence at least 8 feet in height.

AUTOMOBILE WRECKING - in enclosed building or in area completely enclosed by solid wall or fence at least 8 feet in height (see limitations, Section 12.19 A. 4. (b)).

BARRELS and DRUMS (secondhand) STORAGE, DISPLAY, PROCESSING, or SALES (see limitations, Section 12.19 A. 4. (b)).

BATT MANUFACTURING from previously produced fibrous materials and requiring garnetting or carding - in completely enclosed building - no manufacture of jute or shoddy.

BLENDING and MIXING of COMPOUNDS for CASE HARDENING, TEMPERING and cleaning of metals - dry mix and cold process using previously prepared ingredients which are non-explosive, non-flammable and do not produce obnoxious or dangerous odors, dust, fumes or gases - no change in chemical composition (see ZAI 1305).

BOOSTER PUMP STATION, with in-line heater system for oil pipeline - no tanks (also see Booster Pump and Flow Control Station in C2 Zone).

BOXES and CRATES (secondhand) STORAGE, DISPLAY, PROCESSING, or SALES (for limitations see Section 12.19 A. 4. (b)).

BRIQUETTE MANUFACTURING from previously prepared charcoal - enclosed grinding and processing equipment - no burning.

BUILDING MATERIALS SALVAGE YARD (same limitations as for Automobile Wrecking).

CARGO CONTAINER STORAGE YARD.

CARPET or RUG MANUFACTURING.

CATTLE BREEDING, GRAZING, RAISING, or TRAINING - no stockyard or cattle feeding yard.

CEMETERY.

CEMETERY, pet animal - individual burials - no dumping or crematory.

CHAMOIS SKINS MANUFACTURING - by cod oil process - no tanning or curing of fresh hides.

CHICKEN RAISING or HATCHERY.

CHINCHILLA RAISING.

CHIPPING and GRINDING FACILITIES (green waste, in enclosed building).

CIRCUS QUARTERS or MENAGERIE.

CLOTH MANUFACTURING.

COLUMBARIUM.

COOPERATE WORKS.

COMPOSTING FACILITY (green waste, in enclosed building).

CORK MANUFACTURING.

CREMATORIUM, except animals.

CRYPT.

CURING FACILITIES (green waste, in enclosed building).

DAIRY, cattle or goat.

DWELLING, as accessory to industrial development on same lot (only if designed for and used solely by a watchman or caretaker).

ELECTRIC PARTS MANUFACTURING (also see Zone CM).

ELECTRIC RAILROAD YARD - no freight car classification.

ENAMELING WORKS - no manufacturing of enamel, frit or glaze.

ENGINE TESTING, internal combustion or jet propelled only in completely enclosed building so located or soundproofed that the noise or sound level created by the testing operations as measured from any point on the exterior property lines of the site will at no time exceed 75 decibels as determined by the power averages of readings on the A, B and C scales of an approved sound level meter (see ZAI 15411).

EQUINE BOARDING, BREEDING, GRAZING, RAISING, or TRAINING (commercial).

EXCELSIOR MANUFACTURING.

FELT MANUFACTURING - cotton.

FERTILIZER MANUFACTURING, liquid - from previously manufactured chemicals and other inorganic materials by dissolving in water.

FERTILIZER SALES, wholesale - only previously packaged merchandise.

FISH RAISING.

FOX FARM.

FROG RAISING.

FUMIGATING PLANT.

FURNITURE (secondhand) STORAGE, DISPLAY, PROCESSING, or SALES.

GARNETTING or CARDING of PREVIOUSLY PRODUCED FIBROUS MATERIALS to produce batt fillers for quilts, pillows, mattresses, lounging pads, furniture upholstering, etc. - in completely enclosed building - no manufacture of jute or shoddy.

GOAT RAISING.

GRANITE GRINDING, DRESSING, or CUTTING.

HATCHERY, poultry or fish.

HELIPORT.

HOUSE MOVER or WRECKER.

IRON ORE PELLET LOADING and UNLOADING FACILITY - no processing or smelting.

IRON STORAGE, SORTING, COLLECTING, or BALING - in enclosed building.

JUNK YARD (see limitations under Section 12.19 A. 4. (b)).

KENNEL, dog or cat (also see Zone M1 and Section 12.24 W. 25).

LEAF MOLD and similar plant material STORAGE, COMPOSTING, and PACKAGING - no garbage, manure or animal droppings - all grinding operations contained within a building.

LIQUID COATING FOR BEVERAGE TANKS, manufacturing of - from previously prepared basic materials and not employing a boiling process.

LIVESTOCK EXHIBITION, sale or stable (see Zone M3 for Stockyards and Feeding Pens).

LUMBER YARD, wholesale - no lumber salvaging.

MACHINERY WRECKING or STORAGE YARD (same limitations as for Automobile Wrecking).

MARBLE GRINDING, DRESSING, or CUTTING.

MARINE CARGO LOADING or UNLOADING WHARF or DOCK, except Marine Oil Terminal (see Zone M3).

MAUSOLEUM.

MENAGERIE (see definition of Accessory Use).

MENTAL INSTITUTION, when operated as a correctional or penal institution (also see Hospital in Zone C2).

METAL ROLL FORMING, cold process.

MICE or GUINEA PIG RAISING for wholesale distribution or experimental purposes (also see Pet Shop in Zone C2).

MILK CONTAINER ROLL FORMING, metal, cold process, retinning and reconditioning (see ZAI 1158 for conditions and limitations).

MINK FARM.

MONUMENT WORKS.

MORGUE.

MULCHING FACILITIES (in enclosed building).

NUTRIA RAISING.

OIL PIPELINE BOOSTER PUMP STATION, with in-line heater system - no tanks.

OLIVE OIL EXTRACTION.

OSTRICH FARM.

PAPER SCRAP or WASTE STORAGE, SORTING, COLLECTING, or BALING - in enclosed building.

PETROLEUM PRODUCTS BULK DISTRIBUTING STATION - maximum capacity 100,000 gallons (see Section 57.04 of the Los Angeles Municipal Code).

PIGEON RAISING.

PIPE STORAGE YARD - except metal pipe over 4 inches inside diameter.

PLANING MILL.

PLASTER STAFF WORKS.

POLISH MANUFACTURING - except stove or shoe polish - see Wax Polishes in Zone M1.

POULTRY HATCHERY.

POULTRY SLAUGHTERING, wholesale.

POWDERED METAL PARTS or ARTICLES MANUFACTURING, sintered metals - previously manufactured powdered metal (see ZAI 1462).

RABBIT RAISING.

RABBIT SLAUGHTERHOUSE, wholesale.

RADIOACTIVE WASTE MATERIAL, low level packaging or collection of prepackaged for off-site disposal under U.S.A.E.C. license - in completely enclosed building.

RAG STORAGE, SORTING, COLLECTION, or BALING - in enclosed building.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS (subject to the provisions of Section 12.21 A. 18).

RECYCLING MATERIALS PROCESSING FACILITIES (subject to the provisions of Section 12.21 A. 18).

RETINNING and RECONDITIONING OF MILK CONTAINERS (see ZAI 1158 for conditions and limitations).

RIDING ACADEMY, SCHOOL, CLUB, or STABLE.

RIFLE RANGE.

RODEO grounds or stadium.

RUBBER CEMENT MANUFACTURING - solution of rubber chunks in a thinner and agitation thereof in a mixer.

RUG MANUFACTURING.

SALVAGE BUSINESS, junk - in enclosed building (also see Boxes and Barrels, secondhand).

SCRAP IRON STORAGE, SORTING, COLLECTION, or BALING - in enclosed building.

SECONDHAND BOX or CONTAINER STORAGE, DISPLAY, PROCESSING, or SALES (see limitations under Section 12.19 A. 4. (b)).

SECONDHAND FURNITURE and APPLIANCE STORAGE, DISPLAY, PROCESSING, or SALES (see limitations under Section A. 4. (b)).

SHOOTING RANGE.

SHRIMP (frozen) CLEANING, BREADING, PACKAGING, and REFREEZING - no cooking, smoking, or curing.

SKATING RINK or SKATE PARK (indoor) - in completely enclosed building (see also Zone C2).

SKEET or TRAP SHOOTING.

STABLE, commercial.

STABLE, livery, boarding, or for stock sales.

STATUARY MANUFACTURING - clay, stone, plaster or papier maché.

STONE MONUMENT WORKS.

STOVE MANUFACTURING - no foundry or casting.

TANK COATING MANUFACTURING - from prepared basic materials and not employing a boiling process.

TANK RETINNING and MANUFACTURING (see ZAI 1158 for conditions and limitations).

TELEVISION STATION.

TEXTILE MANUFACTURING.

TRADE SCHOOL (also see Zone C2).

TREE WRECKING YARD.

TURKEY HATCHERY.

VINEGAR MANUFACTURING.

WHARF or DOCK FOR MARINE CARGO, except marine oil terminal (see Zone M3).

WILD ANIMAL FARM.

WIRE MANUFACTURING - cold drawing process.

ZOO.

M3 HEAVY INDUSTRIAL ZONE

Note: there are two separate alphabetic use lists in this zone category.

NOTE: All retail stores, shops or businesses shall be limited to less than 100,000 square feet of floor area.

Conditional and Public Benefit Uses:

AUTOMOTIVE USES, other, according to Section 12.24 W. 4.

BAR, according to Section 12.24 W. 1; must meet ABC requirements.

BEER TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

CEMETERY, performance standards, according to Section 14.00 A. 1.

CHILD CARE FACILITY (primarily for children of local workers), according to Section 12.24 W. 51.

CHURCH, according to Section 12.24 W. 9.

COCKTAIL LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

CYBER CAFÉ – containing five or more computers or terminals, according to ZA 2003-2970 and Section 12.24 W. 34.

DANCE HALL, according to Section 12.24 W 18 a.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMER'S MARKET, according to Section 12.24 X. 6. (a). (4).

FIREARM / AMMUNITION SALES, according to Section 12.24 W. 41.

GARBAGE, FAT, OFFAL, or DEAD ANIMAL REDUCTION or RENDERING, according to Section 12.24 W. 22.

GASTROPUB, according to Section 12.24 W. 1; must meet ABC requirements.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

HAZARDOUS WASTE FACILITY, disposal, according to Section 12.24 U 11.

HAZARDOUS WASTE FACILITY, storage and/or treatment, according to Section 12.24 U. 10.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL, according to Section 12.24 U. 12; incidental Heliport, according to Section 12.24 W. 23.

HOSTESS DANCE HALL, according to Section 12.24 W. 18. (b).

HOTEL, motel, apartment hotel, hostel, transient occupancy residential structure (when more than half of the lot is located in a commercial zone), according to Section 12.24 W. 24. (b).

JOINT LIVING / WORK QUARTERS for ARTISTS and

ARTISANS, according to Section 12.24 X. 13.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, public, performance standards, according to Section 14.00 A. 3.

LIQUOR STORE, according to Section 12.24 W. 1; must meet ABC requirements.

LOUNGE, according to Section 12.24 W. 1; must meet ABC requirements.

MASSAGE PARLOR, adult entertainment business, according to Section 12.24 W. 18. (c).

MEDICAL WASTE TREATMENT, according to Section 12.24 U. 10.

MICROBREWERY, according to Section 12.24 W. 1; must meet ABC requirements.

MODEL HOME, according to Section 12.24 X. 15.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY SCHOOL (primarily for children of local workers), according to Section 12.24 W. 51.

OUTDOOR OPEN SALES, according to Section 12.24 W. 42. (a).

PAWNSHOP, according to Section 12.24 W. 33.

PENNY ARCADE, containing 5 or more coin, slug, or electronic controlled game machines, according to Section 12.24 W. 34.

RECYCLABLE MATERIALS COLLECTION, BUYBACK CENTERS, MOBILE RECYCLING CENTERS, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (d), according to Section 12.24 U. 22. (b).

RECYCLING MATERIALS PROCESSING FACILITIES, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (f), according to Section 12.24 U. 22. (c).

RECYCLING MATERIALS SORTING FACILITY, when the facility is not in compliance with the conditions set forth in Section 12.21 A. 18. (e), according to Section 12.24 U. 22. (d).

SANITARIUM, according to Section 12.24 U. 12.

SCHOOL, private, elementary, middle, or high, according to Section 12.24 U. 24. (b).

SCHOOL, public, elementary, middle, or high, according to Section 12.24 U. 24. (a).

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SEXUAL ENCOUNTER ESTABLISHMENT, according to Section 12.24 W. 18. (c).

SHELTER for the HOMELESS, fewer than 30 beds, with reduced parking requirements, performance standards according to Section 14.00 A 8.

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SOLID WASTE ALTERNATIVE TECHNOLOGY PROCESSING FACILITY, according to Section 12.24 U. 28.

STORAGE BUILDING for HOUSEHOLD GOODS, including truck rentals, less than 500 feet from an A or R Zone, according to Section 12.24 W. 50.

SWAP MEET, indoor, according to Section 12.24 W. 42. (c).

TAVERN, according to Section 12.24 W. 1; must meet ABC requirements.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WINE BAR, according to Section 12.24 W. 1; must meet ABC requirements.

WINE TASTING ESTABLISHMENT, according to Section 12.24 W. 1; must meet ABC requirements.

WIRELESS TELECOMMUNICATION FACILITY, when the property containing the facility is located across the street from, abutting, or adjoining a residential use or A or R Zone, including the RA Zone, and/or if the facility cannot meet the Wireless Telecommunication Facilities standards contained in Section 12.21 A.20. of this Code, according to Section 12.24 W. 49.

ZONE M2 USES.

ABRASIVES MANUFACTURING - grinding wheels, steel wool, pumice stone, sandblast media, etc.

ACETYLENE GAS MANUFACTURING or STORAGE.

AGAR-AGAR MANUFACTURING.

ALCOHOL MANUFACTURING (also see Liquor and Spirits Rectifying in Zone M1).

AMMONIA MANUFACTURING.

ASBESTOS PROCESSING or GRINDING.

ASPHALT MANUFACTURING or REFINING.

ASPHALT ROOFING PAPER or SHINGLE MANUFACTURING.

AUTOMOBILE DISMANTLING YARD (see limitations under Section 12.20 A. 6. (b)).

AUTOMOBILE PARTS (used) STORAGE.

AUTOMOBILE WRECKING (see limitations under Section 12.20 A. 6. (b)).

AUTOMOTIVE BODY and FRAME MANUFACTURING.

BAG STORAGE, SORTING, COLLECTION, or BALING yard (also see Zone M2).

BARREL or DRUM (steel) MANUFACTURING or RECLAIMING.

BEVERAGE MANUFACTURING, alcoholic (also see Liquor and Spirits Rectifying in Zone M1 and Brewery in Zone MR2).

BLAST FURNACE.

BLEACH MANUFACTURING.

BOILER WORKS.

BOLT MANUFACTURING, cold heading or upsetting.

BONEBLACK MANUFACTURING.

BORROW PIT - to a depth of over 3 feet.

BOTTLE MANUFACTURING.

BOXES and CRATES, sale of secondhand (also see Zone M2).

BRASS FOUNDRY.

BRICK MANUFACTURING.

BRONZE CASTING.

BUILDING BLOCK MANUFACTURING.

BUILDING MATERIALS (used) SALVAGE YARD (also see Zone MR2).

BY-PRODUCT PRODUCTS MANUFACTURING - from fish, meat or animals.

CAN MANUFACTURING or RECONDITIONING.

CANNERY, fish or sauerkraut (also see Zone M2).

CARBON PAPER MANUFACTURING (also see Zone M1).

CASTING, heavyweight.

CATTLE or SHEEP DIP MANUFACTURING.

CD, DVD, VIDEO TAPE, or CASSETTE BLANK MANUFACTURING (also see CD, DVD, Video Tape, or Cassette Manufacturing in Zone M1).

CELLULOSE COMPOUND MANUFACTURING - such as Cellophane, Celluloid, Neoprene or Koroseal, but not including cellulose nitrate manufacturing.

CEMENT (bulk) UNLOADING and DISTRIBUTION - no manufacturing (also see Zone M1 and ZAI 1676).

CEMENT PRODUCTS MANUFACTURING - in the open.

CESSPOOL BLOCK MANUFACTURING.

CHARCOAL MANUFACTURING.

CHEMICAL MANUFACTURING - except acid.

CHEWING TOBACCO MANUFACTURING.

CHLORINE GAS MANUFACTURING.

CLAY PRODUCTS MANUFACTURING (also see Ceramics Products Manufacturing in Zones CM and M1).

COAL DISTILLATION.

COCONUT OIL MANUFACTURING and REFINING.

COKE OVEN.

CONCRETE BATCHING PLANT - transit mix.

CONCRETE PRODUCTS MANUFACTURING - in the open.

COTTON GIN.

COTTON SEED OIL MANUFACTURING and REFINING.

CREOSOTE MANUFACTURING, BULK STORAGE, or TREATMENT of materials.

CREOSOTE PRODUCTS MANUFACTURING.

DEXTRIN MANUFACTURING.

DISINFECTANT MANUFACTURING - involving emission of dust or odor.

DISTILLATION of COAL, TAR, or WOOD.

DISTILLATION of LIQUOR (see Zone M2 for Liquor and Spirits Rectifying).

DYE STUFF MANUFACTURING - from basic materials.

EARTH or SOIL STOCKPILING, DISTRIBUTION, or

EXCAVATING.

EMERY CLOTH MANUFACTURING.

ENAMEL PAINT MANUFACTURING.

ENGINE TESTING, internal combustion or jet propelled (also see Zone M2 and ZAI 1541).

FABRICATING of IRON or STEEL.

FELT MANUFACTURING, burlap, hair or wood (also see Zone M2).

FIBER MANUFACTURING.

FISH CANNING, CLEANING, or CURING.

FISH OIL or FISHMEAL MANUFACTURING.

FISH SMOKING.

FOUNDRY, iron, steel, brass, manganese, bronze, and zinc.

FREIGHT CLASSIFICATION YARD, railroad.

FRIT or GLAZE MANUFACTURING.

GALVANIZING of METAL or METAL PRODUCTS.

GAS (acetylene) STORAGE, HEATING, or ILLUMINATING.

GASOLINE TANK FARM - capacity over 100,000 gallons.

GELATIN MANUFACTURING.

GEOLOGICAL CORE HOLE DRILLING and TESTING (same limitations as for Oil Drilling).

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47 (same limitations as Oil Drilling).

GLASS FIBER MANUFACTURING.

GLASS MANUFACTURING.

GLUCOSE MANUFACTURING.

GRAIN DRYING or FERMENTING.

GRANITE, DECOMPOSED, EXCAVATING or STOCKPILING (same limitations as for Rock Crushing).

GRAPHITE MANUFACTURING.

GRAVEL DISTRIBUTION.

GRAVEL PLANT (see Rock Crushing).

GUTTA-PERCHE, treating or manufacturing products therefrom.

INCINERATOR MANUFACTURING (also see Concrete Products Manufacturing in Zone M1).

INSECTICIDE or PESTICIDE MANUFACTURING – involving emission of dust or odor (also see Insecticide or Pesticide Blending or Mixing in Zone MR2).

IRON FOUNDRY or FABRICATION PLANT.

IRON STORAGE, SORTING, COLLECTION, or BALING YARD (also see Zone M2).

JUNK YARD (see limitations under Section 12.20 A).

JUTE PRODUCTS MANUFACTURING.

LACQUER MANUFACTURING.

LAMPBLACK MANUFACTURING.

LARD MANUFACTURING.

LINOLEUM MANUFACTURING.

LINSEED OIL MANUFACTURING.

LUMBER YARD, used materials and salvaging (also see Lumber Yard, retail in Zones MR1 and MR2).

MACHINERY MANUFACTURING, farm equipment, machine tools, road building equipment, and other heavy equipment manufacturing.

MARINE OIL TERMINAL (see Chapter V, Article 7, Division 95 of the Los Angeles Municipal Code).

MATCH MANUFACTURING (also see Zone M2).

MINING of NATURAL RESOURCES (same limitations as for Rock Crushing).

NAIL MANUFACTURING.

OIL DRILLING EQUIPMENT YARD.

OIL DRILLING or PUMPING and PRODUCTION of OIL, GAS or HYDROCARBONS subject to the provisions of Subsections A and H of Section 13.01 of the Municipal Code.

OIL MANUFACTURING, vegetable.

OILCLOTH MANUFACTURING.

ORE REDUCTION PLANT.

PAINT MANUFACTURING (also see Paint Mixing in Zone M1).

PAPER MANUFACTURING or CONVERTING.

PAPER SCRAP or WASTE STORAGE, SORTING, COLLECTION, or BALING YARD (also see Zone M2).

PETROLEUM PRODUCTS MANUFACTURING.

PETROLEUM PUMPING - no refining (see Oil Drilling).

PHENOL PRODUCTS MANUFACTURING - from previously manufactured phenol.

PHONOGRAPH RECORD BLANK MANUFACTURING (also see Phonograph Record Manufacturing in Zone M1).

PIPE RECLAIMING.

PIPE STORAGE YARD, metal - over 4 inches in diameter (also see Zone M2).

PLASTIC MANUFACTURING.

POTASH MANUFACTURING.

POTTERY MANUFACTURING - no restrictions (also see Zone M1).

PULP or PAPER MANUFACTURING.

PYROXYLIN MANUFACTURING.

QUARRY (same limitations for Rock Crushing).

RADIOACTIVE WASTE MATERIAL, low level, packaging or collection of prepackaged (also see Zone M2).

RAG STORAGE, SORTING, COLLECTION, or BALING YARD (also see Zone M2).

RAILROAD REPAIR SHOP.

RAILROAD YARD (also see Electric Railroad Yard in Zone M2).

REFUSE DUMP - no garbage, offal or dead animals.

REFUSE TRANSFER STATION - bones, suet, scrap meat, garbage, rubbish - no incineration, reduction, distillation, rendering or dumping - no refuse kept over 48 hours (also see Zone M1 for Gardener's Refuse Collection Yard and Zone M3 for Refuse Dump).

ROCK CRUSHING or ROCK, SAND, or GRAVEL EXCAVATING (under conditions prescribed by Commission - see Section 13.03 D. 2).

ROCK, SAND, GRAVEL, or EARTH DISTRIBUTION or STORAGE.

ROLLING MILL.

ROOFING MATERIAL FACTORY.

ROPE FACTORY.

ROUNDHOUSE.

RUBBER MANUFACTURING, TREATING, or RECLAIMING PLANT.

RUG MANUFACTURING - from reclaimed materials (also see Zone MR2).

SACK STORAGE, SORTING, COLLECTION, or BALING YARD (also see Zone M2).

SALT WORKS.

SALVAGE BUSINESS, junk (also see Zone M2).

SAND BLASTING.

SAND DISTRIBUTION PLANT.

SAND PIT (same limitations as for Rock Crushing).

SANDPAPER MANUFACTURING.

SAUERKRAUT MANUFACTURING.

SAW MILL.

SCRAP IRON SALES and STORAGE (also see Zone M2).

SCRAP METAL PROCESSING YARD (see limitations under Section 12.20 A. 6. (b)).

SECONDHAND FURNITURE and APPLIANCE STORAGE, DISPLAY, PROCESSING, and SALES (see limitations under Section 12.20 A. 6. (b) - also see Zone M2).

SEWAGE DISPOSAL or TREATMENT PLANT.

SEWER PIPE MANUFACTURING.

SHELLAC MANUFACTURING.

SHINGLE MILL.

SHIP BUILDING.

SHODDY MANUFACTURING.

SHOE POLISH MANUFACTURING.

SIZE MANUFACTURING.

SOAP MANUFACTURING (also see Zone M1).

SODIUM COMPOUNDS MANUFACTURING.

STARCH MANUFACTURING.

STEEL FOUNDRY or FABRICATION PLANT and HEAVYWEIGHT CASTING.

STEEL MILL.

STEEL PIPE MANUFACTURING.

STONE MILL or QUARRY (same limitations as for Rock Crushing).

STOVE MANUFACTURING (also see Zone M2).

STOVE POLISH MANUFACTURING.

SUGAR REFINING.

SURFACE MINING OPERATIONS (see limitations under Section 13.03).

TANK FARM, petroleum - capacity over 100,000 gallons.

TAR DISTILLATION.

TAR PRODUCTS MANUFACTURING.

TAR ROOFING MANUFACTURING.

TAR WATERPROOFING MANUFACTURING.

TERRA COTTA TILE MANUFACTURING.

TILE MANUFACTURING.

TIRE MANUFACTURING.

TOP SOIL STRIPPING, REMOVAL, OR STOCKPILING.

TURPENTINE MANUFACTURING.

VARNISH MANUFACTURING.

VEGETABLE OIL MANUFACTURING.

WALL BOARD MANUFACTURING.

WINERY.

WIRE, application of rubber to.

WOOD PULLING or SCOURING.

<u>The following uses must be located at least 500 feet from any more restrictive zone</u> (inner M3 Zone):

ACID MANUFACTURING.

AMMUNITION MANUFACTURING (see Section 57.70.21 of the Los Angeles Municipal Code).

ANIMAL STOCK YARD or FEEDING PEN.

ARSENAL (see Section 57.70.10 of the Los Angeles Municipal Code).

CANDLE MANUFACTURING involving rendering (also see Zone M1).

CATTLE FEED or SALES YARD.

CELLULOSE NITRATE PRODUCTS MANUFACTURING (see Section 57.70.21 of the Los Angeles Municipal Code).

CEMENT MANUFACTURING, Portland.

CEMETERY, pets or animals (also see Zone M2).

CORRAL, stock sales.

CREMATORY, pet or animal - no dead animal reduction (see Section 12.24 W 22).

DEHYDRATING PLANT, petroleum.

DISTILLATION OF BONES.

DROP FORGE INDUSTRY (manufacturing forgings with power hammers).

EXPLOSIVES MANUFACTURING or STORAGE (see Section 57.70.10 and 57.70.21 of the Los Angeles Municipal Code).

FEEDING PEN, stock.

FERTILIZER MANUFACTURING, PROCESSING, or PACKAGING.

FERTILIZER SALES, wholesale (also see Zone M2).

FIREWORKS MANUFACTURING or STORAGE (see Section 57.55.01 of the Los Angeles Municipal Code).

FORGE PLANT (with power hammers - also see Blacksmith Shop in Zone MR1).

GARBAGE INCINERATION, REDUCTION, or DUMPING.

GAS MANUFACTURING.

GASOLINE REFINING.

GLUE MANUFACTURING (from organic substances).

GOAT FEED or SALES YARD.

GREASE MANUFACTURING or REFINING.

GUNCOTTON PRODUCTS MANUFACTURING (see Section 57.70.21 of the Los Angeles Municipal Code).

GUNPOWDER MANUFACTURING or STORAGE (see Section 57.70.21 of the Los Angeles Municipal Code).

GYPSUM MANUFACTURING, PROCESSING, or GRINDING.

HEATING GAS MANUFACTURING.

HIDES (raw) CURING, TANNING, or STORAGE.

HOG RANCH, FEED, or SALES YARD (also see Hog Keeping in Zones A1 and MR2).

HYDROCHLORIC ACID MANUFACTURING.

LIME MANUFACTURING.

MANURE STORAGE or PROCESSING.

NITRIC ACID MANUFACTURING.

OFFAL or DEAD ANIMAL DUMPING.

OIL DRILLING or PUMPING and PRODUCTION OF OIL, GAS, or HYDROCARBONS (see Outer M3 Zone).

OIL RECLAIMING.

OIL REFINING.

PET ANIMAL CREMATORY.

PETROLEUM DEHYDRATING PLANT.

PETROLEUM REFINING.

PHENOL MANUFACTURING.

PLASTER of PARIS MANUFACTURING.

PYROTECHNIC MANUFACTURING (see Section 57.55.01 of the Los Angeles Municipal Code).

RACE TRACK - automobile, dog, horse, or motorcycle.

RADIOACTIVE WASTE MATERIAL, STORAGE or DISPOSAL AREA under U.S. Nuclear Regulatory Commission license (also see Zones M2 and Outer M3).

REFINERY, petroleum or gasoline.

RUBBISH INCINERATION or STORAGE.

SHEEP FEED or SALES YARD.

SMELTER, tin, copper, zinc, or iron ores.

STOCKYARD or FEEDING PEN.

SULFURIC ACID MANUFACTURING.

SULFUROUS ACID MANUFACTURING.

SWINE RANCH (also see Swine Keeping in Zones A1 and MR2).

TALLOW MANUFACTURING - no rendering.

TANNING, CURING, or STORING of RAW HIDES or SKINS.

[NOTE: Slaughter Houses and Meat Packing Plants are only permitted in the "S" Animal Slaughtering Districts (see Section 13.02 of the Los Angeles Municipal Code).]

SL OCEAN SUBMERGED LAND ZONE

The Following Uses Are Permitted Subject To Provisions And Regulations Of Section 12.20.1 Of The Los Angeles Municipal Code.

COMMERCIAL SHIPPING.

FISHING.

PIER, JETTY, MAN-MADE ISLAND, or FLOATING INSTALLATION, according to Section 12.24 U. 20.

RECREATION.

Any use required by any trust or legislative grant to the City of Los Angeles.

PF PUBLIC FACILITIES ZONE

AMBULANCE SERVICE.

ANY JOINT PUBLIC and PRIVATE DEVELOPMENT USES permitted in the most restrictive adjoining zones if approved by the Director utilizing the procedures described in Section 16.05 E to H. The phrase "adjoining zones" refers to the zones on properties abutting, across the street or alley from or having a common corner with the subject property. If there are two or more different adjoining zones, then only the uses permitted by the most restrictive zone shall be permitted.

ARENA, according to Section 12.24 U. 2.

AUDITORIUM, according to Section 12.24 U. 2.

AUTOMOBILE PARKING, under the provisions of Section 12.21 A. 4.

BINGO (subject to the provisions of Section 12.21 A. 13).

CEMETERY, performance standards, according to Section 14.00 A. 1.

CLINIC, medical or dental.

CONVENTION or EXHIBITION CENTER, according to Section 12.24 U. 21.

CORRECTIONAL or PENAL INSTITUTION, according to Section 12.24 U. 5.

EDUCATIONAL INSTITUTION, according to Section 12.24 U. 6.

ELECTRIC CAR CHARGING STATION, in permitted parking lot.

ELECTRIC POWER GENERATING SITE, PLANT, or STATION, according to Section 12.24 U. 7.

FARMING.

FIRE STATION.

FLOOD CONTROL FACILITY, according to Section 12.24 U. 21.

GARBAGE DUMP, closed, according to Section 12.24 U. 21.

GEOLOGICAL CORE HOLE DRILLING and TESTING, temporary, according to Section 12.24 W. 47.

GOLF COURSE, according to Section 12.24 U. 8.

GOVERNMENTAL ENTERPRISE, performance standards, according to Section 14.00 A. 3.

GOVERNMENT BUILDINGS, structures, offices and service facilities including maintenance yards, provided however, that those uses identified in Section 12.24 U 21 shall require conditional use approval pursuant to that section.

GOVERNMENT-OWNED PARKING FACILITY, according to Section 12.24 U. 21.

HELIPORT, incidental to a Hospital, according to Section 12.24 W. 23.

HISTORICAL VEHICLE COLLECTION (accessory), according to Section 12.24 X. 29.

HOSPITAL.

LAND RECLAMATION PROJECT, according to Section 12.24 U. 13.

LIBRARY, public, not located inside public park.

MUSEUM, nonprofit, performance standards, according to Section 14.00 A. 3.

NATURAL RESOURCE DEVELOPMENT, according to Section 12.24 U. 17.

NURSERY, plant.

POLICE DEPARTMENT DRIVER TRAINING FACILITY.

POLICE STATION.

POST OFFICE and related facilities.

PUBLIC SCHOOL, elementary, middle, or high.

PUBLIC PARKING FACILITIES located under freeway rights-of-way.

PUMPING PLANT, according to Section 12.24 U. 21.

RESEARCH and DEVELOPMENT CENTER, according to Section 12.24 U. 23.

RESERVOIR, water, covered, according to Section 12.24 U. 21.

SEA WATER DESALINATION FACILITY, according to Section 12.24 U. 25.

SEWAGE TREATMENT FACILITY, according to Section 12.24 U. 21.

SHELTER for the HOMELESS, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80).

SOLAR ENERGY SYSTEM STRUCTURES, not otherwise permitted, according to Section 12.24 W. 53.

SOLID WASTE ALTERNATIVE TECHNOLOGY PROCESSING FACILITY, according to Section 12.24 U. 28.

STADIUM, baseball, football, sports, maximum seating capacity for 3,000 people, according to Section 12.24 U. 2.

TRAILERS for USE as TEMPORARY ACCOMMODATIONS for HOMELESS PERSONS, performance standards, according to Section 14.00 A. 9. (a).

WATER WORKS or STORAGE FACILITIES, according to Section 12.24 U. 21.

WIRELESS TELECOMMUNICATION FACILITY, according to Section 12.24 W. 49.

Case No. ZA 2015-2348(ZAI)

LIST NO. 2 of USES PERMITTED IN VARIOUS ZONES IN THE CITY OF LOS ANGELES

(Arranged Alphabetically)

Uses are permitted by-right in zones colored black. Uses require a conditional use permit (CUP) in zones colored red. Uses may be permitted as a public benefit in zones colored green.

Notes:
(‡) indicates that further clarification with a City official may be required.
A. All retail stores, shops, or businesses shall be limited to less than 100,000 square feet of floor area.
B. Refer to appropriate sections of the Zoning Code for further details on restrictions.
C. Uses permitted by exception are not included.
D. This list is for quick reference only. For a more accurate list indicating qualifications, limitations, or restrictions, use the list by Zones or refer to Sections 12.03 through 12.28 of the Zoning Code.

- A -

Abrasives Manufacturing – M3
Accessory Building (to permitted use) – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Accessory Living Quarters – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CM
Accessory Uses – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, , CM, MR1, M1, MR2, M2, M3
Acetylene Gas Manufacturing or Storage – M3
Acid Manufacturing (restrictions) – M3
Acupressurist's Office – CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Acupuncturist's Office – CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Adding Machine Repair – C1.5, C2, C5, CM, M1, M2, M3
Adhesive Manufacturing, liquid – M2, M3
Adult Bookstore (restrictions) – C2, C4, C5, CM, M1, M2, M3
Adult Cabaret (restrictions) – C2, C5, CM, M1, M2, M3
Adult Education Classes – RA, RE, RS, R1, R2, RD, R3, R4, R5
Adult Motel (restrictions) – C2, C4, C5
Adult Motion Picture Theater (restrictions) – C2, C4, C5, CM, M1, M2, M3
Adult Theater (restrictions) – C2, C4, C5, CM, M1, M2, M3
Advertising Signs, statuary or structures, onsite only – C2, C4, C5, CM, M1, M2, M3
Advertising Structures Manufacturing – MR1, M1, MR2, M2, M3
Advertising Studio – C1.5, C2, C4, C5, CM, M1, M2, M3
Aerosol Packaging – M1, M2, M3
Agar-Agar Manufacturing – M3
Agricultural Equipment Sales Yard, wholesale – MR2, M2, M3
Agricultural Uses – A1, A2, RA, MR1, M1, MR2, M2, M3, PF
Air Conditioning Equipment Service – C1.5, C2, C5, CM, M1, M2, M3
Aircraft Engine or Aircraft Part Repairing, Reconditioning, or Rebuilding – M1, M2, M3

Aircraft Engine Testing – M2, M3
Aircraft Factory – MR2, M2, M3
Aircraft Fueling Station – M2, M3
Aircraft Hangar – M2, M3
Aircraft Landing Field – M2, M3
Aircraft Repairing – M2, M3
Airport – M2, M3
Alcohol Manufacturing – M3
Alligator Farm – M2, M3
Alzheimer's / Dementia Care Housing – R5, C1, C1.5, C2, C5
Ambulance Service – C2, C4, C5, CM, M1, M2, M3, PF
Ammonia Manufacturing – M3
Ammunition Manufacturing (restrictions) – M3
Animal (large) Breeding and Boarding (no outside runs) – MR2, M2, M3
Animal (small) Breeding and Boarding (no outside runs) – MR1, M1, MR2, M2, M3
Animal Hospital – MR1, M1, MR2, M2, M3
Animal Keeping, domestic – A1, A2, RA, RE, RS, R1, R2, RMP, R3, R4, R5, MR2, M2, M3
Animal Keeping, wild (see definition of Accessory Use) – M2, M3
Animal Raising – A1, A2, MR2, M2, M3
Animal Stock Yard or Feeding Pen – M3
Animated Cartoon Studio – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Antenna, amateur radio transmission and receiving (restrictions) – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
Anti-Knock Compound (for gasoline) Manufacturing – M2, M3
Antique Shop – C1.5, C2, C4, C5, CM, M1, M2, M3
Antique Shop, in historic building (restrictions) – CUP in RD, R3, R4, R5
Apartment Hotel (restrictions) – (see Hotel)
Apartment House – RD, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Apiary (bee raising) – A1, A2, MR1, M1, MR2, M2, M3
Appliance Rental, household – C2, C5, CM, M1, M2, M3
Appliance Repair, household – C1.5, C2, C5, CM, M1, M2, M3
Appliances (secondhand) Storage, Display, Processing, or Sales – M2, M3
Aquarium – C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in OS
Archery Range – C2, C5, CM, M1, M2, M3
Architect's Office – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Arena (maximum 3,000 seating capacity) – C2, C5, CM, M1, M2, M3; CUP in OS, A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, C1.5, C4, MR1, MR2, PF
Arena (fewer than 25,000 seats) – CUP in MR1
Arena (unlimited seating capacity) – M1, M2, M3
Arsenal – M3
Art Gallery – C1.5, C2, C4, C5, M1, M2, M3
Art Gallery, in historic building (restrictions) – CUP in RD, R3, R4, R5
Art School – CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Art Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Asbestos Processing or Grinding – M3
Asbestos Products Manufacturing – M1, M2, M3
Asphalt Manufacturing or Refining – M3
Asphalt Roofing Paper or Shingle Manufacturing – M3
Assaying – CM, MR1, M1, MR2, M2, M3
Assisted Living Care Housing (restrictions) – R3, RAS3, R4, RAS4, R5; CUP for reduced parking in RD, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5
Astronomical Observatory – C2, C4, C5, CM, M1, M2, M3
Athletic Field – OS, C2, C5, CM, M1, M2, M3
Auction House – C2, C5, CM, M1, M2, M3
Auction, open air – M2, M3

Auditorium (maximum 3,000 seating capacity) – C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in OS, A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, MR1, MR2, PF
Auditorium (fewer than 25,000 Seats) – CUP in MR1
Auditorium (unlimited seating capacity) – M1, M2, M3
Auto Ride Amusement – C2, C5, CM, M1, M2, M3
Automobile Club – C2, C4, C5, CM, M1, M2, M3
Automobile Dismantling Yard – M2, M3
Automobile Display Room – C2, C4, C5, CM, M1, M2, M3
Automobile Impound Yard – M2, M3
Automobile Parking – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Automobile Parts – C2, C4, C5, CM, M1, M2, M3
Automobile Parts, repairing or rebuilding for wholesale – MR1, M1, MR2, M2, M3
Automobile Parts (used) Storage – M3
Automobile Race Track – M3
Automobile Rebuilding or Reconditioning, wholesale – MR1, M1, MR2, M2, M3
Automobile Rental – C2, C4, C5, CM, M1, M2, M3
Automobile Sales, new – C2, C4, C5, CM, M1, M2, M3
Automobile Sales, used – C2, C4, C5, CM, M1, M2, M3
Automobile Storage Area – C2, C5, CM, M1, M2, M3
Automobile Storage Garage – C2, C5, CM, M1, M2, M3
Automobile Window Tinting – C2, C5, CM, M1, M2, M3
Automobile Wrecking – M2, M3
Automotive Assembly, wholesale – MR1, M1, MR2, M2, M3
Automotive Body and Fender Repairing (restrictions) – C2, C4, C5, CM, M1, M2, M3
Automotive Body and Fender Repairing, wholesale – M1, M2, M3
Automotive Body and Frame Manufacturing – M3
Automotive Exhaust Test Station – C2, C5, CM, M1, M2, M3
Automotive Fueling and Service Station (restrictions) – C2, C5, CM, M1, M2, M3; CUP in C1.5, C4
Automotive Glass Shop – (see Automotive Repair)
Automotive Painting – C2, C5, CM, M1, M2, M3
Automotive Painting, wholesale – M1, M2, M3
Automotive Repair – C2, C5, CM, M1, M2, M3; CUP in C4
Automotive Sound Shop – (see Automotive Repair)
Automotive Undercoat Spraying, wholesale – M1, M2, M3
Automotive Upholstering – C2, C5, CM, M1, M2, M3
Automotive Upholstering, wholesale – M1, M2, M3
Automotive Uses, other (restrictions) – CUP in CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Aviary (bird raising) – A1, A2, MR1, M1, MR2, M2, M3
Awning Assembly – CM, MR1, M1, MR2, M2, M3
Awning Manufacturing – MR1, M1, MR2, M2, M3
Awning Store, no fabrication or assembly – C2, C5
Awning Store – CM, M1, M2, M3

- B -

Babbitt Metal Manufacturing – M1, M2, M3
Baby Gym – (see Health Club)

Bag Cleaning – MR2, M2, M3
Bag Storage, Sorting, Collection, or Baling – MR2, M2, M3
Bail Bond Broker – C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Bakery – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Bakery Goods Distributor – CM, MR1, M1, MR2, M2, M3
Bakery Goods Manufacturing – CM, MR1, M1, MR2, M2, M3
Bakery Goods Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Bank – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Banquet Hall – RAS3, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in A1, A2, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, R4
Bar – CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Barber College – C2, C4, C5, CM, M1, M2, M3
Barber Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Barrel or Drum (steel) Manufacturing or Reclaiming – M3
Barrel Storage, empty – MR2, M2, M3
Barrel or Drum (secondhand) Storage, Display, Processing, or Sale – M2, M3
Baseball Batting Range or Cage – C2, C5, CM, M1, M2, M3
Baseball Field – OS, C2, C5, CM, M1, M2, M3
Baseball Stadium (maximum 3,000 seating capacity) – C2, C5, CM, M1, M2, M3
Baseball Stadium (unlimited seating capacity) – M1, M2, M3
Bath, Turkish and the like – C1.5, C2, C4, C5, CM, M1, M2, M3
Bathing Cap Manufacturing – MR1, M1, MR2, M2, M3
Bathtub Manufacturing – MR1, M1, MR2, M2, M3
Battery Manufacturing – MR1, M1, MR2, M2, M3
Battery Rebuilding – M1, M2, M3
Battery Service – C2, C5, CM, M1, M2, M3
Battery Store – C2, C5, CM, M1, M2, M3
Beauty College – C2, C4, C5, CM, M1, M2, M3
Beauty Shop or Parlor – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Bed and Breakfast, in historic building (restrictions) -- CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RW2, R3, R4, R5
Beer Tasting Establishment – CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Beverage Manufacturing, alcoholic – M3
Beverage Manufacturing, non-alcoholic – M1, M2, M3
Bicycle Rental – C2, C5, CM, M1, M2, M3
Bicycle Repair Shop – C2, C5, CM, M1, M2, M3
Bicycle Sales, new – C2, C4, C5, CM, M1, M2, M3
Bicycle Sales, used – C2, C5, CM, M1, M2, M3
Billboard Manufacturing – MR1, M1, MR2, M2, M3
Billiard Parlor – C2, C5, CM, M1, M2, M3
Bingo – OS, A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3, PF
Bird Store – C2, C4, C5, CM, M1, M2, M3
Blacksmith Shop – MR1, M1, MR2, M2, M3
Blast Furnace – M3
Bleach Manufacturing – M3
Blending and Mixing of Compounds for Case Hardening, Tempering – M2, M3
Blending and Mixing of Compounds for Water Softening, Boiler Cleaning – M1, M2, M3
Bloodmobile – RAS3, RAS4, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Blueprinting – C1.5, C2, C4, C5, CM, M1, M2, M3

Boarding Home for Aged, no medical or nursing care – RAS3
Boarding Home for Aged, with special care – R5, C1, C1.5, C2, C5
Boarding Home for Aged, with special care, philanthropic – R4, RAS4, R5, C1, C1.5, C2, C5
Boarding House, five or fewer guest rooms or light housekeeping rooms – RD, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Boarding House (hotel), six or more guest rooms – R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Boat Building, small – MR1, M1, MR2, M2, M3
Boat Rental – C2, C5, CM, M1, M2, M3
Boat Repair, small (< 40' length, < 8'6" width, < 14' height) – C2, C5, CM, M1, M2, M3
Boat Sales, new – C2, C4, C5, CM, M1, M2, M3
Boat Sales, used – C2, C5, CM, M1, M2, M3
Body and Fender Repairing, automotive (restrictions) – C2, C4, C5, CM, M1, M2, M3
Body and Fender Repairing, automotive, wholesale – M1, M2, M3
Boiler Works – M3
Bolt Manufacturing – M3
Bolt or Screw Thread Rolling or Cutting – MR2, M2, M3
Bone Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Boneblack Manufacturing – M3
Book Bindery – CM, MR1, M1, MR2, M2, M3
Book Store, new – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Book Store, used – C1.5, C2, C4, C5, CM, M1, M2, M3
Booster Pump Station, with in-line heater system for oil pipeline – M2, M3
Booster Pump or Flow Control Station, for public utility pipeline – C2, C5, CM, M1, M2, M3
Borrow Pit – M3
Bottle Manufacturing – M3
Bottle Washing, Collection, or Storage – MR2, M2, M3
Bottling Plant – MR1, M1, MR2, M2, M3
Bowling Alley – C2, C5, CM, M1, M2, M3
Bowling on the Green – C2, C5, CM, MR1, M1, MR2, M2, M3
Box and Crate Assembly – M1, M2, M3
Box Factory or Cooperage – MR2, M2, M3
Box Lunch Preparation – CM, MR1, M1, MR2, M2, M3
Box Spring Manufacturing – M1, M2, M3
Boxes and Crates (secondhand) Storage, Display, Processing, or Sales – M2, M3
Boxing Arena (maximum 3,000 seating capacity) – C2, C5, CM, M1, M2, M3
Boxing Arena (unlimited seating capacity) – M1, M2, M3
Brass Foundry – M3; CUP in MR1
Brewery – MR2, M2, M3
Brick Manufacturing – M3
Bridge Club – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Briquette Manufacturing – M2, M3
Broadcasting Studio – C1.5, C2, C4, C5, CM, M1, M2, M3
Broker (stocks, bonds, or real estate) – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Bronze Casting – M3
Broom Manufacturing – M1, M2, M3
Brush Manufacturing – M1, M2, M3
Building Block Manufacturing – M3
Building Furnishings Cleaning – M1, M2, M3
Building Materials Retail Store – C1.5, C2, C5, CM, M1, M2, M3
Building Materials Sales Yard – MR1, M1, MR2, M2, M3
Building Materials Salvage Yard – MR2, M2, M3
Burglar Alarm Business – C1.5, C2, C4, C5, CM, M1, M2, M3
Business College – CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Bus Station – C2, C4, C5, CM, M1, M2, M3

Bus Storage or Operating Yard – M1, M2, M3
Butane Gas Filling Station – M1, M2, M3
Butcher Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Button Making – CM, MR1, M1, MR2, M2, M3
Button Manufacturing – MR1, M1, MR2, M2, M3
By-Product Products Manufacturing, from fish, meat, or animals – M3

- C -

Cabinet Shop – M1, M2, M3
Café – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in MR1, MR2
Café, in historic building (restrictions) – CUP in RD, R3, R4, R5
Café, with entertainment – (see Nightclub)
Cafeteria – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Calculator Repair – C1.5, C2, C5, CM, M1, M2, M3
Calibration and Repair Service Shop, for precision instruments – C2, C5, CM, M1, M2, M3
Camera Repair – C1.5, C2, C5, CM, M1, M2, M3
Camera Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Can Manufacturing or Reconditioning – M3
Candle Manufacturing – M1, M2, M3
Candy Manufacturing – CM, MR1, M1, MR2, M2, M3
Candy Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Cannery, fish or sauerkraut – M3
Cannery (except fish products or sauerkraut) – MR1, M1, MR2, M2, M3
Canvas Manufacturing – MR2, M2, M3
Canvas Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Cap Manufacturing – CM, MR1, M1, MR2, M2, M3
Car Painting – C2, C5, CM, M1, M2, M3
Car Rental – C2, C5, CM, M1, M2, M3
Car Repairing (restrictions) – C2, C5, CM, M1, M2, M3
Car Sales, new – C2, C4, C5, CM, M1, M2, M3
Car Sales, used – C2, C5, CM, M1, M2, M3
Car Upholstering – C2, C5, CM, M1, M2, M3
Car Wash – C2, C5, CM, M1, M2, M3
Carbon Paper Manufacturing – M1, M2, M3
Cargo Container Storage Yard (restrictions) – M2, M3
Carnivals and Rides, transient – P, PB, C2, C5, CM, M1, M2, M3
Carousel – C2, C5, CM, M1, M2, M3
Carpenter Shop – C2, C5, CM, MR1, M1, MR2, M2, M3
Carpet and Rug Cleaning Plant – MR1, M1, MR2, M2, M3
Carpet and Rug Manufacturing – MR2, M2, M3
Case Hardening – MR1, M1, MR2, M2, M3
Casting, heavyweight – M3
Cat Breeding or Boarding – MR1, M1, MR2, M2, M3
Catering, Accessory to Restaurant – (see Restaurant)
Catering Establishment – CM, MR1, M1, MR2, M2, M3
Catering Truck Yard – (see Trucking Yard)
Cattle Breeding, Grazing, Raising, or Training – MR2, M2, M3
Cattle Feed or Sales Yard – M3; CUP in A1, A2
Cattle Keeping – A1, A2, RA, MR2, M2, M3
Cattle or Sheep Dip Manufacturing – M3
CD, DVD, Video Tape, or Cassette Blank Manufacturing – M3
CD, DVD, Video Tape, or Cassette Manufacturing – M1, M2, M3
CD, DVD, Video Tape, or Cassette Player Assembly – CM, MR1, M1, MR2, M2, M3
CD, DVD, Video Tape, or Cassette Rental and Sales, new – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3

CD, DVD, Video Tape, or Cassette Rental and Sales, secondhand – C2, C5, CM, M1, M2, M3
Cellophane Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Cellulose Compound Manufacturing – M3
Cellulose Nitrate Products Manufacturing – M3
Cellulose Products Manufacturing – M1, M2, M3
Cement (bulk) Transfer – M1, M2, M3
Cement (bulk) Unloading and Distribution – M3
Cement Manufacturing – M3
Cement Mixer Rental – M1, M2, M3
Cement Products Manufacturing – MR1, M1, MR2, M2, M3
Cemetery – M2, M3; Public Benefit with performance standards in OS, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, PF
Cemetery, pet animal – M2, M3
Central Steam (heated, or chilled water) Distributing Plant – M1, M2, M3
Ceramic Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Cesspool Block Manufacturing – M3
Cesspool Pumping, Cleaning, and Draining Equipment Storage Yard – M1, M2, M3
Chamois Skins Manufacturing – M2, M3
Charcoal Manufacturing – M3
Charitable Institution – C2, C4, C5, CM, M1, M2, M3
Charter School – (see Public School, Elementary, Middle, or High)
Check Cashing Office – C2, C5, CM, M1, M2, M3
Chemical Manufacturing – M3
Chewing Tobacco Manufacturing – M3
Chicken Hatchery – M2, M3
Chicken Keeping – A1, A2, RA, RE, RS, R1, R2, RMP, R3, R4, R5, MR2, M2, M3
Chicken Raising – A1, A2, MR2, M2, M3
Child Care – (see Day Care)
Child Care Facility – OS, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5; CUP in A1, A2, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3
Child Care Facility (21 to 50 children) – CUP in R3, RAS3
Child Care Facility (primarily for children of local workers) – CUP in CM, MR1, M1, MR2, M2, M3
Chinchilla Keeping – A1, A2, RA, RE, RS, R1, R2, RMP, R3, R4, R5, MR2, M2, M3
Chinchilla Raising – A1, A2, MR2, M2, M3
Chipping and Grinding Activities (enclosed building) – M2, M3; CUP in A1, A2
Chipping and Grinding Activities (not fully enclosed) – CUP in M2
Chlorine Gas Manufacturing – M3
Christmas Tree and Ornament Selling – A1, A2, RA, RW1, R2, RD, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Christmas Tree Farm – A1, A2, RA, MR1, M1, MR2, M2, M3
Church – RAS3, R4, RAS4, R5, CR, C2, C4, C5; CUP in A1, A2, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, C1, C1.5, CM, MR1, M1, MR2, M2, M3
Church, Rescue Mission – C2, C4, C5
Church, Temporary Revival – C2, C5
Cigar Manufacturing – MR1, M1, MR2, M2, M3
Cigarette Manufacturing – MR1, M1, MR2, M2, M3
Circus Quarters or Menagerie – M2, M3; CUP in A1, A2, MR2
Circus, transient – C2, C5, CM, M1, M2, M3
Clay Products Manufacturing – M3
Clay Products Storage – CM, MR1, M1, MR2, M2, M3
Clay Products Storage Yard – M1, M2, M3
Clinic, medical or dental – C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3, PF
Cloth Manufacturing – MR2, M2, M3
Cloth Products Manufacturing – CM, MR1, M1, MR2, M2, M3

Cloth Shrinking, Sponging, or Waterproofing – M1, M2, M3
Clothes Cleaning Establishment – RAS3, RAS4, C1, C1.5, C2, C5, CM, M1, M2, M3
Clothing Alterations Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Clothing Manufacturing – CM, MR1, M1, MR2, M2, M3
Clothing Store, new – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Clothing Store, secondhand – C2, C5, CM, M1, M2, M3
Club – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Club, nonprofit – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Club, private, nonprofit – RAS3, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in A1, A2, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, R4
Coal Distillation – M3
Cocktail Lounge – CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Coconut Oil Manufacturing and Refining – M3
Coffee Roasting – M1, M2, M3
Coffee Shop – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Coil Manufacturing, small – CM, MR1, M1, MR2, M2, M3
Coil Spring Manufacturing – MR2, M2, M3
Coin Shop – C1.5, C2, C4, C5, CM, M1, M2, M3
Coke Oven – M3
Cold Storage Plant – MR1, M1, MR2, M2, M3
Collectibles Shop – C1.5, C2, C4, C5, CM, M1, M2, M3
Collectibles Shop, in historic building (restrictions) – CUP in RD, R3, R4, R5
Collection Agency – C1.5, C2, C4, C5, CM, M1, M2, M3
College – RAS3, R4, RAS4, R5, CR, C2, C4, C5
Columbarium – M2, M3
Columbarium, outside Cemetery – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RW2, R3, RAS3, R4, RAS4, R5, C1, C1.5, C2, C4, C5, CM, M1, MR2
Commercial Grazing, Breeding, Boarding, Raising, or Training of Domestic Animals — CUP in A1, A2
Commercial Shipping – SL
Commercial Vehicle Rental and Storage – M1, M2, M3
Community Antenna Facility (restrictions) – C2, C4, C5, CM, M1, M2, M3; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, C1, C1.5
Community Care Facility, serving 6 or fewer residents – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
‡Community Care Facility, serving 7 or more residents –
Community Center, operated by governmental agency – A1, A2, RA, RE, RS, R1, RU, RZ, R2, RD, RMP, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in OS
Community Center, operated by philanthropic organization – RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in OS
Community Center, operated by private agency – C1.5, C2, C4, C5, CM, M1, M2, M3
Community Facilities – RAS3, RAS4, CR, C2, C4, C5
Community Garden – OS, A1, A2, RA, RE, RS, R1, RU, RZ, R2, RD, RMP, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Composting Facility (enclosed building) (restrictions) – M2, M3; CUP in A1, A2
Compressed Natural Gas Automotive Refueling Station – C2, C5, CM, M1, M2, M3
Computer Assembly – CM, MR1, M1, MR2, M2, M3

Computer Graphics Studio – RAS3, RAS4, C1, C1.5, C2, C5, CM, MR1, M1, MR2, M2, M3
Computer Manufacturing – MR1, M1, MR2, M2, M3
Computer Repair – C1.5, C2, C5, CM, M1, M2, M3
Computer Server Equipment Rooms – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Computer Software and other Computer-Related Products and Services Development and Production (including hardware) – MR1, M1, MR2, M2, M3
Computer Software and other Computer-Related Products and Services Development (no hardware) – RAS3, RAS4, C1, C1.5, C2, C5, CM
Computer Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Computer Support Facility – MR1, M1, MR2, M2, M3
Concert Hall (maximum 3,000 seating capacity) – C1.5, C2, C4, C5, CM, M1, M2, M3
Concert Hall (unlimited seating capacity) – M1, M2, M3
Concrete Batching Plant – M3
Concrete Products Manufacturing – MR1, M1, MR2, M2, M3
Condenser Manufacturing, small – CM, MR1, M1, MR2, M2, M3
Confectionery Manufacturing – CM, MR1, M1, MR2, M2, M3
Confectionery Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Contractor's Equipment Rental Yard or Plant – M1, M2, M3
Contractor's Equipment Storage Yard or Plant – MR1, M1, MR2, M2, M3
Contractor's Establishment – C2, C5, CM, MR1, M1, MR2, M2, M3
Convent – R4, RAS4, R5
Convention or Exhibition Center – CUP in PF
Cookie Manufacturing – CM, MR1, M1, MR2, M2, M3
Cooperage Works – M2, M3
Cork Manufacturing – MR2, M2, M3
Cork Products Manufacturing – MR1, M1, MR2, M2, M3
Cornice Works – M1, M2, M3
Corral, Stock Sales – M3
Correctional or Penal Institution – CUP in OS, A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3, PF
Cosmetics Manufacturing – CM, MR1, M1, MR2, M2, M3
Cosmetological Establishment – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Cotton Gin – M3
Cotton Seed Oil Manufacturing and Refining – M3
Counseling and Referral Facility (restrictions) – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in R3, R4, R5
Creamery – M1, M2, M3
Credit Association or Union – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Crematorium – M2, M3
Crematorium, animal – M3
Crematorium, outside Cemetery – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, C1, C1.5, C2, C4, C5, CM, M1, MR2
Creosote Manufacturing, Bulk Storage, or Treatment – M3
Creosote Products Manufacturing – M3
Crypt – M2, M3
Crystal Holder Manufacturing – CM, MR1, M1, MR2, M2, M3
Cultural Center, for profit – C1.5, C2, C4, C5, M1, M2, M3
Cultural Center, government or nonprofit – RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, M1, M2, M3
Curing Facility (restrictions) – M2, M3; CUP in A1, A2

Cyber Café containing four or fewer computers or terminals – C2, C5, CM, M1, M2, M3
Cyber Café containing five or more computers or terminals – CUP in C2, C5, CM, M1, M2, M3

- D -

Dairy, Cattle or Goat – M2, M3; CUP in A1, A2
Dairy Products Depot – M1, M2, M3
Dairy Products Manufacturing – M1, M2, M3
Dairy Products Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Dance Hall – CUP in C2, C4, C5, CM, M1, M2, M3
Dance Studio or Academy – C2, C4, C5, CM, M1, M2, M3
Day Care Facility, adult – R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5
Day Care Facility, dogs and cats (in enclosed building, no overnight stays) – C2, C5, CM, MR1, M1, MR2, M2, M3
‡Day Care in Home for 14 or fewer children – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Dehydrating of Food – M1, M2, M3
Dehydrating Plant, petroleum – M3
Delicatessen – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Dental Clinic – C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Dental Equipment and Supply Store – C2, C4, C5, CM, M1, M2, M3
Dental Laboratory – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Department Store – C1.5, C2, C4, C5, CM, M1, M2, M3
Designing Office or Shop – C2, C4, C5, CM, M1, M2, M3
Detective or Police Agency, private – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Dextrin Manufacturing – M3
Diaper Service – C2, C5, CM, M1, M2, M3
Die Casting – MR2, M2, M3
Disinfectant Manufacturing – M3
Distillation of Bones – M3
Distillation of Coal, Tar, or Wood – M3
Distillation of Liquor – M3
Distributing Station, milk – M1, M2, M3
Distribution Center, Plant, or Warehouse – MR1, M1, MR2, M2, M3
Doctor's or Dentist's Office – CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Dog and Cat Food Caterer – CM, MR1, M1, MR2, M2, M3
Dog and Cat Food Manufacturing – M1, M2, M3
Dog and Cat Hospital – MR1, M1, MR2, M2, M3
Dog Boarding – MR1, M1, MR2, M2, M3
Dog Kennel – MR1, M1, MR2, M2, M3
Dog Race Track – M3
Door Manufacturing – MR1, M1, MR2, M2, M3
Dormitory – R4, RAS4, R5, C1.5, C2, C4, C5
Doughnut Manufacturing – CM, MR1, M1, MR2, M2, M3
Doughnut Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Drama School, College, or Studio – C2, C4, C5, CM, M1, M2, M3
Draying Yard or Terminal – MR1, M1, MR2, M2, M3
Dress Manufacturing – CM, MR1, M1, MR2, M2, M3
Dress Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Dressing Rooms and Offices Associated with Adjacent Studio or Theater – C2, C4, C5, CM, M1, M2, M3
Dressmaking Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3

Drive-In Theater – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, C1
Drive-Through Fast Food Establishment (restrictions) – CUP in C1, C1.5, C2, C4, C5, CM
Driving School – C2, C4, C5, CM, M1, M2, M3
Drop Forge Industry – M3
Drug Manufacturing – MR1, M1, MR2, M2, M3
Drug Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Dry Cleaners, off-premises – RAS3, RAS4, C1, C1.5, C2, C5, CM, M1, M2, M3
Dry Cleaners, on-premises – RAS3, RAS4, C2, C5, CM, M1, M2, M3
Dry Cleaners, self-service – RAS3, RAS4, C1, C1.5, C2, C5, CM, M1, M2, M3
Dry Cleaning Plant – M1, M2, M3
Dry Cleaning Plant, wholesale – MR1, M1, MR2, M2, M3
Dry Goods Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Dwelling, group – RD, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Dwelling, multiple – RD, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Dwelling, one-family – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Dwelling, two-family – R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Dwelling, watchman or caretaker – MR1, M1, MR2, M2, M3
Dye Stuff Manufacturing – M3
Dyeing Works Plant – MR1, M1, MR2, M2, M3

- E -

Earth or Soil Stockpiling, Distribution, or Excavating – M3
Earthworm or Grub Raising – A1, A2, RA, MR2, M2, M3
Ecological Preserve – OS
Educational Institution – RAS3, R4, RAS4, R5, CR, C2, C4, C5; CUP in all other zones
Egg Candling and Wholesale Distribution – M1, M2, M3
Eldercare Facility – R4, RAS4, R5, C1, C1.5, C2, C4, C5, CM; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3; RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM when not in compliance with Section 14.3.1.
Electric Appliance Assembly – CM, MR1, M1, MR2, M2, M3
Electric Car Charging Station, in permitted parking lot – OS, A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3, PF
Electric Foundry – M1, M2, M3; CUP in MR1
Electric Generator or Motor Manufacturing – M1, M2, M3
Electric Motor Repair – C2, C5, CM, M1, M2, M3
Electric Motor Repair, wholesale – M1, M2, M3
Electric Parts Assembly and Manufacturing – CM, MR1, M1, MR2, M2, M3
Electric Power Generating Site, Plant, or Station – CUP in all zones
Electric Railroad Yard – M2, M3
Electrical Appliance Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Electrical Distributing Substation – C2, C5, CM, MR1, M1, MR2, M2, M3
Electrical Equipment Manufacturing – MR2, M2, M3
Electrical Receiving or Transforming Station – MR1, M1, MR2, M2, M3
Electrical Sign Manufacturing – MR1, M1, MR2, M2, M3
Electronic Devices Repair, household – C1.5, C2, C5, CM, M1, M2, M3

Electronic Instruments and Devices Assembly – CM, MR1, M1, MR2, M2, M3
Electronic Instruments and Devices Manufacturing – MR1, M1, MR2, M2, M3
Electronic Products Assembly and Manufacturing – MR1, M1, MR2, M2, M3
Electronics Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Electroplating of Small Articles – MR1, M1, MR2, M2, M3
Electroplating Works – M1, M2, M3
Embalming – MR2, M2, M3
Emery Cloth Manufacturing – M3
Employment Agency – C1.5, C2, C4, C5, CM, M1, M2, M3
Enameling Works – MR2, M2, M3
Engine Testing – M2, M3
Engineering Office – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Engraving – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Equine Boarding, Breeding, Grazing, Raising or Training (commercial) – M2, M3; CUP in RA, MR1, M1, MR2
Equine Keeping – RE, RS, R1, R2, RD, RMP, R3, R4, R5, MR2, M2, M3; RA, RE20, RE40, A1, A2 with conditions set forth in ZI 2438.
Equine Racetrack – M3
Equine Show – C2, C5, CM, M1, M2, M3
Escort Bureau – C2, C4, C5, CM, M1, M2, M3
Excelsior Manufacturing – MR2, M2, M3
Exhibits, commercial or cultural – C1.5, C2, C4, C5, CM, M1, M2, M3
Explosives Manufacturing – M3

- **F** -

Fabric Shrinking, Sponging, Waterproofing, or Dyeing – M1, M2, M3
Fabric Store – (see Notions Store)
Fabrication of Iron or Steel – M3
Fabrication of Light Weight Steel – M1, M2, M3
Fairgrounds, public – C2, C5, CM, M1, M2, M3
Farm Machinery Sales – C2, C4, C5, CM, M1, M2, M3
Farmer's Market (restrictions) – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, CR, C1, C1.5, C2, C4, C5, M1, M2, M3
Farming – A1, A2, MR1, M1, MR2, M2, M3, PF
Feather Products Manufacturing – MR1, M1, MR2, M2, M3
Feed Storage and Sales Yard – M1, M2, M3
Feed Store – C2, C5, CM, M1, M2, M3
Feeding Pen, stock – M3
Felt Manufacturing, burlap, fur, hair, or wood – M3
Felt Manufacturing, cotton – M2, M3
Felt Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Fencing (wire) Manufacturing – MR2, M2, M3
Ferris Wheel – C2, C5, CM, M1, M2, M3
Fertilizer Manufacturing, liquid – M2, M3
Fertilizer Manufacturing, Processing, or Packaging – M3
Fertilizer Sales, wholesale – M2, M3
Fiber Manufacturing – M3
Fiber Products Manufacturing – MR1, M1, MR2, M2, M3
Film and Tape Editing – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Film Development / Printing Machines – C1.5, C2, C4, C5, CM, M1, M2, M3
Film Exchange – C2, C4, C5, CM, M1, M2, M3
Film Laboratory – CM, MR1, M1, MR2, M2, M3
Financial Institution – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Fire Station – C2, C4, C5, CM, M1, M2, M3, PF; Public Benefit with performance standards in all other zones
Firearm / Ammunition Sales (restrictions) – CUP in C1, C1.5, C2, C4, C5, CM, M1, M2, M3

Firearm Manufacturing (restrictions) – MR2, M2, M3
Fireworks Manufacturing or Storage – M3
Fish Canning, Cleaning, or Curing – M3
Fish Distributing, wholesale or stock wagon operators – M1, M2, M3
Fish Keeping – A1, A2, RA, MR2, M2, M3
Fish Market – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Fish Market, wholesale or jobber – CM, MR1, M1, MR2, M2, M3
Fish Oil or Fishmeal Manufacturing – M3
Fish Raising – A1, A2, MR2, M2, M3
Fish Smoking – M3
Fishing – SL
Fitness Studio, Boxing, or Other Physical Exercise Studio – (see Health Club)
Flocking and Silk Screen Processing – M1, M2, M3
Flood Control Facility – CUP in PF
Florist – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Florist, in historic building (restrictions) -- RD, R3, R4, R5
Flour Mill – M1, M2, M3
Flower Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Food Commissary – CM, MR1, M1, MR2, M2, M3
Food Dehydrating Plant – M1, M2, M3
Food Products Manufacturing – MR1, M1, MR2, M2, M3
Foot Massage – (see Massage Parlor, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist)
Football Stadium (maximum 3,000 seating capacity) – C2, C5, CM, M1, M2, M3
Football Stadium (unlimited seating) – M1, M2, M3
Forge Plant – M3
Fortune Telling, psychic counseling – C1.5, C2, C4, C5, CM, M1, M2, M3
Foster Care Home (restrictions) – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, CR, C1, C1.5
Foundry (except iron, steel, brass, manganese, bronze and zinc) – M1, M2, M3; CUP in MR1
Foundry, iron, steel, brass, manganese, bronze and zinc – M3; CUP in MR1
Fowl Keeping – A1, A2, RA, MR2, M2, M3
Fowl Raising – A1, A2, MR2, M2, M3
Fox Farm – M2, M3
Fraternal Association – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Fraternity House – R4, RAS4, R5, C1.5, C2, C4, C5; CUP in A1, A2, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3
Freight Classification Yard, railroad – M3
Freight Forwarding Station or Terminal – M1, M2, M3
Freighting Yard or Terminal – MR1, M1, MR2, M2, M3
Frit or Glaze Manufacturing – M3
Frog Keeping – A1, A2, RA, MR2, M2, M3
Frog Raising – A1, A2, MR2, M2, M3
Frozen Food Locker Rental – C2, C5, CM, MR1, M1, MR2, M2, M3
Frozen Food Store – RAS3, RAS4, C1.5, C2, C4, C5, CM, M1, M2, M3
Fruit Cannery – MR1, M1, MR2, M2, M3
Fruit Preserving – M1, M2, M3
Fuel Store – C2, C5, CM, M1, M2, M3
Fuel Yard – M1, M2, M3
Fumigating Plant – M2, M3
Fun House – C2, C5, CM, M1, M2, M3
Funeral Parlor – MR2, M2, M3; CUP in C2, C4, C5, CM, M1
Fur Cleaning – C2, C5, CM, M1, M2, M3
Fur Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Furniture Assembly Plant – MR1, M1, MR2, M2, M3
Furniture Cleaning – C2, C5, CM, M1, M2, M3
Furniture Manufacturing – MR1, M1, MR2, M2, M3
Furniture (secondhand) Storage, Display, Processing, or Sales – M2, M3

Furniture Store – C1, C1.5, C2, C4, C5, CM, M1, M2, M3

- G -

Galvanizing of Metal or Metal Products – M3
Game Arcade (restrictions) – C2, C5, CM, M1, M2, M3
Garage, parking – PB, C2, C4, C5, CM, M1, M2, M3
Garage, public – C2, C5, CM, M1, M2, M3
Garbage Dump, closed – OS; CUP in PF
Garbage, Fat, Offal, or Dead Animal Reduction or Rendering (restrictions) – CUP in M3
Garbage Incineration, Reduction, or Dumping – M3
Garden Equipment Rental – C2, C5, CM, M1, M2, M3
Garden Furniture Display Area – C2, C4, C5, CM, M1, M2, M3
Gardener's Refuse Collection Yard or Station – M1, M2, M3
Garment Manufacturing – CM, MR1, M1, MR2, M2, M3
Garnetting or Carding of Previously Produced Fibrous Materials – M2, M3
Gas Manufacturing – M3
Gas Storage – M3
Gasoline Refining – M3
Gasoline Station – C2, C5, CM, M1, M2, M3
Gasoline Tank Farm – M3
Gastropub – CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Gelatin Manufacturing – M3
Geological Core Hole Drilling and Testing – M3
Geological Core Hole Drilling and Testing, temporary (restrictions) – M3; CUP all other zones
Gift Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Glass Fiber Manufacturing – M3
Glass Manufacturing – M3
Glass or Mirror Store – C1.5, C2, C4, C5, CM, M1, M2, M3
Glass Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Glove Manufacturing – CM, MR1, M1, MR2, M2, M3
Glucose Manufacturing – M3
Glue Manufacturing – M3
Goat Feed or Sales Yard – M3
Goat Keeping – A1, A2, RA, MR2, M2, M3
Goat Raising – A1, A2, MR2, M2, M3
Golf Balls Manufacturing – CM, MR1, M1, MR2, M2, M3
Golf Club – C1.5, C2, C5, CM, M1, M2, M3
Golf Course – OS, A1, A2, RA, C1.5, C2, C5, CM, M1, M2, M3; CUP in all other zones
Golf Course, miniature – C2, C5, CM, MR1, MR2, M1, M2, M3; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, C1
Golf Course, pitch and putt – C2, C5, CM, M1, M2, M3; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, C1
Golf Driving Range – C2, C5, CM, M1, M2, M3; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
Government-Owned Parking Facility – CUP in PF
Governmental Enterprise – Public Benefit with performance standards in all zones
Grain Drying or Fermenting – M3
Grain Elevator – M1, M2, M3
Granite (decomposed) Excavating or Stockpiling – M3
Granite Grinding, Dressing, or Cutting – M2, M3
Graphite Manufacturing – M3
Gravel Distribution – M3
Gravel Plant – M3
Grease Manufacturing or Refining – M3

Greenhouse – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Grocery Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Guncotton Products Manufacturing – M3
Gunpowder Manufacturing or Storage – M3
Gunsmith Shop (restrictions) – C2, C5, CM, M1, M2, M3
Gutta-perche, treating or manufacturing products therefrom – M3
Gymnasium – C1.5, C2, C5, CM, M1, M2, M3
Gypsum Manufacturing, Processing, or Grinding – M3

- H -

Hair Care Products Manufacturing – MR1, M1, MR2, M2, M3
Hair Dresser – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Handyman Shop – C2, C5, CM, M1, M2, M3
Hardware Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Hat Making Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Hat Manufacturing – CM, MR1, M1, MR2, M2, M3
Hatchery, poultry or fish – M2, M3
Hay Barn – CM, MR1, M1, MR2, M2, M3
Hazardous Waste Facility, disposal – CUP in M3
Hazardous Waste Facility, storage and/or treatment – CUP in M2, M3
Health Club – C1.5, C2, C5, CM, M1, M2, M3
Heat Treating – MR1, M1, MR2, M2, M3
Heating Equipment Manufacturing – M1, M2, M3
Heating Gas Manufacturing – M3
Helicopter Landings, infrequent – A1, A2, P, PB, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Heliport – M2, M3; CUP when incidental to an office building, hospital, or residential use
Hides (raw) Curing, Tanning, or Storage – M3
High Voltage Transmission Lines and Towers – CUP in OS
Historical Vehicle Collection (accessory) (restrictions) – CUP in all zones
Hobbyist's Rental Shop – C2, C5, CM, M1, M2, M3
Hog Keeping (five or fewer) – A1, MR2, M2, M3
Hog Keeping (six or more) – CUP in A1
Hog Ranch, Feed, or Sales Yard – M3
Home for the Aged, with special care – R5, C1, C1.5, C2, C5, CM
Home for the Aged, with special care, philanthropic – R4, RAS4, R5, C1, C1.5, C2, C5
Home for the Aged, no medical or nursing care – RAS3
Home Occupations (restrictions) – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, R4, R5
Honey Processing and Packing – M1, M2, M3
Horn Products Manufacturing – MR1, M1, MR2, M2, M3
Horse Keeping – (see Equine Keeping)
Hosiery Manufacturing – CM, MR1, M1, MR2, M2, M3
Hospice – R5, CR, C1, C1.5, C2, C5
Hospice, philanthropic – R4, R5, CR, C1, C1.5, C2, C5
Hospital – R5, C1, C1.5, C2, C5, PF; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, CR, C4, CM, MR1, M1, MR2, M2, M3
Hostel – (see Hotel)
Hostess Dance Hall – CUP in C2, C5, CM, M1, M2, M3
Hotel – CUP in R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, M1, M2, M3
‡Hotel (restrictions) – R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5
Household Appliance Repair – C1.5, C2, C5, CM, M1, M2, M3

Household Moving Rental Trucks and Trailers, rental, storage, or storage for rental purposes (restrictions) – CUP in C2, C5, CM, MR1
Household Moving Truck Repair and Storage – M1, M2, M3

House of Worship – RAS3, R4, RAS4, R5, CR, C2, C4, C5
House of Worship, Rescue Mission – C2, C4, C5
House of Worship, Temporary Revival – C2, C5
House Mover or Wrecker – M2, M3
Hydrochloric Acid Manufacturing – M3
Hydroponic Agricultural Enterprise – A1, A2, RA, C2, C4, C5, CM, MR1, M1, MR2, M2, M3

- I -

Ice and Cold Storage Plant – MR1, M1, MR2, M2, M3
Ice Cream Manufacturing – CM, MR1, M1, MR2, M2, M3
Ice Cream Parlor – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Ice Manufacturing or Distributing – M1, M2, M3
Ice Skating Rink – C2, C5, CM, M1, M2, M3
Ice Storage House – C2, C5, CM, M1, M2, M3
Ice Storage Plant – M1, M2, M3
Import-Export Business – C1.5, C2, C4, C5, CM, M1, M2, M3
Incinerator Manufacturing – M3
Ink Manufacturing – M1, M2, M3
Inner Spring Manufacturing – MR2, M2, M3
Insecticide or Pesticide Blending or Mixing – MR2, M2, M3
Insecticide or Pesticide Manufacturing – M3
Insurance Agency – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Intelligence Agency, private – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Interior Decorating Store – C1.5, C2, C4, C5, CM, M1, M2, M3
Internet Café – see Cyber Café
Iron Foundry or Fabrication Plant – M3; CUP in MR1
Iron Ore Pellet Loading and Unloading Facility – M2, M3
Iron Storage, Sorting, Collecting, or Baling – M2, M3
Iron Works, ornamental – M1, M2, M3

- J -

Jewelry Manufacturing – C5, CM, MR1, M1, MR2, M2, M3
Jewelry Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Jewelry Store, secondhand – C2, C5, CM, M1, M2, M3
Joint Living / Work Quarters for Artists and Artisans (restrictions) – RAS3, RAS4, C1, C1.5, C2, C5, CM; CUP in CR, MR1, M1, MR2, M2, M3
Joint Living / Work Quarters, in historic building (restrictions) – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RW2, R3, R4, R5
Juice Manufacturing – M1, M2, M3
Juke Box Assembling – M1, M2, M3
Juke Box Rental and Sales, new or used – C1.5, C2, C4, C5, CM, M1, M2, M3
Junk Collection, Sorting, Storage, or Baling – MR2, M2, M3
Junk Yard – M2, M3
Jute Products Manufacturing – M3

- K -

Karaoke Establishment – (see Nightclub)
Karate Studio – (see Gymnasium)
Kennel – MR1, M1, MR2, M2, M3
Knitting Mill – CM, MR1, M1, MR2, M2, M3

- L -

Labor Union Office – C2, C4, C5, CM, M1, M2, M3
Laboratory, experimental, film, motion picture, research, or testing – CM, MR1, M1, MR2, M2, M3
Laboratory, medical or dental – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Lacquer Manufacturing – M3
Lampblack Manufacturing – M3
Land Reclamation Project – CUP in all zones
Lapidary Shop – CM, MR1, M1, MR2, M2, M3
Lard Manufacturing – M3
Large Family Day Care Home – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
Laundromat, self-service – RAS3, RAS4, C1, C1.5, C2, C5, CM, M1, M2, M3
Laundry – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Laundry Plant – M1, M2, M3
Laundry Plant, wholesale – MR1, M1, MR2, M2, M3
Lawn Mower and Renovator Rental – C2, C5, CM, M1, M2, M3
Lawn Mower and Renovator Repair – C1.5, C2, C5, CM, M1, M2, M3
Leaf Mold Storage, Composting, and Packaging – M2, M3
Leather Machine Belt Manufacturing – M1, M2, M3
Leather Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Library, nonprofit – RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, M1, M2, M3
Library, profit – C1, C1.5, C2, C4, C5, M1, M2, M3
Library, public – RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, M1, M2, M3, PF; CUP in OS; Public Benefit in all other zones
Light Sheet Metal Products Manufacturing – MR1, M1, MR2, M2, M3
Lime Manufacturing – M3
Limousine Service – (see Car Rental)
Linen Supply Business – C2, C5, CM, M1, M2, M3
Linoleum Manufacturing – M3
Linseed Oil Manufacturing – M3
Liquid Coating for Beverage Tanks, manufacturing of – M2, M3
Liquid Fertilizers Manufacturing – MR2, M2, M3
Liquor or Spirits Rectifying – M1, M2, M3
Liquor Store – CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Lithographing – C2, C4, C5, CM, M1, M2, M3
Livestock Exhibition, Sale, or Stable – M2, M3
Loan Office – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Locker Rental – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Locksmith Shop – C1.5, C2, C4, C5, CM, M1, M2, M3
Lodge – RAS3, RAS4, C1, C1.5, C2, C5, CM, M1, M2, M3
Lodge, nonprofit – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Lodge, private, nonprofit – RAS3, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Lounge – CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Lubricating Oil Canning and Packaging – MR2, M2, M3
Lumber Store – C2, C5, CM, M1, M2, M3
Lumber Yard, retail – MR1, M1, MR2, M3
Lumber Yard, used materials and salvaging – M3
Lumber Yard, wholesale – MR2, M2, M3

- M -

Machine Belt Manufacturing – MR1, M1, MR2, M2, M3
Machine Shop – MR1, M1, MR2, M2, M3

Machine Shop, precision – CM, MR1, M1, MR2, M2, M3
Machinery (farm) Repairing and Overhauling – M1, M2, M3
Machinery Manufacturing – M3
Machinery Wrecking or Storage Yard – M2, M3
Magazine Business, secondhand – C2, C5, CM, M1, M2, M3
Mail Order House – C1.5, C2, C4, C5, CM, M1, M2, M3
Manicure Parlor – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Mannequin Manufacturing – MR1, M1, MR2, M2, M3
Manure Storage or Processing – M3
Marble Grinding, Dressing, or Cutting – M2, M3
Marine Cargo Loading or Unloading, wharf or dock – M2, M3
Marine Oil Service Station – C2, C5, CM, M1, M2, M3
Marine Oil Terminal – M3
Marine Preserve – OS
Market, public, wholesale and jobbers – CM, MR1, M1, MR2, M2, M3
Martial Arts Studio – (see Gymnasium)
Massage Parlor, licensed massage therapist, bodyworker, bodywork therapist, or massage and bodywork therapist – C2, C4, C5, CM, M1, M2, M3
Massage Parlor, adult entertainment business – CUP in C2, C5, CM, M1, M2, M3
Masseur or Masseuse – C2, C4, C5, CM, M1, M2, M3
Mat Manufacturing – MR1, M1, MR2, M2, M3
Match Manufacturing – M3
Match Manufacturing, safety paper – MR2, M2, M3
Mattress Factory or Renovating – CM, MR1, M1, MR2, M2, M3
Mattress Shop – C2, C4, C5, CM, M1, M2, M3
Mausoleum – M2, M3
Mausoleum, outside Cemetery – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, C1, C1.5, C2, C4, C5, CM, M1, MR2
Meat Cutting Plant – M1, M2, M3
Meat Market – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Media-Related Products and Services Development (including hardware) – MR1, M1, MR2, M2, M3
Media-Related Products and Services Development (no hardware) – RAS3, RAS4, C1, C1.5, C2, C5, CM
Medical Clinic – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Medical Laboratory – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Medical Waste Treatment – (see Hazardous Waste Facility, storage and/or treatment)
Menagerie – M2, M3
Mental Hospital – C2, C5
Mental Institution, correctional or penal – M2, M3
Merry-Go-Round – C2, C5, CM, M1, M2, M3
Messenger Office – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Metal Products Inspection by X-Ray – M1, M2, M3
Metal Roll Forming – M2, M3
Metal Spinning – MR1, M1, MR2, M2, M3
Metal Stamp Manufacture – MR1, M1, MR2, M2, M3
Metals (precious or semi-precious), manufacturing products of – CM, MR1, M1, MR2, M2, M3
Mice or Guinea Pig Raising for wholesale distribution or experimental purposes – M2, M3
Microbrewery– CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Milk Bottling or Distributing Station – M1, M2, M3

Milk Container Roll Forming – M2, M3
Millinery Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Mining of Natural Resources – M3
Mink Farm – M2, M3
Mission, rescue – C2, C4, C5
Mobile Home Park (restrictions) – RMP; Public Benefit in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Mobile Home Rental – C2, C5, CM, M1, M2, M3
Mobile Home Sales, new – C2, C4, C5, CM, M1, M2, M3
Mobile Home Sales, used – C2, C5, CM, M1, M2, M3
Mobile Medical Facility – RAS3, RAS4, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Model Home (restrictions) – CUP in all zones
Monastery – R4, R5
Monument Works – MR2, M2, M3
Monuments and Tombstones, retail sales – C2, C4, C5, CM, M1, M2, M3
Morgue – M2, M3
Mortuary or Mortuary School – MR2, M2, M3; CUP in C2, C4, C5, CM, M1
Motel – (see Hotel)
Motion Picture Film Rental – C2, C4, C5, CM, M1, M2, M3
Motion Picture Film or Television Computer Design, Computer Graphics, or Animation – CUP in CR, C1, C1.5, C2, C4, C5, CM
Motion Picture Film or Television Set and Prop Production – CUP in CR, C1, C1.5, C2, C4, C5, CM
Motion Picture Film or Television Sound Lab – CUP in CR, C1, C1.5, C2, C4, C5, CM
Motion Picture Film or Television Tape Editing – C2, C4, C5, CM, MR1, M1, MR2, M2, M3; CUP in CR, C1, C1.5
Motion Picture Film or Television Tape Reconstruction – C2, C4, C5, CM, MR1, M1, M1, MR2, M2, M3
Motion Picture Film or Television Video and Audio Processing – CUP in CR, C1, C1.5, C2, C4, C5, CM
Motion Picture Production (including outdoor sets) – MR1, M1, MR2, M2, M3
Motion Picture Production (no outdoor sets) – C2, C5, CM
Motion Picture Studio – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Motion Picture Theater – C1.5, C2, C4, C5, CM, M1, M2, M3
Motor Coach Repairing or Overhauling – M1, M2, M3
Motorcycle or Motor Scooter Rental – C2, C5, CM, M1, M2, M3
Motorcycle or Motor Scooter Repair – C2, C5, CM, M1, M2, M3
Motorcycle or Motor Scooter Repair, wholesale – M1, M2, M3
Motorcycle or Motor Scooter Sales, new – C2, C4, C5, CM, M1, M2, M3
Motorcycle or Motor Scooter Sales, used – C2, C5, CM, M1, M2, M3
Motorcycle Race Track – M3
Motorcycle Storage Garage – C2, C4, C5, CM, M1, M2, M3
Moving Van Storage or Operating Yard – M1, M2, M3
Mulching Facility (enclosed building) (restrictions) – M2, M3; CUP in A1, A2
Museum, for profit – C1.5, C2, C4, C5, M1, M2, M3
Museum, nonprofit – RAS3, R4, RAS4, R5, CR, C1.5, C2, C4, C5, M1, M2, M3; CUP in OS; Public Benefit in all other zones
Mushroom Growing – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Music School or Studio – C2, C4, C5, CM, M1, M2, M3
Music Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3

Musical Instrument Manufacturing – MR1, M1, MR2, M2, M3

- N -

Nail Manufacturing – M3
Nameplates, Signs, or Advertising Matter (as provided in Section 12.21 A, also see 'Signs' in this list, and the Building Code for specific regulations) – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
Natural Gas (compressed) Refueling Station – C2, C5, CM, M1, M2, M3
Natural Resource Development (restrictions) – CUP in all zones
Natural Resource Preserve – OS
Nature Preserve – CUP in OS
Neon Light Manufacturing – MR1, M1, MR2, M2, M3
Neon Sign Manufacturing – MR1, M1, MR2, M2, M3
Newspaper Office – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Newsstand – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Nightclub – C2, C4, C5, CM, M1, M2, M3
Nitric Acid Manufacturing – M3
Nitrogen Manufacturing, Compressing, and Bulk Storage – MR2, M2, M3
Notions Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Novelties Manufacturing – MR1, M1, MR2, M2, M3
Novelties Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Numismatic Store – C2, C4, C5, CM, M1, M2, M3
Nursery (plant) – A1, A2, RA, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Nursery (plant), no retail sales – CUP in RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, C1, C1.5
Nursery School – RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5; CUP in A1, A2, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3
Nursery School, primarily for children of local workers – CUP in CM, MR1, M1, MR2, M2, M3
Nursing Home – R5, C1, C1.5, C2, C5
Nut Roasting, Frying, or Candy Coating – CM, MR1, M1, MR2, M2, M3
Nutria Keeping – A1, A2, RA, MR2, M2, M3
Nutria Raising – A1, A2, MR2, M2, M3

- O -

Observatory – C2, C4, C5, CM, M1, M2, M3; CUP in OS
Offal or Dead Animal Dumping – M3
Office (restrictions) – MR1, MR2
Office Building – CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Office Building (restrictions) – MR1, MR2
Office, business or professional – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Office, business or professional, in historic building – CUP in RD, R3, R4, R5
Office, civic and social organizations or philanthropic institutions, in historic building (restrictions) – CUP in RD, R3, R4, R5
Office, corporate headquarters – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Official Police Garage – M1, M2, M3
Oil Drilling Equipment Yard – M3
Oil Drilling or Pumping and Production of Oil, Gas, or Hydrocarbons – M3
Oil Manufacture (vegetable) – M3
Oil Pipeline Booster Pump Station – M2, M3
Oil Reclaiming – M3
Oil Refining – M3
Oilcloth Manufacturing – M3
Olive Oil Extraction – M2, M3
Open Storage – MR1, M1, MR2, M2, M3
Optical Goods Manufacturing – CM, MR1, M1, MR2, M2, M3

Optician – C2, C4, C5, CM, M1, M2, M3
Ore Reduction Plant – M3
Orphanage – R4, R5, C1, C1.5, C2, C4, C5, CM
Orthopedic Appliance Store – C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Orthopedic or Surgical Supplies Manufacturing – M1, M2, M3
Ostrich Farm – M2, M3
Outdoor Open Sales – CUP in C1, C2, M2, M3
Oxygen Manufacturing, Compressing, and Bulk Storage – MR2, M2, M3
Oxygen, storage of compressed – CM, MR1, M1, MR2, M2, M3

- P -

Packaging Business – CM, MR1, M1, MR2, M2, M3
Packing Plant, fruit or vegetable – M1, M2, M3
Paintball – C2, C5, CM, M1, M2, M3; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
Paint Manufacturing – M3
Paint Mixing – M1, M2, M3
Paint Products Manufacturing – MR1, M1, MR2, M2, M3
Paint Store – C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Paper Collecting, Sorting, Storage, or Baling – MR2, M2, M3
Paper Manufacturing or Converting – M3
Paper Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Paper Scrap or Waste Storage, Sorting, Collecting, or Baling – M2, M3
Parcel Delivery Service – MR1, M1, MR2, M2, M3
Parcel Delivery Service, branch – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Park or Playground (Open outdoor space), operated by government agency – OS, A1, A2, RA, RE, RS, R1, RU, RZ, RD, RMP, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; Public Benefit with performance standards in RW1, RW2, P, PB, PF
Park or Playground (Open outdoor space), operated by philanthropic organization – OS, R4, R5, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Park or Playground (Open outdoor space), operated by private agency – OS, C1.5, C2, C4, C5, CM, M1, M2, M3
Parking Area, public – P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
Parking, automobile – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Parking Building – P, PB, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Parking Garage – PB, C2, C4, C5, CM, M1, M2, M3
Parking of Trucks or Buses – MR1, M1, MR2, M2, M3
Pawnshop – CUP in C2, C5, CM, M1, M2, M3
Pectin Manufacturing – M1, M2, M3
Penny Arcade (4 or fewer coin, slug, or electronic controlled game machines) – C2, C5, CM, M1, M2, M3
Penny Arcade (5 or more coin, slug, or electronic controlled game machines) – CUP in C2, C5, CM, M1, M2, M3
Perfume Manufacturing – CM, MR1, M1, MR2, M2, M3
Perfumed Toilet Soap Manufacturing – MR1, M1, MR2, M2, M3
Pest or Insect Control Business – C2, C5, CM, M1, M2, M3
Pet Animal Crematory – M3
Pet Grooming – C2, C4, C5, CM, M1, M2, M3
Pet Store – C2, C4, C5, CM, M1, M2, M3
Petroleum Dehydrating Plant – M3
Petroleum Products Bulk Distributing Station – M2, M3

Petroleum Products Manufacturing – M3
Petroleum Pumping – M3
Petroleum Refining – M3
Pharmaceuticals Manufacturing – MR1, M1, MR2, M2, M3
Pharmacy, prescription – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Phenol Manufacturing – M3
Phenol Products Manufacturing – M3
Philanthropic Institution – R4, R5, CR, C1, C1.5, C2, C4, C5, CM
Philatelic Store – C1.5, C2, C4, C5, CM, M1, M2, M3
Phonograph Assembly – CM, MR1, M1, MR2, M2, M3
Phonograph Record Blank Manufacturing – M3
Phonograph Record Manufacturing – M1, M2, M3
Phonograph Record Store, new – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Phonograph Record Store, secondhand – C2, C5, CM, M1, M2, M3
Photo Developing and Finishing – C2, C4, C5, CM, M1, M2, M3
Photocopying – C1.5, C2, C4, C5, CM, M1, M2, M3
Photo-Engraving – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Photographer – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Pickle Manufacturing – MR2, M2, M3
Pie Manufacturing – CM, MR1, M1, MR2, M2, M3
Pier, Jetty, Man-Made Island, or Floating Installation – CUP in SL
Pigeon Keeping – A1, A2, RA, M1, MR2, M3
Pigeon Raising – A1, A2, MR2, M2, M3
Pilates – (see Health Club)
Pinball Machine Rental or Sales, new or used – C1.5, C2, C4, C5, CM, M1, M2, M3
Pipe Reclaiming – M3
Pipe Storage Yard – M2, M3
Planetarium – CUP in OS
Planing Mill – MR2, M2, M3
Plaster of Paris Manufacturing – M3
Plaster Staff Works – M2, M3
Plastic Manufacturing – M3
Plastic Plate Embossing – C2, C5, CM, MR1, M1, MR2, M2, M3
Plastic Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Plumbing Shop – C2, C5, CM, M1, M2, M3
Point Manufacturing – MR1, M1, MR2, M2, M3
Police Department Driver Training Facility – PF
Police Station – RAS3, RAS4, C2, C4, C5, CM, M1, M2, M3, PF; Public Benefit with performance standards in all other zones
Polish Manufacturing – M2, M3
Polish Mixing, automobile or furniture – M1, M2, M3
Pony Riding Ring – C2, C5, CM, M1, M2, M3
Pool Hall – C2, C5, CM, M1, M2, M3
Post Office – C2, C4, C5, CM, M1, M2, M3, PF
Potash Manufacturing – M3
Potato Chip Factory – M1, M2, M3
Pottery and Ceramics Display Area – C2, C4, C5, CM, M1, M2, M3
Pottery and Ceramics Store, retail – C2, C4, C5, CM, M1, M2, M3
Pottery Manufacturing – CM, MR1, M1, MR2, M2, M3
Poultry Dealer or Broker, wholesale – CM, MR1, M1, MR2, M2, M3
Poultry Hatchery – M2, M3
Poultry Keeping – A1, A2, RA, RE, RS, R1, R2, RMP, R3, R4, R5, MR2, M2, M3
Poultry Killing – M1, M2, M3
Poultry Market – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Poultry Raising – A1, A2, MR2, M2, M3
Poultry Slaughterhouse, wholesale – M2, M3
Powdered Metal Parts or Articles Manufacturing – M2, M3
Precious or Semi-Precious Metal Buyback Center – (see Pawnshop)

Preschool – (see Nursery School)
Printing Establishment – C2, C4, C5, CM, M1, M2, M3
Printing Establishment, wholesale – MR1, M1, MR2, M2, M3
Printing or Stenciling Designs on Fabric, Cloth, or Wallpaper – M1, M2, M3
Private Detective Agency – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Private School, Elementary, Middle, or High – RAS3, RAS4, CR, C2, C4, C5; CUP in A1, A2, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, C1, C1.5, MR1, M1, MR2, M2, M3
Private School, other than Nursery, Elementary, Middle, or High – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5
Produce Market – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Produce Market, wholesale – CM, MR1, M1, MR2, M2, M3
Produce Yard or Terminal – M1, M2, M3
Professional Office – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Public Beach – CUP in OS
Public Camping Facility – CUP in OS
Public Game Court – CUP in OS
Public Gym Facility – CUP in OS
Public Health Facility (also see Hospital and Medical Clinic) – PF
Public Market, wholesale – CM, MR1, M1, MR2, M2, M3
Public School, Elementary, Middle, or High – RAS3, R4, RAS4, R5, CR, C2, C4, C5, PF; CUP in all other zones
Public Swimming Pool – CUP in OS
Public Tennis Court – CUP in OS
Public Utilities and Public Service Uses and Structures (except wireless telecommunication facilities and radio or television transmitters) – Public Benefit with performance standards in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM, MR1, MR2
Public Utility Service Yard – MR1, M1, MR2, M2, M3
Publishing Establishment – C2, C4, C5, CM, M1, M2, M3
Publishing Establishment, wholesale – MR1, M1, MR2, M2, M3
Pulp or Paper Manufacturing – M3
Pumping Plant – M1, M2, M3; CUP in PF
Pumpkin Sales – A1, A2, RA, RW1, R2, RD, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Pyrotechnics Manufacturing – M3
Pyroxylin Manufacturing – M3

- Q -

Quality Control Laboratory – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Quarry – M3

- R -

Rabbit Keeping – A1, A2, RA, RE, RS, R1, R2, RMP, R3, R4, R5, MR1, M1, MR2, M2, M3
Rabbit Killing – M1, M2, M3
Rabbit Raising – A1, A2, MR2, M2, M3
Rabbit Slaughterhouse, wholesale – M2, M3
Racetrack, automobile, dog, horse, or motorcycle – M3
Radio and Television Assembly – CM, MR1, M1, MR2, M2, M3
Radio and Television Repair Shop – C2, C5, CM, M1, M2, M3
Radio and Television Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Radio Broadcasting Studio – C2, C4, C5, CM, M1, M2, M3
Radio Broadcasting Transmitter – M1, M2, M3
Rag Collection, Sorting, Storage, or Baling – MR2, M2, M3
Railroad Repair Shop – M3
Railroad Yard – M3
Rapid Diagnostic Testing – CR

Rare Book Shop, in historic building (restrictions) – CUP in RD, R3, R4, R5
Real Estate Office – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Recording Studio – C2, C4, C5, CM, M1, M2, M3
Recreation (also see Park) – OS, SL
Recreation Area, commercial – C1.5, C2, C5, CM, M1, M2, M3
Recreation Area, public – OS, C1.5, C2, C5, CM, M1, M2, M3
Recreation Building – C2, C4, C5, CM, M1, M2, M3
Recreation Center, owned and operated by governmental agency – RAS3, RAS4, C2, C4, C5, CM, M1, M2, M3; CUP in OS; Public Benefit in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, R4, R5, C1
Recreational Vehicle Park – (see Mobile Home Park)
Recreational Vehicle Rental – C2, C5, CM, M1, M2, M3
Recreational Vehicle Sales, new – C2, C4, C5, CM, M1, M2, M3
Recreational Vehicle Sales, used – C2, C5, CM, M1, M2, M3
Recreational Vehicle Storage – MR1, M1, MR2, M2, M3
Recycling Area or Room for Multiple-Family Residential Uses (restrictions) – RD, R3, RAS3, R4, RAS4, R5
Recyclable Materials Collection, Buyback Centers, Mobile Recycling Centers (restrictions) – M2, M3; CUP in P, PB, C2, C5, CM, MR1, M1, MR2; M2, M3 when facility not in compliance with conditions set forth in Section 12.21 A.18.(d).
Recycling Collection or Buyback Centers in Conjunction with a Grocery Store (restrictions) – RAS3, RAS4, P, PB, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Recycling Material Sorting Facility (restrictions) – MR1, M1, MR2, M2, M3; CUP in MR1, M1, MR2, M2, M3 when facility not in compliance with conditions set forth in Section 12.21 A.18.(e).
Recycling Material Processing Facility – M2, M3; CUP in M2, M3 when facility not in compliance with conditions set forth in Section 12.21 A.18.(f).
Reducing Salon – C1.5, C2, C5, CM, M1, M2, M3
Refinery, petroleum or gasoline – M3
Refrigeration Equipment Installation or Service – C2, C5, CM, M1, M2, M3
Refrigeration Plant, storage – M1, M2, M3
Refuse Dump – M3
Refuse Transfer Station – M3
Religious Association – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Religious Retreat – R4, RAS4, R5
Rental Equipment Store, retail – C2, C5, CM, M1, M2, M3
Repair Garage – C2, C5, CM, M1, M2, M3
Repair Shop – C2, C5, CM, M1, M2, M3
Research and Development Center (restrictions) – MR1, M1, MR2, M2, M3; CUP in OS, A1, A2, P, PB, CR, C1, C1.5, C2, C4, C5, CM, PF
Reservoir, water – OS, M1, M2, M3
Reservoir, water, covered – CUP in PF
Restaurant – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3; CUP in MR1, MR2
Restaurant, accessory to Supermarket – (see Grocery Store)
Restaurant, in historic building (restrictions) – CUP in RD, R3, R4, R5
Rest Home, convalescent – R5, C1, C1.5, C2, C5
Retail Store or Business – C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Retinning and Reconditioning of Milk Containers – M2, M3
Retreat House – (see Religious Retreat)
Riding Academy, School, Club, or Stable – M2, M3; CUP in A1, A2, RA, MR1, M1, MR2
Rifle Range – M2, M3

Rock, Sand, Gravel, or Earth Distribution or Storage – M3
Rodeo Grounds or Stadium – M2, M3
Roll Forming of Metal, cold process – MR2, M2, M3
Roller Skating Rink – C2, C5, CM, M1, M2, M3
Rolling Mill – M3
Roofing Material Factory – M3
Rooming House – R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Rope Factory – M3
Roundhouse – M3
Rubber Cement Manufacturing – M2, M3
Rubber Manufacturing, Treating, or Reclaiming Plant – M3
Rubber or Metal Stamp Store – C1.5, C2, C5, CM, M1, M2, M3
Rubber Products Manufacturing – MR1, M1, MR2, M2, M3
Rubber Stamp Manufacturing – MR1, M1, MR2, M2, M3
Rubbish Incinerator or Storage – M3
Rug Cleaning Plant – MR1, M1, MR2, M2, M3
Rug Manufacturing – MR2, M2, M3

- S -

Sack Storage, Sorting, Collection, or Baling – MR2, M2, M3
Safe and Vault Repairing and Servicing – C2, C5, CM, M1, M2, M3
Salt Works – M3
Salvage Business – M2, M3
Sand Blasting – M3
Sand Distribution Plant – M3
Sand Pit – M3
Sandpaper Manufacturing – M3
Sanitarium – R5, C1, C1.5, C2, C5; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, CR, C4, CM, MR1, M1, MR2, M2, M3
Sanitary Landfill – (see Garbage Dump)
Sash Manufacturing – MR1, M1, MR2, M2, M3
Sauerkraut Manufacturing – M3
Sausage Manufacturing – M1, M2, M3
Savings and Loan Association – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Saw Mill – M3
Scenic Railway – C2, C5, CM, M1, M2, M3
School, art – CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
School, dance – C2, C4, C5, CM, M1, M2, M3
School, drama – C2, C4, C5, CM, M1, M2, M3
School, elementary, middle, or high – RAS3, R4, RAS4, R5, CR, C2, C4, C5
School, music – C2, C4, C5, CM, M1, M2, M3
School, nursery – RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5; CUP in A1, A2, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3
School, nursery, primarily for children of local workers – CUP in CM, MR1, M1, MR2, M2, M3
School, private, elementary, middle, or high – RAS3, RAS4, CR, C2, C4, C5; CUP in A1, A2, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, C1, C1.5, MR1, M1, MR2, M2, M3
School, private, other than nursery, elementary, middle, or high – CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5
School, professional or scientific – CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
School, public, elementary, middle, or high – RAS3, R4, RAS4, R5, CR, C2, C4, C5; CUP in all other zones
School, trade, technical, or occupational – C2, C4, C5, CM, M1, M2, M3
Scientific Instrument and Equipment Manufacturing – CM, MR1, M1, MR2, M2, M3
Scientific Instrument Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Scrap Iron Sales – M3
Scrap Iron Storage, Sorting, Collection, or Baling – M2, M3

Scrap Metal Collection, Sorting, Storage, or Baling – MR2, M2, M3
Scrap Metal Processing Yard – M3
Screw Machine Products Manufacturing – MR2, M2, M3
Screw Thread Rolling or Cutting – MR2, M2, M3
Sea Water Desalination Facility (restrictions) – CUP in all zones
Second Dwelling Unit (restrictions) – CUP in A1, A2, RA, RE, RS, R1, RW1, RMP
Second Dwelling Unit, large lot (restrictions) – CUP in RA, RS, R1
Secondhand Box or Container Storage, Display, Processing, or Sales – M2, M3
Secondhand Furniture and Appliance Storage, Display, Processing, or Sales – M2, M3
Secondhand Store (no pawnshops) – C2, C5, CM, M1, M2, M3
Security Service – CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Senior Citizen Center – CUP in OS
Senior Independent Housing (restrictions) – R3, RAS3, R4, RAS4, R5; CUP for reduced parking in RD, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5
Servant's Quarters – A1, A2, RA, RE, R1, RW1, R2, RD, RW2, R3, R4, R5, CM
Sewage Disposal or Treatment Plant – M3
Sewage Treatment Facility – CUP in PF
Sewer Pipe Manufacturing – M3
Sexual Encounter Establishment – CUP in C2, C5, CM, M1, M2, M3
Sharpening or Grinding of Tools or Cutlery – C2, C5, CM, M1, M2, M3
Sheep Feed or Sales Yard – M3
Sheep Keeping – A1, A2, RA, MR2, M2, M3
Sheep Raising – A1, A2, MR2, M2, M3
Sheet Metal Products Manufacturing, light – MR1, M1, MR2, M2, M3
Sheet Metal Shop – C2, C5, CM, MR1, M1, MR2, M2, M3
Shellac Manufacturing – M3
Shellac Mixing – M1, M2, M3
Shell Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Shelter for the Homeless (fewer than 30 beds) – R4, RAS4, R5, C2, C4, C5, CM; Public Benefit with performance standards in R3, M1, M2, M3
Shelter for the Homeless, declared shelter crisis, charitable organization (subject to the provisions of Sec. 12.81) – R3, RAS3, R4, RAS4, R5, C2, C4, C5, CM, M1, M2, M3
Shelter for the Homeless, declared shelter crisis, government property (only pursuant to a Council resolution as provided in Sec. 12.80) – OS, A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3, PF
Shingle Mill – M3
Shipbuilding – M3
Shoddy Manufacturing – M3
Shoe Manufacturing -- CM, MR1, M1, MR2, M2, M3
Shoe Polish Manufacturing – M3
Shoe Repair Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Shoe Shine Stand – C1.5, C2, C4, C5, CM, M1, M2, M3
Shoe Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Shooting Gallery – C2, C5, CM, M1, M2, M3
Shooting Range – M2, M3
Showcase Theater – C1.5, C2, C4, C5, CM, M1, M2, M3
Shrimp (frozen) Cleaning, Breading, Packaging, and Refreezing – M2, M3
Side Show, circus, transient – C2, C5, CM, M1, M2, M3
Sign Manufacturing – MR1, M1, MR2, M2, M3
Sign Painting – C2, C5, CM, MR1, M1, MR2, M2, M3
Signs (as provided in Section 12.17.5 B 9, also see Building Code for specific regulations) – MR1

Signs (as provided in Section 12.18 B 5, also see Building Code for specific regulations) – MR2
Signs, advertising, on-site only (see Building Code for regulations) – C2, C4, C5, CM, M1, M2, M3
Signs, directional and identification (as provided in Section 12.12.1 A 3, also see Building Code for specific regulations) – P, PB
Signs, identification (as provided in Section 12.12.2 A 6, also see Building Code for specific regulations) – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Signs, nameplates or advertising matter (as provided in Section 12.21 A 7, also see Building Code for specific regulations) – A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5
Silk Screen Printing – CM, MR1, M1, MR2, M2, M3
Size Manufacturing – M3
Skateboard Track – C2, C5, CM, M1, M2, M3
Skating Rink, Skate Park (indoor) – C2, C5, CM, M1, M2, M3
Skeet or Trap Shooting – M2, M3
Skilled Nursing Care Housing – R5, C1, C1.5, C2, C5
Slot Car Racing – C2, C5, CM, M1, M2, M3
Smelter, tin, copper, zinc, or iron ores – M3
Snake or Reptile Raising – M2, M3
Soap Manufacturing – M3
Soda Fountain – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Sodium Compounds Manufacturing – M3
Soft Drink Manufacturing or Bottling – M1, M2, M3
Solar Energy System Structures, not otherwise permitted – CUP in all zones
Solid Waste Alternative Technology Processing Facility (restrictions) – CUP in PF, M2, M3
Sorority House – R4, RAS4, R5, C1.5, C2, C4, C5; CUP in A1, A2, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3
Sound Score Production – C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Spa – (see Bath, Turkish and the like)
Special Care Home – R5, C1, C1.5, C2, C5
Special Care Home, philanthropic – R4, R5, C1, C1.5, C2, C5
Spinning/Cycling Studio – (see Health Club)
Sport Cards Store – C1.5, C2, C4, C5, CM, M1, M2, M3
Sporting Goods Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Sports Arena (maximum 3,000 seating capacity) – C2, C5, CM, M1, M2, M3
Sports Arena (unlimited seating capacity) – M1, M2, M3
Stable, commercial – M2, M3
Stable, livery – M2, M3
Stable, private – A1, A2, RA, RE, RS, R1, R2, RD, R3, R4, R5, MR2, M2, M3
Stadium (maximum 3,000 seating capacity) – C2, C5, CM, M1, M2, M3; CUP in OS, A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, P, PB, CR, C1, C1.5, C4, MR1, MR2, PF
Stadium (fewer than 25,000 seats) – CUP in MR1
Stadium (unlimited seating capacity) – M1, M2, M3
Stamp Manufacturing – MR1, M1, MR2, M2, M3
Stamp Store (postage) – C1.5, C2, C4, C5, CM, M1, M2, M3
Stand for Display and Sale of Agricultural Products Raised on the Premises – A1, A2, MR1, M1, MR2, M2, M3; CUP in RA
Starch (liquid) Mixing and Bottling – M1, M2, M3
Starch Manufacturing – M3
Station, bus or train – C2, C4, C5, CM, M1, M2, M3
Stationery Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Statuary Manufacturing – M2, M3

Steel Foundry or Fabrication Plant and Heavyweight Casting – M3; CUP in MR1
Steel Mill – M3
Steel Pipe Manufacturing – M3
Stencil Manufacturing – M1, M2, M3
Stereo Equipment Assembly – CM, MR1, M1, MR2, M2, M3
Stereo Equipment Manufacturing – MR1, M1, MR2, M2, M3
Stereo Equipment Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Stockyard or Feeding Pen – M3
Stone Mill or Quarry – M3
Stone Monument Works – M2, M3
Stones (precious or semi-precious), manufacturing products of – CM, MR1, M1, MR2, M2, M3
Storage Building – CM, MR1, M1, MR2, M2, M3
Storage Building for Household Goods, including truck rentals (restrictions) – M1, M2, M3; CUP in C2, C5, CM, and in M1, M2, M3 when less than 500 ft. from A or R Zone
Storage Building for Retail Merchandise, with office – C2, C4, C5, CM, M1, M2, M3
Storage, incidental – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Storage, open – MR1, M1, MR2, M2, M3
Stove Manufacturing – M2, M3
Stove Polish Manufacturing – M3
Striptease Show – (see Adult Cabaret or Adult Theater)
Studio – C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Studio, dance, drama, music, motion – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Sugar Refining – M3
Sulfuric Acid Manufacturing – M3
Sulfurous Acid Manufacturing – M3
Surface Mining Operations – M3
Swap Meet, indoor – CUP in C1, C1.5, C2, C4, C5, M1, M2, M3
Swimming Pool, commercial – C1.5, C2, C4, C5, CM, M1, M2, M3
Swimming Pool, public – (see Recreation Center and Public Swimming Pool)
Swine Keeping (5 or fewer) – A1, MR2, M2, M3; CUP in RA, A2
Swine Keeping (6 or more) – CUP in A1
Swine Ranch – M3
Synthetic Rubber Products Manufacturing – MR1, M1, MR2, M2, M3

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Tableware Manufacturing – MR1, M1, MR2, M2, M3
Tailor Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Tallow Manufacturing – M3
Tank Coating Manufacturing – M2, M3
Tank Farm, petroleum – M3
Tank Retinning and Manufacturing – M2, M3
Tank Truck Parking or Storage – M1, M2, M3
Tanning, Curing, or Storing of Raw Hides or Skins – M3
Tanning Salon – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Tar Distillation – M3
Tar Products Manufacturing – M3
Tar Roofing Manufacturing – M3
Tar Waterproofing Manufacturing – M3
Tattoo Studio – C2, C5, CM, M1, M2, M3
Tavern– CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Taxicab Business – C2, C4, C5, CM, M1, M2, M3
Taxidermist – C2, C4, C5, CM, M1, M2, M3
Tea Room – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Telecommuting Center – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, MR1, M1, MR2, M2, M3
Telephone Exchange – C1.5, C2, C4, C5, CM, M1, M2, M3
Television Broadcasting Transmitter – M1, M2, M3

Television Production (including outdoor sets) – MR1, M1, MR2, M2, M3
Television Production (no outdoor sets) – C2, C5, CM
Television Station – M2, M3
Television Studio (restrictions) – MR1, M1, MR2, M2, M3; CUP in A1, A2, RA, RE, RS, R1, RU, RZ, RW1, R2, RD, RMP, RW2, R3, RAS3, R4, RAS4, R5, CR, C1, C1.5, C2, C4, C5, CM
Tempering – MR1, M1, MR2, M2, M3
Temple, religious – RAS3, R4, RAS4, R5, CR, C2, C4, C5
Temporary Storage of Abandoned, Partially Dismantled, Obsolete, or Wrecked Automobiles (not including wrecking, dismantling, storage, or sale of used parts) – CUP in C2, C4, C5, CM, MR1, M1
Tennis Courts, privately operated – C1.5, C2, C5, CM, M1, M2, M3
Termite Control Business – C2, C5, CM, M1, M2, M3
Terra Cotta Tile Manufacturing – M3
Testing Laboratory – CM, MR1, M1, MR2, M2, M3
Textile Manufacturing – MR2, M2, M3
Textile Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Theater – C1.5, C2, C4, C5, CM, M1, M2, M3
Thrift and Loan Company – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Ticket Agency or Broker – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Tile Manufacturing – M3
Tinsmith Shop – C2, C5, CM, M1, M2, M3
Tire Manufacturing – M3
Tire Retreading or Recapping – MR1, M1, MR2, M2, M3
Tire Shop – C2, C5, CM, M1, M2, M3
Tobacco Products Manufacturing – MR1, M1, MR2, M2, M3
Tobacco Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Toiletries Manufacturing – CM, MR1, M1, MR2, M2, M3
Tombstones, retail sales – C2, C4, C5, CM, M1, M2, M3
Tool Manufacturing – M1, M2, M3
Top Soil Stripping, Removing, or Stockpiling – M3
Tow Truck Dispatching – C2, C5, CM, M1, M2, M3
Towel Supply Business – C2, C5, CM, M1, M2, M3
Toy Manufacturing – MR1, M1, MR2, M2, M3
Tractor Rental Yard – M1, MR2, M2, M3
Trade, Technical, or Occupational School – C2, C4, C5, CM, M1, M2, M3
Trading Stamp Business – C1.5, C2, C4, C5, CM, M1, M2, M3
Trailer Manufacturing – M1, M2, M3
Trailer Rental – C2, C5, CM, M1, M2, M3
Trailer Sales, new – C2, C4, C5, CM, M1, M2, M3
Trailer Sales, used – C2, C5, CM, M1, M2, M3
Trailer (utility) Rental and Storage – M1, M2, M3
Trailers for Use as Temporary Accommodations for Homeless Persons – Public Benefit in OS, P, PB, CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3, PF
Train Station – C2, C4, C5, CM, M1, M2, M3
Transfer Business – C2, C5, CM, M1, M2, M3
Transformer Manufacturing, small – CM, MR1, M1, MR2, M2, M3
Transient Occupancy Residential Structure – (see Hotel)
Travel Agency – RAS3, RAS4, CR, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Traveling Theatrical Performance (under canvas) – C2, C5, CM, M1, M2, M3
Tree Wrecking Yard – M2, M3
Tropical Fish Store – C2, C4, C5, CM, M1, M2, M3
Truck Gardening – RA, RE, RS, R1, R2, RMP, R3, RAS3, R4, RAS4, R5

Truck Rental (restrictions) – C2, C5, CM, M1, MR2, M2, M3
Truck Repairing or Overhauling – MR1, M1, MR2, M2, M3
Truck Sales or Storage Yard – M1, M2, M3
Trucking Yard or Terminal – MR1, M1, MR2, M2, M3
Turkey Hatchery – M2, M3
Turkey Keeping – A1, A2, RA, MR1, M1, MR2, M2, M3
Turkey Raising – A1, A2, MR2, M2, M3
Turpentine Manufacturing – M3
Tutoring Center for School Age Children – RAS3, R4, RAS4, R5, CR, C2, C4, C5
Typewriter Repair – C1.5, C2, C5, CM, M1, M2, M3
Typewriter Ribbon Manufacturing – M1, M2, M3
Typography Shop – C2, C4, C5, CM, MR1, M1, MR2, M2, M3

- U -

U-Drive Business – C2, C5, CM, M1, M2, M3
Undertaking – MR2, M2, M3
Union Hall – C2, C4, C5, CM, M1, M2, M3
University – RAS3, R4, RAS4, R5, CR, C2, C4, C5
Upholstery Shop – C2, C5, CM, MR1, M1, MR2, M2, M3
Used Auto Sales (with conditions of 12.22 A28) – C2, C4
Used Car Lot – C2, C5, CM, MR1, M1, MR2, M2, M3

- V -

Varnish Manufacturing – M3
Vegetable Cannery – MR1, M1, MR2, M2, M3
Vegetable Oil Manufacturing – M3
Venetian Blind Manufacturing – M1, M2, M3
Venetian Blind Laundering, Servicing, and Repairing – C2, C5, CM, M1, M2, M3
Ventilating Duct Manufacturing – M1, M2, M3
Veterinary Clinic – C2, C4, C5, CM, MR1, M1, MR2, M2, M3
Veterinary Hospital – MR1, M1, MR2, M2, M3
Video and Other Media Production (including outdoor sets) – MR1, M1, MR2, M2, M3
Video and Other Media Production (no outdoor sets) – C2, C5, CM
Video Game Arcade (restrictions) – C2, C5, CM, M1, M2, M3
Vinegar Manufacturing – MR2, M2, M3

- W -

Wall Board Manufacturing – M3
Wallpaper Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Warehouse – CM, MR1, M1, MR2, M2, M3
Washer Manufacturing – MR1, M1, MR2, M2, M3
Water Conservation Area – OS
Waterproofing Compound Manufacturing – M1, M2, M3
Water (drinking) Store – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Water Softening Unit, servicing and refrigeration plant – M1, M2, M3
Water Works or Storage Facilities – M1, M2, M3; CUP in PF
Wax Polish Blending, Mixing, and Packaging – M1, M2, M3
Wearing Apparel Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Wedding Chapel – C2, C4, C5
Welding, acetylene or electric – M1, M2, M3
Wharf or Dock for Marine Cargo – M2, M3
Wild Animal Farm – M2, M3
Window and Exhibit Booth Display, Designing, and Fabricating – C2, C5, CM, MR1, M1, MR2, M2, M3
Window Manufacturing – MR1, M1, MR2, M2, M3

Window Shade Manufacturing, cloth – CM, MR1, M1, MR2, M2, M3
Window Shade Manufacturing, wood or metal – M1, M2, M3
Window Shade Shop – C2, C4, C5, CM, M1, M2, M3
Wine Bar – CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Winery – M3
Wine Tasting Establishment– CUP in R5 (see ZA 2007-5927 for restrictions), CR, C1, C1.5, C2, C4, C5, CM, MR1, M1, MR2, M2, M3; must meet ABC requirements.
Wiping Rag Storage – CM, MR1, M1, MR2, M2, M3
Wire, application of rubber to – M3
Wire Manufacturing – M2, M3
Wire Fencing Manufacturing – MR2, M2, M3
Wireless Telecommunication Facility (restrictions) – M1, M2, M3; CUP all other zones
Wood Products Manufacturing –M1, M2, M3
Wood Pulling or Scouring – M3
Wood Yard – M1, M2, M3
Woodworking Equipment Rental Shop – C2, C5, CM, M1, M2, M3
Woodworking Shop – MR1, M1, MR2, M2, M3
Wool Products Manufacturing – MR1, M1, MR2, M2, M3
Woven Wire Manufacturing – MR2, M2, M3
Wrestling Arena (maximum 3,000 seating capacity) – C2, C5, CM, M1, M2, M3
Wrestling Arena (unlimited seating capacity) – M1, M2, M3
Wrought Iron (iron works, ornamental) – M1, M2, M3
Wrought Iron Shop – C2, C5, CM, M1, M2, M3

- X -

Xeroxing – C1.5, C2, C4, C5, CM, M1, M2, M3

- Y -

Yarn Products Manufacturing – CM, MR1, M1, MR2, M2, M3
Yarn Shop – RAS3, RAS4, C1, C1.5, C2, C4, C5, CM, M1, M2, M3
Yeast Manufacturing – MR2, M2, M3
Yoga Studio – (see Health Club)

- Z -

Zoo – M2, M3; CUP in OS

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 24

HOLLYWOOD REDEVELOPMENT PLAN

As First Amended on
May 20, 2003

(Ordinance No. 175236 -- Effective Date: July 12, 2003)

HOLLYWOOD REDEVELOPMENT PLAN

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Attachments:

Exhibit A.1	Redevelopment Plan Map
~~Exhibit A.2~~	~~Alternate Land Uses Map~~
Exhibit A.3	Special Districts Map
Exhibit B	Legal Description Hollywood Project Area
Exhibit C	Limitation on Type, Size and Height of Buildings
Exhibit D	Diagram Illustrating Approximate Amount of Open Space to be provided and Property Devoted to Public Purposes

REDEVELOPMENT PLAN
FOR THE
HOLLYWOOD REDEVELOPMENT PROJECT

I. 100. INTRODUCTION

This is the Redevelopment Plan (the "Plan") for the Hollywood Redevelopment Project (the "Project") in the City of Los Angeles (the "City"), County of Los Angeles, State of California. This Plan consists of text (Sections 100 through 1300) and the following exhibits: the Redevelopment Plan Map (Exhibit "A" (including Amended Exhibit A.1), Redevelopment Plan Map; and Exhibit A.3, Special Districts); a Legal Description of the Project boundary (Exhibit "B"); a Diagram Showing Limitations on Type, Size and Height of Buildings (Exhibit "C"); and a Diagram Showing Approximate Amount of Open Space and Property Devoted to Public Purposes (Exhibit "D"). This Plan was prepared by the Community Redevelopment Agency of the City of Los Angeles, California (the "Agency") pursuant to the Community Redevelopment Law of the State of California (Health and Safety Code, Section 33000 et seq.), the California Constitution, and all applicable local codes and ordinances, and is based on the Preliminary Plan as amended.

The Project Area (the "Project Area") includes all properties within the Project boundary shown on the Redevelopment Plan Map.

The proposed redevelopment of the Project Area as described in this Plan conforms to the General Plan for the City of Los Angeles, as applied in accord with local codes and ordinances.

This Plan provides the Agency with powers, duties and obligations to implement and further the program generally formulated in this Plan for the redevelopment, rehabilitation, and revitalization of the Project Area.

Redevelopment of the Project Area pursuant to this Plan will attain the purposes of the California Community Redevelopment Law: (1) by the elimination of areas suffering from depreciated values, impaired investments, and economic and social maladjustment; (2) by the replanning, redesign and rehabilitation and/or development of areas which are stagnant or

improperly utilized and which could not be accomplished by private enterprise acting alone, without public participation and assistance; and (3) by protecting and promoting sound development and redevelopment of blighted areas and the general welfare of the citizens of the City by remedying such injurious conditions through the employment of appropriate means.

II. 200. PROJECT AREA BOUNDARY AND LEGAL DESCRIPTION

The boundary of the Project Area is shown on the Redevelopment Plan Map attached as Amended Exhibit A.1 and is described in the Legal Description attached as Exhibit B.

III. 300. REDEVELOPMENT PLAN GOALS

1) Encourage the involvement and participation of residents, business persons, property owners, and community organizations in the redevelopment of the community.

2) Preserve and increase employment, and business and investment opportunities through redevelopment programs and, to the greatest extent feasible, promote these opportunities for minorities and women.

3) Promote a balanced community meeting the needs of the residential, commercial, industrial, arts and entertainment sectors.

4) Support and encourage the development of social services with special consideration given to participating in projects involving community based organizations that serve runaways, the homeless, senior citizens and provide child care services and other social services.

5) Improve the quality of the environment, promote a positive image for Hollywood and provide a safe environment through mechanisms such as:

a) adopting land use standards;

b) promoting architectural and urban design standards including: standards for height, building setback, continuity of street facade, building materials, and compatibility of new construction with existing structures and concealment of mechanical appurtenances;

c) promoting landscape criteria and planting programs to ensure additional green space;

d) encouraging maintenance of the built environment;

e) promoting sign and billboard standards;

f) coordinating the provision of high quality public improvements;

g) promoting rehabilitation and restoration guidelines;

h) integrate public safety concerns into planning efforts.

6) Support and promote Hollywood as the center of the entertainment industry and a tourist destination through the retention, development and expansion of all sectors of the entertainment industry and the preservation of landmarks related to the entertainment industry.

7) Promote the development of Hollywood Boulevard within the Hollywood commercial core as a unique place which:

a) reflects Hollywood's position as the entertainment center;

b) provides facilities for tourists;

c) contains active retail and entertainment uses at the street level;

d) provides for residential uses;

e) is pedestrian oriented;

f) is a focus for the arts, particularly the performing arts; and

g) recognizes and reinforces its history and architecture.

8) Promote and encourage the retention and expansion of all segments of the arts community and the support facilities necessary to foster the arts and attract the arts through land use and development policies such as the creation of a theater district.

9) Provide housing choices and increase the supply and improve the quality of housing for all income and age groups, especially for persons with low and moderate incomes; and to provide home ownership opportunities and other housing choices which meet the needs of the resident population.

10) Promote the development of sound residential neighborhoods through mechanisms such as land use, density and design standards, public improvements, property rehabilitation, sensitive in-fill housing, traffic and circulation programming, development of open spaces and other support services necessary to enable residents to live and work in Hollywood.

11) Recognize, promote and support the retention, restoration and appropriate reuse of existing buildings, groupings of buildings and other physical features especially those having significant historic and/or architectural value and ensure that new development is sensitive to these features through land use and development criteria.

12) Support and encourage a circulation system which will improve the quality of life in Hollywood, including pedestrian, automobile, parking and mass transit systems with an emphasis on serving existing facilities and meeting future needs.

13) Promote and encourage the development of health, education, child and youth care, and senior citizen facilities and programs to enable the development of a community with a variety of lifestyles.

14) Promote and encourage development of recreational and cultural facilities and open spaces necessary to support attractive residential neighborhoods and commercial centers.

15) Promote the development of the varied ethnic communities in Hollywood.

16) To the maximum extent feasible, seek to build replacement housing within the Project Area prior to the destruction or removal of dwelling units which house low and moderate income people. The Agency shall make a good faith effort to relocate displacees within the Project Area unless they choose to relocate elsewhere. Project displacees shall be provided a priority for occupancy in housing which the Agency has facilitated.

IV. 400. PROPOSED REDEVELOPMENT ACTIVITIES

401. General

The Agency proposes to eliminate and prevent the spread of blight and blighting influences, and to strengthen the economic base of the Project Area and the community by:

1) Providing for participation in the redevelopment process by owners and tenants located in the Project Area, subject to the limitations and requirements provided by the law and established in the rules governing owner and tenant participation adopted by the Agency;

2) Acquisition of real property;

3) Management of property under the ownership and control of the agency;

4) Relocation assistance to displaced occupants of acquired property;

5) Demolition or removal of buildings and improvements;

6) Installation, construction, or re-construction of streets, utilities, and other public facilities and improvements;

7) Rehabilitation, development or construction of commercial, residential, or other uses in accordance with the Plan;

8) Disposition of property for uses in accordance with this Plan; and

9) Redevelopment of land by private enterprise and public agencies for uses in accordance with this Plan.

In the accomplishment of these activities, and in the implementation and furtherance of this Plan, the Agency is authorized to use all the powers provided in this Plan and all the powers to the extent now or hereafter permitted by law, which powers are not expressly limited by this Plan.

To the maximum extent permitted by law, the activities of the Agency pertaining to implementation of this Redevelopment Plan including formulation of work programs shall be developed in consultation with the Project Area Committee.

The Agency shall work with the City Planning Department to prepare proposed revisions to the Hollywood Community Plan and zoning within the Hollywood Redevelopment Project Area.

402. Owner and Tenant Participation

402.1 Opportunities for Owner and Tenant Participation

The Agency shall extend preferences to owners and to tenants consistent with the requirements prescribed by the Plan and the law. The Agency is authorized to permit owners and tenants, if they so desire, to purchase and/or develop real property in the Project Area.

The Agency is also authorized to permit persons who are owners of residential, commercial and other types of real property in the Project Area to be given the opportunity to participate in redevelopment by rehabilitation, by retention of improvements, or by new development by retaining all or a portion of their properties, by acquiring adjacent or other properties from the Agency and purchasing other properties or interests therein in the Project Area.

The Agency shall extend preferences to persons who are engaged in business in the Project Area to re-enter in business within the Project Area if they otherwise meet the requirements prescribed by the Plan and the Participation Rules. The Agency shall also extend preferences to other owners and tenants in the Project Area if they otherwise meet the requirements prescribed by the Plan and the Participation Rules. The Agency is authorized to permit owners and tenants, if they so desire, to purchase and develop or redevelop real property in the Project Area.

If conflicts develop between the desires of participants for particular sites or land uses, the Agency is authorized to establish reasonable priorities and preferences and to determine a solution by consideration of such factors as length of time in the area, accommodation

of as many participants as possible, ability to perform, and conformity with intent and purpose of this Plan.

In addition to opportunities for participation by individual persons and firms, participation to the extent it is feasible shall be available for two or more persons, firms or institutions, to join together in partnerships, corporations, or other joint entities as described in the Owner Participation Rules adopted by the Agency.

Participation is desired in the redevelopment of the Project Area by as many residential and commercial owners and tenants as possible.

Participation opportunities shall necessarily be subject to and limited by such factors as the expansion of public facilities; elimination and changing of land uses; realignment of streets; ability of owners to finance acquisition and development in accordance with the Plan; reduction in the total number of individual parcels in the Project Area and; assembly and development of areas for public and/or private development in accordance with this Plan.

402.2 Rules for Participation Opportunities

The Agency shall promulgate rules for owner and tenant participation.

402.3 Participation Agreements

Each person or entity desiring to become a participant must enter into a binding agreement with the Agency, if so requested by the Agency, by which the participant agrees to acquire, rehabilitate, develop, or use the property in conformance with the Plan and to be subject to the provisions thereof. In such agreements, participants who retain real property shall be required to join in the recordation of such documents as are necessary to make the provisions of this Plan applicable to their properties.

Whether or not a participant enters into a participation agreement with the Agency the provisions of this Plan are applicable to all public and private property in the Project Area.

In the event an owner-participant fails or refuses to rehabilitate or develop his real property pursuant to this Plan and a Participation Agreement as defined herein, the real property or any interest therein may be acquired by the Agency and sold or leased for rehabilitation or development in accordance with this Plan.

403. Property Acquisition

403.1 Acquisition of Real Property

The Agency may acquire, but is not required to acquire, any real property located in the Project Area by gift, devise, exchange, purchase, eminent domain or any other lawful method.

In order to accomplish the goals of this Plan, it is in the public interest and necessary for the power of eminent domain to be available to the Agency to acquire real property in the Project Area which cannot be acquired by gift, devise, exchange, purchase or any other lawful method pursuant to this Plan.

The Agency shall make every reasonable effort to acquire real property by negotiation.

The Agency shall not exercise the power of eminent domain to acquire any parcel of real property within the Project Area for which proceedings in eminent domain have not commenced within twelve (12) years after the adoption of the ordinance adopting the First Amendment to this Plan. This time limitation may be extended only by amendment of this Plan, unless otherwise provided for by law. The Agency shall not exercise the power of eminent domain to acquire any parcel of real property in the Project Area on which any persons lawfully reside.

The Agency is authorized to acquire structures without acquiring the land upon which those structures are located. The Agency is also authorized to acquire any other interest in property less than a fee.

The Agency shall not acquire property to be retained by an owner pursuant to a participation agreement if the owner fully performs under the agreement. The Agency shall not acquire real property on which an existing building is to be continued on its present site and in its present form and use without the consent of the owner, unless such building requires structural alteration, improvement, modernization, or rehabilitation, or the site or lot on which the building is situated requires modification in size, shape or use or it is necessary to impose upon such property any of the standards, restrictions and controls of this Plan and the owner fails or refuses to participate in the Plan by executing a Participation Agreement.

403.2 Acquisition of Personal Property

Generally, personal property shall not be acquired. However, where necessary in the execution of this Plan, the Agency is authorized to acquire personal property in the Project Area by any lawful means, including eminent domain.

404. Property Owned and Managed by the Agency

During such time as property, if any, in the Project Area is owned by the Agency, such property shall be under the management and control of the Agency. Such property may be rented or leased by the Agency pending its disposition for redevelopment, and such rental or lease shall be pursuant to such policies as the Agency may adopt.

In any year during which it owns property in the Project Area, the Agency is authorized, but not required, to pay directly to any City, County, City and County, District, including, but not limited to, a School District, or other public corporation for whose benefit a tax would have been levied upon such property had it not been exempt, an amount of money in lieu of taxes.

405. Relocation of Occupants Displaced by Agency Acquisition

405.1 Assistance in Finding Other Locations

The Agency shall assist all persons, business concerns, and others displaced by Agency acquisition of property in the Project Area in finding other locations and facilities. In order to carry out the Project with a minimum of hardship to displaced persons, business concerns, and others, the Agency shall assist such persons, business concerns and others in finding new locations that are decent, safe, sanitary, within their respective financial means, in reasonably convenient locations, and otherwise suitable to their respective needs. The Agency shall make a good faith effort to relocate displacees within the Project Area unless they choose to relocate elsewhere. Project displacees shall be provided a priority for occupancy in housing which the Agency has facilitated.

As established by state statute there is a Relocation Appeals Board relating to the relocation activities of the Agency. The Board shall promptly hear all complaints brought by residents of the Project Area relating to relocation and shall determine if the Agency has complied with state statutes pertaining to relocation, where applicable, federal regulations and the

requirements and intent of this Plan as it relates to relocation. The Board shall, after public hearing, transmit its findings and recommendations to the Agency.

405.2 Relocation Payments

The Agency shall make all relocation payments required by law to persons, business concerns, and others displaced from property in the Project. Such relocation payments shall be made pursuant to the California Relocation Assistance Law (Government Code Section 7260 *et seq*.) and Agency rules and regulations adopted pursuant thereto. The Agency may make such other payments as it may deem appropriate and for which funds are available.

406. Demolition, Clearance, Public Improvements, Building and Site Preparation

406.1 Demolition and Clearance

The Agency is authorized to demolish and clear buildings, structures, and other improvements from any real property owned by the Agency or which the Agency has lawful possession of or with the agreement of the property owner in the Project Area as necessary to carry out the purposes of this Plan.

406.2 Public Improvements, Public Facilities, and Public Utilities

The Agency is authorized to install and construct, or cause to be installed and constructed, public improvements and facilities (within or outside the Project Area) necessary to carry out this Plan. These include, but are not limited to, street improvements, site improvements, public parking, and other improvements necessary for the development and use of the Project Area. The listing of improvements and facilities, as set forth below, shall not be deemed limitations on the Agency to carry out and implement the Plan.

Such improvements and facilities for the Project include but are not limited to: 1) street improvements relating to public rights-of-way, including construction; resurfacing, curbs, gutters and sidewalks; electrical, natural gas, communication and water distribution systems; flood control facilities; sewers; storm drains; other public and private pipeline conveyance systems; over- and under-passes; pedestrian bridges; pedestrian amenities; traffic control devices; lighting; signalization; signage; trees; landscape improvements; 2) site improvements including but not limited to: pedestrian bridges; pedestrian ways and amenities; platforms; building pads; foundations; retaining walls; grading; demolition; security and security hardware; fences; elevators; escalators; plazas; parks; cultural and recreational facilities; 3) parking improvements including but not limited to: surface lots; structures; lighting; signage; traffic control devices; and landscape

improvements; 4) public transportation facilities necessary to provide access to a site; 5) improvements related to the development of a mass transportation system; and 6) other incidental easements and related facilities necessary for the use, development and/or access to the Project Area.

It is the intent of this Plan to encourage undergrounding of utilities, therefore, all new utilities shall be installed underground when feasible.

406.3 Preparation of Building Sites

The Agency is authorized to prepare, or cause to be prepared and developed, as building sites any real property in the Project Area. The Agency is also authorized to construct foundations, platforms, and other structural forms necessary for the provision or utilization of air rights sites for buildings to be used for commercial, public and other uses provided in this Plan.

407. Property Disposition and Development

407.1 Real Property Disposition and Development

407.1.1 General

For the purposes of this Plan, the Agency is authorized to sell, lease, exchange, subdivide, transfer, assign, pledge, encumber by mortgage or deed of trust, or otherwise dispose of any interest the Agency may have in real property. In the manner required and to the extent permitted by law, before any interest in real property of the Agency acquired in whole or in part, directly or indirectly, with tax increment moneys is sold, leased, or otherwise disposed of for development pursuant to this Plan, such sale, lease or disposition shall be first approved by the City Council after public hearing.

To the extent permitted by law, the Agency is authorized to dispose of real property by negotiated lease, sale, or transfer without public bidding. No real or personal property of the Agency, or any interest therein, shall be sold or leased to a private person or private entity for an amount less than its fair market value as determined by the Agency for uses in accordance with this Redevelopment Plan and any covenants and controls recorded against the property by the Agency.

All real property acquired by the Agency in the Project Area shall be sold or leased to public or private persons or entities for development for the uses permitted in this Plan. Real property may be conveyed by the Agency to the City and, where beneficial to the Project Area, to any other public body without charge or for an amount at or less than fair value.

All purchasers or lessees of property from the Agency shall be made obligated to use the property for the purposes designated in this Plan, to begin and complete development of the property within a period of time which the Agency fixes as reasonable, and to comply with other conditions which the Agency deems necessary to carry out the purposes of this Plan.

During the period of development in the Project Area, the Agency shall ensure that the provisions of this Plan and of other documents formulated pursuant to this Plan are being observed, and that the development in the Project Area is proceeding in accordance with development documents and time schedules.

407.1.2 Disposition and Development Documents

The Agency shall reserve powers and controls in disposition and development documents as may be necessary to prevent transfer, retention, or use of property for speculative purposes and to insure that development is expeditiously carried out pursuant to this Plan.

To provide adequate safeguards to ensure that the provisions of this Plan will be carried out and to prevent the recurrence of blight, all real property sold, leased, or conveyed by the Agency, as well as all property subject to participation agreements, shall be made subject to the provisions of this Plan by leases, deeds, contracts, agreements, declarations of restrictions, provisions of the zoning ordinance, conditional use permits, or other means. Where appropriate, as determined by the Agency, such documents or portions thereof shall be recorded in the Office of the Recorder of the County.

The leases, deeds, contracts, agreements, and declarations of restrictions may contain restrictions, covenants, covenants running with the land, rights of reverter, conditions subsequent, equitable servitudes, or any other provision necessary to carry out this Plan.

All property in the Project Area is hereby subject to the restriction that there shall be no discrimination or segregation based upon race, color, religion, creed, sex, sexual orientation, marital status, national origin or ancestry in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of property in the Project Area. All property sold, leased, conveyed, or subject to a participation agreement, by or through the Agency, shall be expressly subject by appropriate documents to the restriction that all deeds, leases, or contracts for the sale,

lease, sublease, or other transfer of land in the Project Area shall contain such non-discrimination and non-segregation clauses as are required by law.

407.1.3 <u>Development by the Agency or Other Public Bodies or Entities</u>

To the extent now or hereafter permitted by law, the Agency may, with the consent of the City Council of the City of Los Angeles, determine to pay all or part of the value of the land for and the cost of the installation and construction of any building, facility, structure, or other improvement which is publicly owned either within or outside the Project Area, if the City Council determines: (1) that such buildings, facilities, structures, or other improvements are of benefit to the Project Area or the immediate neighborhood in which the Project is located, regardless of whether such improvement is within another project area; and (2) that no other reasonable means of financing such buildings, facilities, structures, or other improvements are available to the community. Such determinations by the Agency and the City Council shall be final and conclusive.

Specifically, the Agency may pay all or part of the value of the land for and the cost of the installation and construction of public schools, other public educational facilities, day care facilities, hospitals, libraries, museums, government offices or other public facilities as well as any building, facility, structure or other improvement referred to in Section 406 of this Plan. The authorization contained in this section shall not require the Agency to undertake any such development or otherwise be deemed to entitle any public body or entity to such assistance by the Agency.

When the value of such land or the cost of the installation and construction of such building, facility, structure, or other improvement, or both, has been, or will be paid or provided for initially by the City or other public corporation, the Agency may enter into a contract with the City or other public corporation under which it agrees to reimburse the City or other public corporation from all or part of the value of such land or all or part of the cost of such building, facility, structure, or other improvement, or both, by periodic payments over a period of years.

The obligation of the Agency under such contract shall constitute an indebtedness of the Agency for the purpose of carrying out the Redevelopment Project for the Project Area, which indebtedness may be made payable out of taxes levied in the Project Area and

allocated to the Agency under subdivision (b) of Section 33670 of the California Redevelopment Law and Section 602 of this Plan, or out of any other available funds.

In a case where such land has been or will be acquired by, or the cost of the installation and construction of such building, facility, structure or other improvement has been paid by a parking authority, joint powers entity, or other public corporation to provide a building, facility, structure, or other improvement which has been or will be leased to the City, such contract may be made with, and such reimbursement may be made payable to the City.

407.1.4 Development Plans

All development plans (whether public or private) shall be subject to review and approval by the Agency. All development in the Project Area must conform to this Redevelopment Plan.

407.2 Personal Property Disposition

For the purposes of this Plan, the Agency is authorized to lease, sell, exchange, transfer, assign, pledge, encumber, or otherwise dispose of personal property which is acquired by the Agency.

408. Cooperation with Public Bodies

Certain public bodies are authorized by state law to aid and cooperate with or without consideration in the planning, undertaking, construction, or operation of this Project. The Agency shall seek the aid and cooperation of such public bodies and shall attempt to coordinate this Plan with the activities of such public bodies in order to accomplish the purposes of redevelopment and the highest public good.

The Agency, by law, is not authorized to acquire real property owned by public bodies without the consent of such public bodies. The Agency, however, will seek the cooperation of all public bodies which own or intend to acquire property in the Project Area. Any public body which owns or leases property in the Project Area will be allowed privileges of owner and tenant participation if such public body is willing to enter into a Participation Agreement with the Agency. All plans for development of property in the Project Area by a public body shall be subject to Agency approval.

The Agency may impose on all public bodies the planning and design controls contained in or permitted by this Plan to ensure that present uses and any future development by public bodies will conform to the requirements of this Plan. The Agency is authorized to financially

(and otherwise) assist any public entity in the cost of public land, buildings, facilities, structures, or other improvements (within or outside the Project Area) which land, buildings, facilities, structures or other improvements are of benefit to the Project.

The Agency may also pay to any taxing agency with territory located within the Project Area (other than the City), any amounts of money which, in the Agency's determination, are appropriate to alleviate any financial burden or detriment caused to such taxing agency by the Project.

409. Rehabilitation, Conservation and Moving of Structures

409.1 Rehabilitation and Conservation

It shall be the purpose of this Plan to encourage the retention of existing structures by a program of conservation and rehabilitation when consistent with the provisions of this Plan. The Agency is authorized to conduct a program of assistance, including financial assistance, to encourage owners of property within this Plan to meet such standards as may be developed by the Agency for the Project Area. The Agency is authorized to rehabilitate and conserve or cause to be rehabilitated and conserved buildings in the Project Area which are owned by the Agency or which the Agency has lawful possession of or with the agreement of the property owner.

1) The rehabilitation of the structure must be compatible with the provisions of this Plan;

2) Rehabilitation and conservation activities on a structure must be carried out in an expeditious manner and in conformance with the requirements of this Plan and rehabilitation standards as may be adopted by the Agency;

3) The rehabilitation must not conflict with the expansion of public improvements, facilities and utilities approved by the Agency in accordance with the Plan;

The Agency may adopt standards for the rehabilitation of properties in the Project Area by any private person, entity or any public body. All rehabilitation undertaken in the Project Area shall conform to such rehabilitation standards. The rehabilitation of buildings determined by the Agency to be of architectural and/or historical significance shall be rehabilitated in accordance with the "Secretary of the Interior's Standards for Rehabilitation".

409.2 Moving of Structures

As may be necessary in carrying out this Plan, the Agency is authorized to move or to cause to be moved any standard structure or building or any structure or building which can be rehabilitated to a location within or outside the Project Area.

410. Low and Moderate Income Housing

410.1 Authority Generally

The Agency may, inside or outside the Project Area, acquire land, improve sites, or construct or rehabilitate structures in order to provide housing for persons and families of low or moderate income. The Agency may also provide subsidies to, or for the benefit of, such persons and families or households to assist them in obtaining housing.

410.2 Replacement Housing

Whenever dwelling units housing persons and families of low or moderate income are destroyed or removed from the low and moderate income housing market as part of the Project, the Agency shall, within four years of such destruction or removal, rehabilitate, develop, or construct, or cause to be rehabilitated, developed, or constructed, for rental or sale to persons and families of low or moderate income an equal number of replacement dwelling units at affordable housing costs within the Project Area or within the City, in accordance with all of the provisions of Sections 33413 and 33413.5 of the Community Redevelopment Law, and this Plan. In addition, the Agency shall provide from funds lawfully available to it for such purposes an additional .25 housing unit for each unit removed from the housing market by the Agency. The Agency is further authorized to take whatever steps are necessary to meet the requirements of Section 33413 of the Community Redevelopment Law for the replacement of very low income dwelling units. To the maximum extent feasible, the Agency shall seek to build replacement housing within the Project Area and prior to the destruction or removal of dwelling units which house low and moderate income people.

The Agency shall not displace persons or families from their dwelling units unless and until there is a suitable housing unit available and ready for occupancy by such displaced person or family at rents comparable to those at the time of their displacement.

410.3 Increased and Improved Supply of Housing

Pursuant to Section 33334.2 of the Community Redevelopment Law, not less than 20 percent of all taxes which are allocated to the Agency pursuant to subdivision (b) of Section 33670 of the Community Redevelopment Law and Section 602 of this Plan shall be used by the Agency for the purposes of increasing and improving the City's supply of housing for persons and families of very low, low, or moderate income, unless one or more of the following findings are made: (1) that no need exists in the City, the provision of which would benefit the Project Area, to improve or increase the supply of housing for persons and families of low or moderate income or very low income households; or (2) that some stated percentage less than 20 percent of the taxes which are allocated to the Agency pursuant to Section 602 of this Plan is sufficient to meet such housing need; or (3) that a substantial effort to meet low and moderate income housing needs in the City is being made and that this effort, including the obligation of funds currently available for the benefit of the City from State, local, and Federal sources for low and moderate income housing alone or in combination with the taxes allocated under Section 33334.2 of the Community Redevelopment Law, is equivalent in impact to the funds otherwise required to be set aside pursuant to said Section.

In carrying out the purposes of Section 33334.2 of the Community Redevelopment Law, and not withstanding any other provision of this Plan, the Agency may exercise any or all of its powers, including, but not limited to, the following:

1) Acquire land or building sites;
2) Improve land or building sites with on-site or off-site improvements;
3) Donate land to private or public persons or entities;
4) Construct buildings or structures;
5) Acquire buildings or structures;
6) Rehabilitate buildings or structures;
7) Provide subsidies to or for the benefit of persons or families of very low, low, or moderate income; and
8) Develop plans, pay principal and interest on bonds, loans, advances, or other indebtedness, or pay financing or carrying charges.

The Agency may use these funds to meet, in whole or in part, the replacement housing provisions in Section 410.2 of this Plan. These funds may be used inside or

outside the Project Area provided, however, that funds may be used outside the Project Area only if findings of benefit to the Project are made as required by Section 33334.2 of the Community Redevelopment Law.

The funds for this purpose shall be held in a separate Low and Moderate Income Housing Fund until used. Any interest earned by such Low and Moderate Income Housing Fund shall accrue to the Fund.

410.4 New or Rehabilitated Dwelling Units Developed Within the Project Area

At least thirty percent (30%) of all new or rehabilitated dwelling units developed within the Project Area by the Agency, if any, shall be for persons and families of low or moderate income; and of such thirty percent, not less than fifty percent (50%) thereof shall be for very low income households. At least fifteen percent (15%) of all new or rehabilitated units developed within the Project Area by public or private entities or persons other than the Agency shall be for persons and families of low or moderate income; and of such fifteen percent, not less than forty percent (40%) thereof shall be for very low income households. The percentage requirements set forth in this Section shall apply in the aggregate to housing in the Project Area and not to each individual case of rehabilitation, development or construction of dwelling units,

410.5 Duration of Dwelling Unit Availability

The Agency shall require that the aggregate number of dwelling units rehabilitated, developed or constructed pursuant to Sections 410.2, 410.3 and 410.4 of this Plan shall remain for persons and families of low or moderate income and very low income households, respectively, for not less than the period set forth in Section 1100 of this Plan for the duration of this Plan's development controls.

411. Entertainment Industry Development

The entertainment industry and related use have in the past been dominant in the economy of Hollywood providing the impetus for the initial residential, commercial and industrial growth of Hollywood. In order to ensure the future of this industry in Hollywood and the employment it provides the Agency shall develop an economic development strategy to provide for the attraction, retention and expansion of entertainment industry and related uses in Hollywood. The research to develop this program shall be initiated within the first year following the adoption of this Plan.

412. Social Needs

The realization of the goals established in this Plan are dependent upon providing for the social as well as the physical and economic needs of the residential and business communities of Hollywood. A balanced approach to the redevelopment of the Project Area requires a programmatic approach that includes the allocation of resources to achieve the goals of the Hollywood Plan.

The social needs of the community include but are not limited to the need for day care facilities, housing for very low and low income persons including the elderly, the homeless, and runaways, educational and job training facilities, counseling programs and facilities.

Therefore, during the implementation of this Plan the Agency shall expend or cause to be expended an amount equal to 10% of the tax increment available to the Agency pursuant to Section 601 of this Plan to address the social needs of the community.

Projects funded pursuant to this section must address the goals of the Plan and not substitute for existing public or private resources allocated to the Project. The organization requesting the funds must show evidence of soliciting funds in good faith from other public or private sources.

This Plan authorizes and enables the Agency to provide assistance to address social needs through various mechanisms such as:

1. Direct funding assistance.
2. Provide assistance to non-profit corporations providing social services to the Hollywood community.
3. Development of housing for persons and families of very low, and low income housing for the homeless, runaways and the elderly.
4. Assistance in the rehabilitation or construction of new public and private facilities.
5. Negotiations with developers to provide assistance to community service organizations.

Every work program and budget for the Hollywood Redevelopment Project shall include a component which specifically identifies how the social needs of the community are to be addressed.

Such expenditures shall be made from any and all funds lawfully available for such purposes. "Tax increment available to the Agency pursuant to Section 601" shall mean, for purposes

of this section, tax increments allocated to the Agency (which are not pledged to pay tax allocation bonds) after deduction for amounts paid to taxing entities by operation of law and/or pursuant to reimbursement agreements between the Agency and such taxing entities, plus net usable tax allocation bond proceeds received by the Agency less amounts paid to such taxing entities by operation of law and/or pursuant to reimbursement agreements. The requirements of this Section are intended to be and shall be in addition to the low and moderate income housing expenditure requirements of Section 410.3 of this Plan.

V. 500. LAND USES PERMITTED IN THE PROJECT AREA

501. General Controls and Limitations

All real property in the Project Area is hereby made subject to the controls and requirements of this Plan and all applicable state laws and city ordinances and regulations. No real property in the Project Area shall be subdivided, developed, rehabilitated or otherwise changed after the date of the adoption of this Redevelopment Plan, except in conformance with the provisions of this Plan or applicable Designs for Development adopted pursuant to this Plan. The Agency shall submit each design for development and the urban design plan referred to in Section 506.2.1 of this Plan to the Planning Commission for its review and recommendation prior to adoption thereof by the Agency. The Planning Commission shall have 90 days from its receipt thereof within which to submit its recommendation to the Agency. In the absence of such Planning Commission recommendation within 90 days the Agency may proceed to act upon the matter.

502. Map

The Redevelopment Plan Map, "Exhibit A.1," attached hereto and incorporated herein shows the location of the Project Area boundaries, the immediately adjacent streets, the public rights-of-way, the proposed land uses to be permitted in the Project Area for all public, semi-public and private land and designated districts of special import.

~~The Agency is authorized to permit the Land Uses shown on Amended Exhibit A.1.~~ Notwithstanding anything to the contrary in this Plan, the land uses permitted in the Project Area shall be those permitted by the General Plan, the applicable Community Plan, and any applicable City zoning ordinance, all as they now exist or are hereafter amended and/or supplemented from time to time. The initiation of any proposed amendment and/or supplement to the General Plan, applicable Community Plan, and/or any applicable City zoning ordinance shall be coordinated

between the Department of City Planning and the Agency. In the event the General Plan, the applicable Community Plan, and/or any applicable City zoning ordinance is amended and/or supplemented with regard to any land use in the Project Area, the land use provisions of this Plan, including, without limitation, all Exhibits attached hereto, shall be automatically modified accordingly without the need for any formal plan amendment process. At such time, the Agency shall be authorized to replace any Exhibits hereto with modified Exhibits in order to conform to such amended or supplemented General Plan, applicable Community Plan, or applicable City zoning ordinance.

503. Design(s) for Development

The Agency is authorized to adopt development and design guidelines, after a public hearing, which are intended to carry out the goals of the Plan. ~~If~~ T~~t~~he area guidelines shall conform to and implement the objectives of the district. These development and design guidelines shall be known as Design(s) for Development. Within the limits, restrictions, and controls established in the Plan, the Agency is authorized to establish development standards including standards for: types of uses; building heights; land coverage; bulk; size; density; landscaping including walls, fences and hedges; setbacks which may include development and landscaping within the setbacks; design criteria including architectural style; loading areas; service facilities which may include trash storage areas; signs and billboards; lighting; historic preservation and rehabilitation; security and safety; transportation improvements such as traffic circulation and capacity, access points and curb cuts, parking requirements and restrictions, and travel demand management standards which may include provisions for bus subsidies, van pooling and ride sharing; and other development design and density controls necessary for proper development of both private and public areas within the Project area.

504. Variances, Conditional Use Permits, Building Permits and Other Land Development Entitlements

No zoning variance, conditional use permit, building permit, demolition permit or other land development entitlement shall be issued in the Project Area from the date of adoption of this Plan unless and until the application therefor has been reviewed by the Agency and determined to be in conformance with the Plan and any applicable Design for Development. The Agency shall develop procedures for the expedited review of said applications.

505. Residential Uses

Areas shown on the map as Residential shall be maintained, developed or used for single or multiple-family housing at or below the housing densities indicated. Parking facilities for residential uses shall be permitted in areas shown on the map as residential.

It is an important goal of this Plan to maximize the opportunity for housing choices. Therefore, the Plan designates six residential categories in the Project Area which permit a variety of housing choices in order to encourage the preservation and enhancement of the varied and distinctive residential character of the community, preserve stable single-family residential neighborhoods, and provide multiple-family dwelling units. All new housing shall be developed in accordance with the densities indicated below:

Low:	Up to 7 units per gross acre
Low Medium:	Up to 24 units per gross acre
Medium:	Up to 40 units per gross acre
High Medium:	Up to 60 units per gross acre
High:	Up to 80 units per gross acre
Very High:	Up to 130 units per gross acre

A gross acre is defined as the site area plus one half of any abutting street(s) and alley(s).

Within portions of the Project Area designated for residential use there are clusters of single family homes and architecturally and/or historically significant buildings or groups of buildings. There is also a need for additional parking.

Therefore, in order to enhance the environmental quality of residential areas Design(s) for Development may be adopted to:

1) Ensure that the scale, density, bulk and general architectural style of new development is compatible with the architectural and/or historical features of a neighborhood;

2) Reduce the permitted density of an area below that density otherwise permitted in order to preserve clusters of houses; and

3) Ensure that an appropriate amount of parking is provided for residents of the area.

The residential density provisions of this Plan as they pertain to areas designated "Low Medium 2" shall not be effective for a period of 180 days following the adoption of this Plan.

505.1 Very High

Very High: Up to 130 units per gross acre.

Development within the Very High designation is intended to provide a high density housing choice within Hollywood. Development above 80 units per gross acre shall be reviewed and approved by the Agency to ensure architectural quality, to ensure that parking is provided which will be sufficient to serve the needs of the occupants of the development, and to ensure that architecturally and/or historically significant buildings within a development site are, to the extent practical, preserved.

The Agency shall review and approve development above 80 units per gross acre. The review shall include an examination of architectural plans (including landscaping, circulation and parking and elevation drawings) to determine compatibility with the character, scale and architecture of the neighborhood, and to ensure that sufficient parking is provided.

505.2 Franklin Avenue Design District

That area on the Redevelopment Plan Map designated "Franklin Avenue Design District" recognizes the need for sensitivity and balance in the redevelopment of this area because of the potential impact upon views to and from the Hollywood Hills. The Agency shall review all new development within this District to ensure that views to and from the Hollywood Hills are, to the extent practical, preserved. This review shall include an examination of the following:

- The topography in the area and the existing building scale in the immediate vicinity;
- The views to and from the Hollywood Hills which will be affected and;
- The development plans including the building massing, orientation, height and bulk.

The Agency shall, within five (5) years following the adoption of the First Amendment to this Plan, prepare a detailed design plan for this area which addresses preservation of architecturally and/or historically significant buildings, parking, circulation and views to and

from the Hollywood Hills including the height, orientation and massing of new development within this District.

The Agency may adopt one or more Design(s) for Development which may implement this comprehensive plan.

505.3 Housing Incentive Units

In order to promote revitalization and the improvement of residential properties and neighborhoods, the Agency may authorize new housing to be developed or buildings to be rehabilitated with more dwelling units per acre than otherwise permitted by Section 505. Such increased dwelling units shall be known as Housing Incentive Units. Housing Incentive Units may be granted in order to improve design quality and to achieve one or more of the following objectives:

1) To provide housing units for occupants with a variety of incomes;

2) To provide for the preservation of historic and/or architecturally significant structures;

3) To provide recreation areas, cultural facilities, social services and/or open space.

The Agency shall grant no more than 3,000 Housing Incentive Units. The Agency shall require the owner/developer seeking Housing Incentive Units to enter into a development or participation agreement and may only authorize and approve Housing Incentive Units provided that:

- No parcel shall be developed at a residential density which exceeds by more than thirty per cent (30%) the density limitations for that parcel as set forth in Section 505.
- Housing Incentive Units shall not be granted in the Very High designation.
- The units within the proposed development have adequate floor area, living spaces and amenities which are appropriate for the unit size and type of the proposed development. For example, a development proposal to provide housing for households with children shall provide recreational areas and open space appropriate for children;
- The development contributes to a desirable residential environment and the long-term neighborhood improvement; and

- The development conforms to the objectives of the special district and/or the Design for Development, if applicable. The Agency may limit the number of Housing Incentive Units to be granted in and area.

505.4 Commercial Uses Within Residential Areas

In order to provide neighborhood commercial services, provide for pedestrian activity, upgrade residential neighborhoods, preserve an historic and/or architecturally significant structure, and/or provide tourist facilities, certain commercial uses may be permitted in residential areas. Such commercial uses shall be permitted only by the execution of a participation or development agreement with the Agency. The Agency shall take particular care in the review of proposed uses involving the sale and/or service of alcoholic beverages to ensure that the uses meet the objectives of this section.

The Agency may permit new commercial uses including commercially related parking uses, in residentially designated areas in any of the following circumstances:

- The commercial use is to be located within and primarily serve a new residential building. Such commercial uses shall be appropriate in terms of need based on development population characteristics, proximity to similar uses and shall be limited to convenience shops such as laundry/dry cleaners, pharmacies, and other related and appropriately scaled neighborhood oriented uses.
- Commercial uses or home occupations in residential building such as professional offices for accountants, architects, and lawyers that are operated by the occupant of the dwelling unit; that have no more than four (4) workers; and that are not an on-site retail sales use.
- The commercial use is on the ground floor of a residential building fronting on a major street or boulevard such as Western Avenue or La Brea Avenue.
- The new commercial use is a hotel, bed and breakfast or other tourist guest facility.
- The parcel(s) are adjacent to areas designated for commercial use and support commercial uses in commercially designated areas. This section provides for the expansion of a commercial development into a residential area if no street or alley separates the commercial land use designation from the residential land use designation.

Conditions for approving commercial uses in residential designations shall include the following: (1) the commercial uses shall contribute to the achievement of the goals of

this Plan, the improvement of the area and the objectives of a special district and/or Design for Development, if applicable; (2) the commercial uses shall be reviewed and found to be compatible with the neighborhood with respect to environmental impact on the residential area such as noise, traffic, architectural and/or historic resources, parking and hours of operation; (3) the architecture, landscaping, lighting, signage and setbacks of the new commercial development shall contribute to the improvement of the residential neighborhood. The commercial development shall meet all design and location criteria specified by the Agency.

506. Commercial Uses

Areas designated on the Map as Commercial shall be maintained, developed and used for Community, Highway Oriented, Neighborhood and Office, or Regional Center Commercial uses as defined in Sections 506.1 and 506.2 of this Plan. Residential uses may be permitted in Commercial areas pursuant to Section 506.3 of this Plan.

As used in this Plan the phrase "Floor Area Ratio" or F.A.R. is defined as the ratio of total floor area of all buildings in a parcel to the parcel area. The floor area of a building excludes space devoted to stairwells, elevator shafts, light courts vehicular parking and mechanical equipment.

The revitalization and development of attractive residential neighborhoods is dependent upon the availability of providing essential neighborhood commercial services such as food markets, and pharmacies. The attraction, retention and expansion of these commercial services shall be an integral part of redevelopment efforts in Hollywood.

There are several types of commercial uses which have traditionally been associated with Hollywood and contribute to the unique character of the area. These uses include restaurants, theaters, bookstores and technical entertainment related business uses. To the extent feasible the Agency shall make special efforts to retain within Hollywood those businesses that have traditionally been associated with Hollywood and are assets to the community. These efforts may include technical or financial assistance and discretionary land use actions as provided for and consistent with this Plan. The Agency will make attempts to retain such businesses at or near their present locations.

506.1 Community, Highway Oriented, and Neighborhood and Office Commercial

Community, Highway Oriented and Neighborhood and Office Commercial Uses shall generally provide neighborhood oriented goods and services, shall not exceed an F.A.R. of 3:1, and shall conform to the following criteria as determined by the Agency:

1) Promote community revitalization;

2) Conform with the goals and objectives of the Plan; and

3) Be compatible with the adjacent residential uses and neighborhood.

4) Include, but not be limited to, neighborhood oriented uses such as; professional offices, institutional uses, food markets, laundries, dry cleaners, pharmacies and other neighborhood retail or service businesses.

5) Limited ancillary manufacturing or assembly is permitted when goods produced are sold at retail on premises and not more than five (5) persons are engaged in non-retail activities.

To provide and ensure quality residential neighborhoods the Agency may, for commercial areas which are adjacent to residential areas, adopt Design(s) for Development which; determine circulation patterns, parking locations, landscaping, height, bulk of buildings and other design guidelines.

506.2 Regional Center Commercial

Regional Center Commercial uses shall generally provide goods and services which are designed in a manner that appeals to a regional market as well as to local markets and includes uses such as theaters, restaurants, hotels, offices, and retail or service businesses.

Two special districts shall be designated with the Regional Center Commercial designation. These districts are the Hollywood Boulevard District and the Hollywood Core Transition District. As indicated on the Special Districts Map (Exhibit A.3), parcels on the north side of Hollywood Boulevard between Vista Del Mar and Gower Streets, and on the east side of Argyle Avenue north of Carlos Street and south of Yucca Street are within both special districts. Development on these parcels shall meet the requirements of the two districts.

506.2.1 Hollywood Boulevard District

Hollywood Boulevard and adjacent properties as illustrated on the Redevelopment Plan Map shall be designated as the Hollywood Boulevard District. The objectives of the District are to:

1) Encourage preservation, restoration and appropriate reuse of historically or architecturally significant structures;

2) Assure that new development is sympathetic to and complements the existing scale of development;

3) Provide pedestrian oriented retail uses along the street level;

4) Encourage entertainment, theater and tourist related uses;

5) Provide adequate parking for new and existing uses; and

6) Reinforce and enhance the existing pedestrian environment.

An urban design plan including design guidelines and criteria and a parking and circulation program to achieve these objectives shall be developed by the Agency within five (5) years following the adoption of the First Amendment to this Plan. These guidelines may be adopted as one or more Design(s) for Development. All new development in the District shall meet the design guidelines to ensure that the objectives of the District are achieved. The Design(s) for Development may include a reduction of density by up to 33% in certain areas to insure that the objectives of the District are met.

506.2.2 Hollywood Core Transition District

Properties designated on the Redevelopment Plan Map as "Hollywood Core Transition District" shall be given special consideration due to the low density of the adjacent residential areas. The objective of this District is to provide for a transition in the scale and intensity of development between Regional Center Commercial uses and residential neighborhoods.

The Agency shall review all building permits in this District to ensure that circulation patterns, landscaping, parking and the scale of new construction is not detrimental to the adjacent residential neighborhoods.

Development guidelines shall be prepared for this District to ensure that new development is compatible with adjacent residential areas. These design guidelines shall be developed by the Agency within five (5) years following the adoption of the First Amendment to this Plan. These guidelines may be adopted as one or more “Design(s) for Development”.

506.2.3 Regional Center Commercial Density

Development within the Regional Center Commercial designation shall not exceed the equivalent of an average floor area ratio (F.A.R.) of 4.5:1 for the entire area so designated.

It is the intent of this Plan, however, to focus development within the Regional Center Commercial designation, as hereinafter set forth, in order to provide for economic development and guidance in the orderly development of a high quality commercial, recreational and residential urban environment with an emphasis on entertainment oriented uses. Therefore, development within the Regional Center Commercial designation shall be focused on areas served by adequate transportation facilities and transportation demand management programs. Further it shall reinforce the historical development patterns of the area, stimulate appropriate residential housing and provide transitions compatible with adjacent lower density residential neighborhoods.

Proposed development in excess of 4.5:1 F.A.R. up to but not to exceed 6:1 F.A.R. or such other density may be permitted by future amendments to the Community Plan, on a specific site may be permitted as hereinafter set forth provided that the proposed development furthers the goals and intent of this Plan and the Community Plan and meets objective "a" and at least one other of the following objectives:

a) to concentrate high intensity and/or density development in areas with reasonable proximity or direct access to high capacity transportation facilities or which effectively utilize transportation demand management programs;

b) to provide for new development which compliments the existing buildings in areas having architecturally and/or historically significant structures or to encourage appropriate development in areas that do not have architecturally and/or historically significant buildings.

c) to provide focal points of entertainment, tourist or pedestrian oriented uses in order to create a quality urban environment; and

d) to encourage the development of appropriately designed housing to provide a balance in the community.

e) to provide for substantial, well designed, public open space in the Project Area.

f) to provide social services or facilities for social services which address the community's needs.

The Agency may permit development in excess of 4.5:1 F.A.R. up to but not to exceed 6:1 F.A.R. or such other density as may be permitted by future amendments to the Community Plan, only if the Agency makes the following findings and determinations:

1. The proposed development conforms with the provisions and goals of the Redevelopment Plan and any applicable Design(s) for Development or requirements of the Hollywood Boulevard District or Hollywood Core Transition District.

2. Permitting the proposed development serves a public purpose objective such as: the provision of additional open space, cultural facilities, public parking, or the rehabilitation of an architecturally or historically significant building.

3. Any adverse environmental effects especially impacts upon the transportation and circulation system of the area caused by proposed development shall be mitigated or are overridden by other social, economic or physical considerations, and statements of findings are made.

No development in excess of 4.5:1 shall be permitted without a binding written agreement with the Agency which ensures that the proposed development will occur in conformity to the Redevelopment Plan and this Section by providing for, among other things, Agency review and approval of all plans and specifications, the compliance with all conditions applicable to development in excess of a 4.5:1 site F.A.R. and the provision of adequate assurances and considerations for the purpose of effectuating the objectives of this Plan.

The Agency shall request from the Planning Commission a determination as to the conformity of the proposed development with the Community Plan. The Planning Commission shall make its determination of conformity within thirty (30) days from the date of the Agency's request. A proposed development shall be deemed in conformance with the Community Plan if the Planning Commission fails to render a determination within thirty (30) days. A determination by the Planning Commission may be appealed to the City Council if such appeal is made within fifteen (15) days of the Planning Commission's determination.

The Agency shall monitor all new development in excess of 50,000 square feet within the Regional Center Commercial designation and make annual reports to the Planning Commission and the City's Department of Transportation on the average floor area ratio,

P.M. peak hour trips generated and off-street parking supply and an assessment of transportation demand management programs within the Regional Center Commercial designation. The Agency will ensure that the average floor area ratio within this designation does not exceed an F.A.R. of 4.5:1. Sites designated on the Redevelopment Plan Map as Public shall not be included in the averaging of the floor area ratio. This shall be done, from time to time, to the extent necessary, by creating an overall balance between new developments which exceed a 4.5:1 site F.A.R. and areas or activities which do not reach a 4.5:1 site F.A.R. such as open spaces or public facilities created or rehabilitated after adoption of the Redevelopment Plan; new developments or redevelopment activities (including historic preservation or rehabilitation) which are below 4.5:1; or any other means the Agency deems appropriate which will maintain the designation's average F.A.R. at or below 4.5:1. When the average F.A.R. for the designation reaches a ratio of 2.0:1 the Agency, within 90 days will submit to the Planning Commission, the City Council, and the Department of Transportation a report analyzing the cumulative impact of Core area development upon the transportation and circulation system in the area, including P.M. peak hour trips generated; further the Agency shall submit to the City Planning Commission and to the City Council a program establishing and identifying specific methods and mechanisms of Agency action to acquire open space or otherwise restrict or decrease density in order to maintain an overall 4.5:1 F.A.R.

506.3 Residential Uses Within Commercial Areas

New and rehabilitated residential uses shall be encouraged within the Regional Center Commercial land use designation. Subject to Agency approval of a development or participation agreement(s), the Agency may permit the development of new residential uses within commercial areas. The conditions for approving such a development shall include a determination that the residential development, as well as any commercial development in the case of a mixed use development, meets all design and location criteria specified by the Agency to ensure that the goals of this Plan are met and that amenities are provided which are appropriate to the size and type of housing units proposed.

506.4 Industrial Uses Within Commercial Designations

Two goals of this Plan are to preserve and increase employment, business and investment opportunities and to support and promote the entertainment industry in Hollywood. In order to achieve these goals development and expansion of individual uses may be permitted

within commercial designations subject to the execution of a development or participation agreement and the following conditions:

1. Environmental impacts of the proposed development including circulation pattern, noise and air quality are compatible with a commercial development.

2. The site plan, architecture and landscaping for the proposed development contributes to the revitalization of the area.

3. Uses of a commercial nature within the proposed development shall be to the extent practical, oriented toward the primary commercial street frontage of the property.

507. Industrial

Areas designated on the Map as Industrial shall be developed, maintained and used for Commercial Manufacturing and Limited Industrial uses as indicated. Such uses shall be of a low noise and non-noxious nature, conform with the goals and objectives of the Plan and promote community revitalization. Entertainment related service and production uses shall be encouraged in these areas. New industrial development in areas adjacent to or across the street from residential areas shall be designed in a manner that is not detrimental to the residential areas with respect to circulation, scale, massing and noise.

In order to promote quality residential neighborhoods, plans for industrial uses to be developed adjacent to or across the street from residential areas shall be reviewed and approved by the Agency to ensure that the new developments are not detrimental to the residential area. The Agency shall review circulation, scale, massing and architectural and landscape programs for the new development.

507.1 Commercial Manufacturing

The intent of the Commercial Manufacturing designation is to provide for industrial expansion. The Agency may, through the adoption of a design for development, limit new commercial uses in the Commercial Manufacturing designation. Commercial Manufacturing uses include, but are not limited to uses such as television, radio, video and motion picture related production uses, office, retail, electronic assembly, jewelry manufacturing, baking, parking structures and other related and compatible uses. Commercial Manufacturing uses shall also include Community Commercial uses.

507.2 Limited Industrial

Limited Industrial uses include, but are not limited to uses such as: television, video, radio, and motion picture production, machine and woodworking shops, electronic instrument and electrical appliance manufacturing, pharmaceuticals manufacturing, and other related and compatible uses.

507.3 Commercial Uses Within Limited Industrial Areas

Subject to Agency approval of a development or participation agreement the Agency may, but is not required to, permit the development of commercial uses within Limited Industrial Areas. The commercial uses shall conform to the following criteria and determined by the Agency:

1) Promote community revitalization.
2) Conform to the goal and objectives of the Plan.
3) Be compatible with and appropriate for the industrial uses in the area.
4) Meet design and location criteria required by the Agency.

508. Public and Quasi-Public Uses Throughout the Project Area

508.1 Public

Areas shown on the Redevelopment Plan Map (Exhibit A.1) as Public shall be used for public facilities, including school sites, public services, open space and recreation areas.

The Agency may, at the request of the public body owning the a site, and after public hearing, redesignate the site for a use other than Public provided that:

1) After a review of the environmental effects of the proposed use and the proposed development concept, the Agency finds that the change in use is consistent with the goals of the Redevelopment Plan;
2) The change in use is compatible with the land use designations for the adjacent areas; and
3) In a situation where open space and/or recreation areas are the current use, the open space and/or recreation areas use will be replaced within a reasonable time period.
5) The change in use shall be subject to all required City approvals and shall conform to the Community Plan as it may be amended from time to time.
6)

508.2 Public Street Layout, Rights of Way and Easements

The public rights-of-way and principal streets proposed for the Project Area are illustrated on the Redevelopment Plan Map.

Such streets and rights-of-way may be widened, altered, abandoned, vacated, or closed as necessary for proper development of the Project. Additional public streets, alleys and easements may be created in the Project Area as needed for proper development and circulation.

Any proposal vacating, modifying or creating streets shall be submitted to the Agency for consultation prior to final action by the City. The public rights-of-way shall be used for vehicular and/or pedestrian traffic as well as for public improvements, public and private utilities, and activities typically found in public rights-of-way. In addition, all necessary easements for public uses, public facilities, and public utilities may be retained or created.

Hollywood contains many properties developed prior to the adoption of modern traffic safety standards. Properties have multiple curb-cuts which have been developed through the past decades. Many of these are underutilized and/or abandoned. As property is redeveloped and as public improvements are constructed, the number and the location of curb-cuts shall be examined with the objective of reducing the number of curb cuts and improving the environment in Hollywood.

508.3 Other Public and Quasi-Public Uses

In order to meet the social needs of the Project Area, throughout the Project Area the Agency is authorized to permit the establishment, alteration or enlargement of public, semi-public, institutional, or non-profit uses, including uses providing social services such as child or elderly care centers, shelters for runaways and minors, park and recreational facilities, libraries, hospitals, educational, fraternal, employee, philanthropic and religious and charitable institutions, and facilities of other similar associations or organizations. The Agency may impose restrictions upon such uses as are necessary to further the goals of the Plan and protect the development and the use of the Project Area. The Agency shall give special consideration to participating in such projects with qualified non-profit organizations which have a special understanding of the needs and concerns of the community.

508.4 Open Spaces, Landscaping, Light, Air and Privacy

An objective of the Plan is to provide large usable publicly accessible open spaces which are an organic part of the urban environment. In order to achieve this objective the

Agency may require, as part of a participation or development agreement, participation in the provision of parks and open spaces. It is recognized that the Project Area lacks adequate open space, recreational areas and landscaping. Throughout the Redevelopment process, in review of specific development proposals and in adopting Designs for Development, the need for additional publicly accessible open space and landscaping, including street trees shall be recognized and encouraged.

509. Non-Conforming Uses

A non-conforming use is the use of a building or land which does not conform to this Plan and which existed at the time the Plan became effective. A non-conforming use may continue.

The Agency may authorize additions, alterations, repairs or other improvements to such non-conforming uses in the Project Area if, in the determination of the Agency, such improvements would be compatible with surroundings and proposed uses and development.

The Agency may require the owner of such property to enter into a Participation Agreement and agree to the imposition of such reasonable restrictions as are necessary to meet the objective of the Plan.

510. New Construction

All construction and development shall conform to all applicable state laws and city ordinances and regulations and shall be subject to review and approval by regulatory governmental bodies as required by law and this Plan.

511. Preservation, Rehabilitation and Retention of Properties

It is recognized that the Hollywood Project Area contains numerous buildings and groups of buildings with architectural and historical significance examples of which include the Hollywood Boulevard Commercial and Entertainment Historic District, Crossroads of the World and the U.S. Post Office which are listed in the National Register of Historic Places. It is further recognized that these buildings represent an important resource and a link to Hollywood's past. These can provide the basis for the revitalization of the Hollywood Project Area.

Buildings listed as Cultural-Historic Monuments by the City and listed in, determined or appear to be eligible for listing in the National Register of Historic Places are determined to be of architectural and/or historic significance. The Agency shall use established criteria for determining additional architectural and/or historical resources and shall maintain a

publicly available list of all buildings within the Project Area which it determines to be architecturally and/or historically significant.

To the extent practical, in the implementation of this Plan, including Sections 505.3 (Housing Incentive Units) and 506.2.3 (Regional Center Commercial Density), the Agency is authorized to provide for the retention, reuse and restoration of buildings and resources determined by the Agency to be architecturally or historically significant. The Agency shall deny requests for housing incentive units, development in the Regional Center Commercial designation above an F.A.R. of 4.5:1 and variations for sites on which a structure determined by the Agency to be significant was demolished after the adoption of this Plan or is proposed to be demolished; however, under exceptional circumstances where a significant structure has been substantially damaged and must be demolished due to circumstances beyond the control of the owner, the Agency may grant requests for housing incentive units, development within the Regional Center Commercial designation above an F.A.R. of 4.5:1 and variations. Nothing in Section 511 shall deny, modify or affect in any way housing density bonuses granted by the city pursuant to applicable state law.

In order to provide incentives to preserve architecturally and/or historically significant structures, the unused density from architecturally and/or historically significant structures may be transferred to other development sites. The Agency shall promulgate procedures for such transfer proposals consistent with the procedures and requirements as established in Section 506.2.3, Regional Center Commercial Density, the procedures and requirements of Section 505.3, Housing Incentive Units, for housing developments and the procedures of Section 521, Variations.

The Agency shall obtain adequate assurances that the buildings from which the density transfer is taken are preserved and that the development on the site to which the density is transferred will occur in conformity to the Redevelopment Plan, the objectives of special districts as established by the Plan and if applicable, any adopted Design for Development.

No grading, foundation, demolition, building or any other kind of permit shall be issued by the City for any property within the Redevelopment Project Area which involves or is determined by the Agency to adversely affect any building or resource determined by the Agency to be architecturally or historically significant, unless and until the following procedures occurs:

Upon notice to the City of such determination by the Agency, the issuance of any such permit shall be delayed for a reasonable period of time requested by the Agency, not to exceed one hundred and eighty (180) days, to permit negotiations to occur and opportunities to be explored by all parties concerned to seek to avoid or mitigate any adverse impact on any such architecturally or historically significant building or resource.

If the Agency determines that arrangements for the preservation of the building or resource cannot be accomplished within the original 180 day period and further determines that such arrangements are likely to be satisfactorily completed within an additional period not to exceed one hundred and eighty (180) days, then the Agency may extend the initial 180 day delay period, up to a maximum extension of an additional 180 days.

No application for any grading, foundation, demolition, building or any other kind of permit filed with the City shall be considered to conform with this Redevelopment Plan unless and until the requirements of this Section are satisfied.

The Agency shall coordinate the implementation of this section with the efforts of the Cultural Heritage Commission of the City.

The Agency shall develop historic preservation incentives in coordination with the City. Such incentives may include technical assistance and funding programs.

512. Cultural and Artistic Development

The primary impetus for Hollywood's residential, commercial and industrial growth in the early part of this century was provided by the presence of the motion picture industry. Hollywood's history is inextricably connected with its role as the capital of cinematic and broadcasting arts. Likewise, the continued and renewed vitality these arts forms (and their allied disciplines) generate will directly impact future growth.

Therefore, it shall be the policy of this Redevelopment Plan to incorporate cultural expression as a redevelopment tool through the support and development of publicly accessible cultural and artistic facilities and/or programs within the Project Area. At least one percent (1%) of the private development costs, excluding land and off-site improvements, for new industrial, commercial and residential development, excluding low and moderate income housing development, which the Agency has facilitated, and is subject to a participation or development agreement shall be allocated by the participant or developer to finance the provision of cultural and artistic facilities, features, and programs within the Project Area. Such developer or participants

will be required to submit for Agency approval proposed projects utilizing the funds allocated pursuant to this section. The Agency may adopt guidelines for the use and allocation of the funds generated by private development.

513. Limitation on the Number of Buildings

The number of buildings in the Project Area shall not exceed approximately 5,500.

514. Limitation on the Number of Dwelling Units

At such time as the Project Area is fully redeveloped, approximately 25,000 dwelling units will be permitted within the Project Area.

515. Limitation on Type, Size and Height of Buildings

Except as may be set forth in other Sections of this Plan or as described in Designs for Development adopted pursuant to this Plan, the type, size, and heights of buildings shall be as limited by the applicable Federal, State, and local statutes, ordinances and regulations.

516. Signs and Billboards

All signs must conform to City sign and billboard standards as they now exist or are hereafter legislated. It is recognized that the coordination of signs and billboards within the project area affect its appearance and image. Therefore, it is the intent of this Plan that the Agency may, after public hearing, adopt additional sign and billboard standards for a portion of or the entire Project Area which may be more restrictive than City standards in order to further the goals of this Plan or the objectives of a special district as established by this Plan.

517. Utilities

The Agency may require that all utilities be placed underground whenever physically and economically feasible as determined by the Agency.

518. Circulation, Parking and Loading Facilities

518.1 Circulation

The Agency in cooperation with City Departments, and within five (5) years following the adoption of the First Amendment to this Plan, shall prepare for City Council consideration an ordinance establishing a transportation program. The ordinance shall include but not be limited to the following:

1. A transportation improvement and management plan creating an integrated program of transportation mitigation measures such as traffic flow management, demand

management programs, street widenings, public transit and private transit, including their associated operating costs.

2. A commitment of public and private funding sources to implement the transportation improvement and management plan. This shall recognize that the transportation system in Hollywood services regional and local needs.

3. Procedures to require mitigation of the transportation impacts of new developments within the Hollywood Redevelopment area which are expected to have a significant transportation impact.

4. A program including a comprehensive study to establish trip generation rates which reflect the unique travel conditions in Hollywood.

5. A program including a comprehensive study to establish parking requirements for new development of the various kinds of land use within the Hollywood Redevelopment Project Area.

In order to meet the circulation goal of the Redevelopment Plan the Agency may adopt Designs for Development which require that new developments implement circulation mitigation measures commensurate with the impact the new development will have on the circulation system. The Agency may also adopt Designs for Development which provide for a more efficient use of the existing circulation system through the use of Travel Demand Management Programs such as van pooling, ridesharing and bus subsidy programs.

Five circulation corridors within the Project Area have been identified which need improvement. These corridors are:

1) North-south travel between and including La Brea and Highland Avenues.

2) East-west travel within the Franklin Avenue corridor in the northern portion of the Project area.

3) East-west travel on Sunset Boulevard, Fountain Avenue and Santa Monica Boulevards.

4) North-south travel between Cahuenga Boulevard and Gower Street.

5) North-south travel on Western Avenue.

The Agency shall work with the City of Los Angeles to improve traffic flow in these corridors. The Agency shall cooperate with the City in the identification and

implementation of transportation related development requirements. In all developments expected to have significant circulation impacts, the Agency shall cause these traffic related impacts to be analyzed in the traffic study. The Agency shall impose appropriate requirements as a condition of approval of each such development based upon the traffic mitigation measures identified in the traffic study.

518.2 Parking and Loading

It is recognized that many parts of the Project Area lack adequate parking and that solutions to parking problems are essential to the redevelopment of Hollywood. Therefore, it is the intent of this Plan to encourage creative solutions to parking such as; the shared use of parking areas, flexible parking programs, public parking structures and standards to ensure that parking is available for the project area.

Parking spaces, parking facilities and loading areas shall be designed to promote public safety and to prevent an unsightly or barren appearance. Lighting shall be provided to promote public safety. Lighting for parking spaces shall be shielded from adjacent residential properties and adjoining residential streets.

In order to address the critical shortage of parking the Plan provides the Agency the following authority to facilitate the provision of replacement parking:

1. Acquisition and development of parking in conjunction with the City.
2. Acquisition and development of public parking.
3. Requirements as part of a development or participation agreement to provide public parking.
4. The granting of additional density to developers in exchange for the provision of public parking.

An urban design plan for Hollywood Boulevard will be prepared pursuant to Section 506.2.1 of this Plan. This Plan will include a strategy to address the long-term parking needs of Hollywood Boulevard. Pursuant to Section 506.2.3 of this Plan the Agency shall monitor the off-street parking supply within the Regional Center Commercial Designation.

As part of the Agency's negotiations with developers within the Regional Center Commercial designation it will seek to incorporate as a part of the development replacement parking.

Whenever parking spaces which are in active use within the Regional Center Commercial Designation are removed from the market through Agency action as a part of the Project, the Agency shall develop or construct, or cause to be developed or constructed, an equal number of replacement parking spaces within the Project and within reasonable proximity to users subject to the findings and provisions of the Ordinance prepared pursuant to Section 518.1 of this Plan, as it may be adopted by the City Council. The Agency shall use its best effort to expeditiously provide such replacement parking, and in any event will do so within four years of its' removal.

519. Setbacks

Parking for new developments shall not be permitted in the required residential front yards.

Setback areas not used for access, or, when permitted parking, shall be landscaped and maintained by the owner unless otherwise specified in a Participation or Development Agreement. The Agency may adopt Design(s) for Development which establish setback and landscape requirements for new developments within the Project Area.

520. Incompatible Uses

No new use or structure which be reason of appearance, traffic, smoke, noise, odor, or similar factors that would be incompatible with the surrounding areas or structures shall be permitted in any part of the Project Area.

521. Variations

Variation may be authorized in any of the land use designations established by this Plan except the Regional Center Commercial.

Under exceptional circumstances, the Agency is authorized to permit a variation form the limits, restrictions and controls established by this Plan including variations in permitted density or use. In order to permit such variation, the Agency must determine that:

1) The application of certain provisions of the Plan would result in practical difficulties or unnecessary hardships inconsistent with the general purpose and intent of the Plan.

2) There are exceptional circumstances or conditions applicable to the property or to the intended development of the property which do not apply generally to other properties having the same standards, restrictions, and controls.

3) Permitting a variation will not be materially detrimental to the public welfare or injurious to property or improvements in the area.

4) Permitting a variation will not be contrary to the objectives of this Plan.

5) Permitting a variation will be in conformance with the objectives of the Community Plan.

In permitting any such variation, the Agency shall impose such conditions as are necessary to protect the public health, safety, or welfare, and to assure compliance with the purpose of this Plan.

Any variation to the densities permitted in this Plan, in excess of 15% of the F.A.R. permitted by this Plan or for a building in excess of 250,000 square feet, whichever is less, shall be approved by the Planning Commission, subject to appeal to the City Council.

VI. 600. METHODS OF FINANCING THE PROJECT

601. General Description of the Proposed Financing Method

The Agency is authorized to finance this Project with financial assistance from the City, State of California, Federal Government, tax increment funds, interest income, Agency bonds, donations, loans from private financial institutions, the lease or sale of Agency-owned property, or any other available source, public or private.

The Agency is also authorized to obtain advances, borrow funds and create indebtedness in carrying out this Plan. The principal and interest on such advances, funds, and indebtedness may be paid from tax increments or any other funds available to the Agency.

The City or any other public agency may expend money to assist the Agency in carrying out this Project. As available, gas tax funds from the State and County may be used for street improvements and public transit facilities. All or a portion of the parking may be installed through a parking authority or other public or private entities.

Tax increment financing, as authorized by Section 602 of this Plan, is intended as a source of financing in combination with other sources of financing that may be available for specific project activities.

602. Tax Increment Funds

All taxes levied upon taxable property within the Project Area each year, by or for the benefit of the State of California, the County of Los Angeles, the City of Los Angeles, any

district or any other public corporation (hereinafter sometimes called "taxing agencies") after the effective date of the ordinance approving this Plan, shall be divided as follows:

1) That portion of the taxes which would be produced by the rate upon which the tax is levied each year by or for each of said taxing agencies upon the total sum of the assessed value of the taxable property in the Project Area as shown upon the assessment roll used in connection with the taxation of such property by such taxing agency, last equalized prior to the effective date of such ordinance, shall be allocated to and when collected shall be paid into the funds of the respective taxing agencies as taxes by or for said taxing agencies on all other property are paid (for the purpose of allocating taxes levied by or for any taxing agency or agencies which did not include the territory of the Project Area on the effective date of such ordinance but to which such territory is annexed or otherwise included after such effective date, the assessment roll of the County of Los Angeles last equalized on the effective date of said ordinance shall be used in determining the assessed valuation on the taxable property in the Project Area on said effective date).

2) That portion of said levied taxes each year in excess of such amount shall be allocated to and when collected shall be paid into a special fund of the Agency to pay the principal of and interest on bonds, loans, moneys advanced to, or indebtedness (whether funded**,** refunded, assumed or otherwise) incurred by the Agency to finance or refinance, in whole or in part, this Project. Unless and until the total assessed valuation of the taxable property in the Project Area exceeds the total assessed value of the taxable property in the Project Area as shown by the last equalized assessment roll referred to in subdivision (1) hereof, all of the taxes levied and collected upon the taxable property in the Project Area shall be paid into the funds of the respective taxing agencies. When said bonds, loans, advances and indebtedness, if any, and interest thereon, have been paid, all moneys thereafter received from taxes upon the taxable property in the Project Area shall be paid into the funds of the respective taxing agencies as taxes on all other property are paid.

3) That portion of tax revenues allocated to the Agency pursuant to paragraph (2) above which are attributable to the rate of tax imposed for the benefit of any affected taxing agency which levy occurs after the tax year in which the ordinance adopting this Plan becomes effective, shall be allocated to such affected taxing agency to the extent that the affected taxing agency has elected in the manner required by law to receive such allocation.

The portion of taxes mentioned in subdivision (2) above are hereby irrevocably pledged for the payment of the principal of and interest on the advance of moneys, or making of loans, or the incurring of any indebtedness (whether funded, refunded, assumed or otherwise) by the Agency to finance or refinance the Project, in whole or in part.

The Agency is authorized to make such pledges as to specific advances, loans and indebtedness as appropriate in carrying out the project.

Taxes shall be allocated and paid to the Agency consistent with the provisions of this Plan only to pay the principal of and interest on loans, money advances to, or indebtedness (whether funded, refunded, assumed, or otherwise) incurred by the Agency to finance or refinance, in whole or in part, the Project.

The number of dollars of taxes which may be divided and allocated to the Agency pursuant to California Health and Safety Code Section 33670 pursuant to this Plan for the Project Area shall not exceed $922,452,207 except by amendment of this Plan.

No loan, advance, or indebtedness to be repaid from such allocations of taxes from the Project Area established or incurred by the Agency to finance in whole or in part the Project shall be established or incurred after thirty (30) years following the date of adoption of the ordinance approving and adopting this Plan. Such loan, advance or indebtedness may be repaid over a period of time longer than such time limit. Such time limitation may be extended only by amendment of this Redevelopment Plan.

The amount of bonded indebtedness, to be repaid in whole or in part from such allocation of taxes from the Project Area, which can be outstanding at one time shall not exceed $307,484,000 in principal amount without an amendment of this Plan.

603. Other Loans and Grants

Any other loans, grants, guarantees, or financial assistance from the United States, the State of California, or any other public or private source will be utilized if available as appropriate in carrying out the Project.

VII. 700. ACTIONS BY THE CITY

The City shall aid and cooperate with the Agency in carrying out this Plan and shall take all actions necessary to ensure the continued fulfillment of the purposes of this Plan and to

prevent the recurrence or spread in the area of conditions causing blight. Actions by the City shall include, but not be limited to, the following:

1) Institution and completion of proceedings for opening, closing, vacating, widening, or changing the grades of streets, alleys, and other public rights-of-way, and for other necessary modifications of the streets, the street layout, and other public rights-of-way in the Project Area. Such action by the City shall include the requirement of abandonment, removal and relocation by the public utility companies of their operations of public rights-of-way as appropriate to carry out this Plan, provided that nothing in this Plan shall be construed to require the cost of such abandonment, removal, and relocation be borne by others than those legally required to bear such cost.

2) Institution and completion of proceedings necessary for changes and improvements in private and publicly owned public utilities within or affecting the Project Area.

3) Revision of zoning (if necessary) within the Project Area to permit the land uses and development authorized by this Plan.

4) Imposition, wherever necessary (by conditional use permits or other means) of appropriate controls within the limits of this Plan upon parcels in the Project Area to ensure their proper development and use.

5) Provision for administrative enforcement of this Plan by the City after development.

6) Performance of the above actions, and of all other functions and services relating to public health, safety, and physical development normally rendered in accordance with a schedule which will permit the redevelopment of the Project Area to be commenced and carried to completion without unnecessary delays.

7) The approval of subdivision maps and parcel maps by the Advisory Agency or otherwise as provided by law, as necessary to carry out the Project.

8) The undertaking and completing of any other proceedings necessary to carry out the Project.

The foregoing actions to be taken by the City do not involve or constitute any commitment for financial outlays by the City.

VIII. 800. NON-DISCRIMINATION AND NON-SEGREGATION

There shall be no discrimination or segregation based upon race, color, religion, creed, sex, sexual orientation, marital status, national origin or ancestry permitted in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of property in the Project Area.

IX. 900. EMPLOYEES AND TRAINEES FROM THE COMMUNITY

Contractors and others engaged in construction and rehabilitation activities in the Project Area shall be encouraged to hire and train the maximum number of employees and trainees from the community consistent with the objectives of the Plan.

X. 1000. ADMINISTRATION AND ENFORCEMENT OF THE PLAN

The administration and enforcement of the Plan, including the preparation and execution of any documents implementing this Plan, shall be performed by the Agency and/or the City.

The provisions of this Plan or other documents entered into pursuant to this Plan may also be enforced by court litigation instituted by either the Agency or the City. Such remedies may include, but are not limited to, specific performance, damages, re-entry, injunctions, or any other remedies appropriate to the purposes of this Plan. In addition, any recorded provisions which are expressly for the benefit of owners of property in the Project Area may be enforced by such owners.

XI. 1100. DURATION OF THIS PLAN'S DEVELOPMENT CONTROLS

Except for the non-discrimination and non-segregation provisions which shall run in perpetuity, the provisions of this Plan shall be effective, and the provisions of other documents formulated pursuant to this Plan may be made effective, for 30 years from the effective date of adoption of this Plan by the City Council; provided, however, that the Agency may issue bonds and incur obligations pursuant to the Plan which extend beyond the termination date, and in such event, this Plan shall continue in effect until the date of retirement or repayment of such bonds or other obligations.

XII. 1200. COUNCIL IMPLEMENTATION

The City Council, in adopting this Redevelopment Plan, specifically reserves unto itself the right to develop and approve additional programs by ordinance for this Project Area to insure implementation of this Plan is in conformance with the intent, policies, and goals of this Plan.

XIII. 1300. PROCEDURE FOR AMENDMENT

This Plan may be amended by means of the procedure established in Sections 33450-33458 of the Community Redevelopment Law, or by any other procedure hereafter established by law.

ADMINISTRATIVE RESPONSIBILITIES

Applicant must have all permits reviewed for conformance to provisions of the Redevelopment Plan; appointments for review and environmental clearance may be made by calling the LACRA at 213-977-1784. Permit applications may also be presented for review at the LACRA offices at 354 South Spring Street, 7th floor reception desk, for assignment to appropriate reviewer.

Applicant may appeal permit denials to the LACRA Board of Commissioners at their regular meetings, which are publicly noticed.

Depending on the nature of the project for which a permit or variance is being sought, Applicant may be required by the provisions of the Plan to negotiate a participation or development agreement with LACRA.

Staff of LACRA will perform permit review and environmental clearance, and will approve permits, or work with applicant to ensure that permit activity will conform to the provision of the Redevelopment Plan and any applicable Design for Development.

The Board of Commissioners may hear and act upon appeals from Applicants of permit review determinations.

Development projects will be reviewed by LACRA staff, and will be brought before the applicable review committee of the Hollywood Citizens Advisory Committee for advisory recommendation to LACRA.

The Board of Commissioners will approve applicable participation and development agreements, and development projects within the Redevelopment Project area.

City Planning Commission.

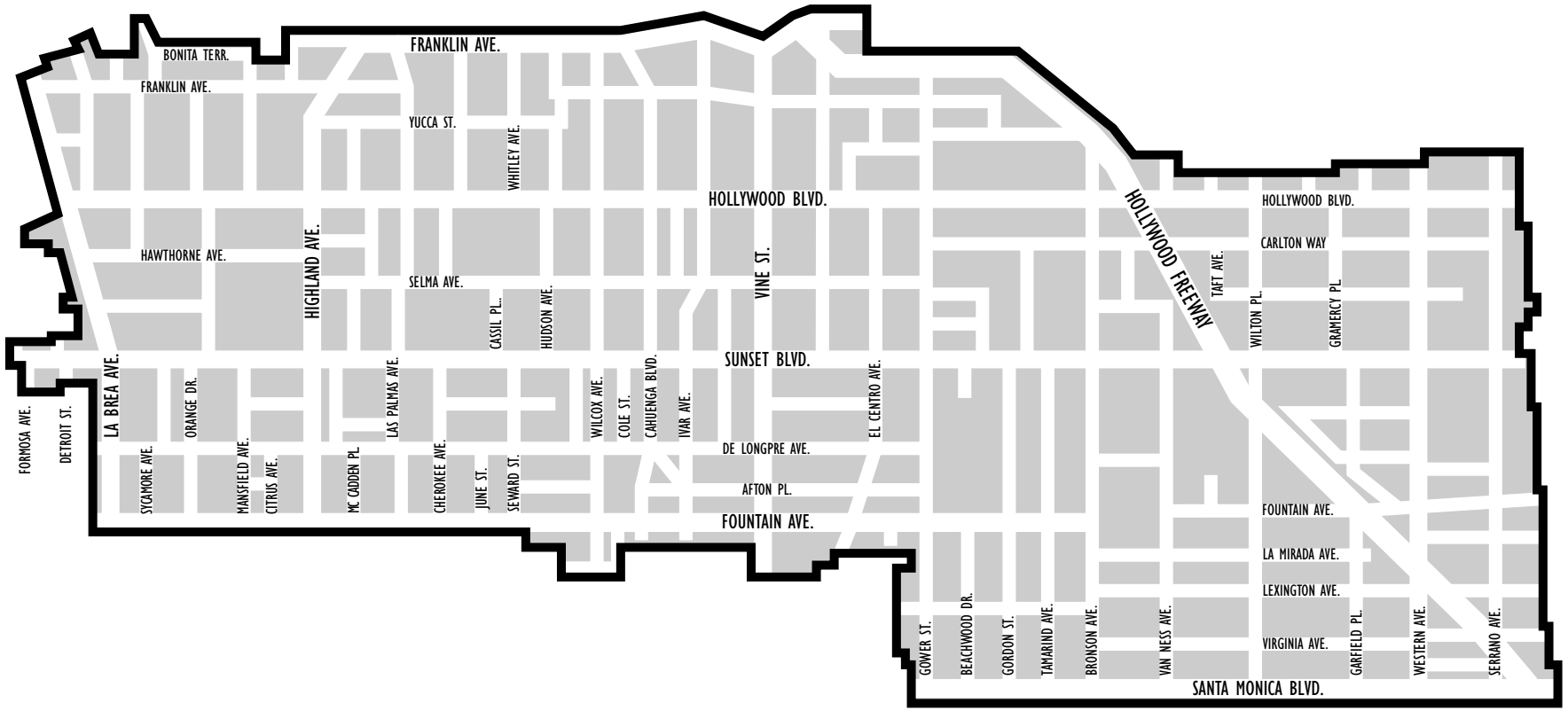
The Planning Commission will review and make recommendation, within 90 days of receipt, on all designs for development and the urban design plan for the Hollywood Boulevard District. In the absence of a recommendation within 90 days, LACRA may proceed to act upon the matter.

The Planning Commission will make determinations of conformity to Community Plan for all development in Regional Center Commercial use areas which are in excess of 4.5:1 F.A.R. with 30 days of the date of such LACRA request for determination. This determination may be appealed to the City Council if the appeal is made within 15 days of the Planning Commission determination.

The Planning Commission shall approve all variations to Plan densities which are in excess of 15% of F.A.R. permitted by the Plan or for a building in excess of 250,000 square feet, whichever is less. The approval by the Planning Commission is subject to appeal to the City Council.

Hollywood

CRA/LA

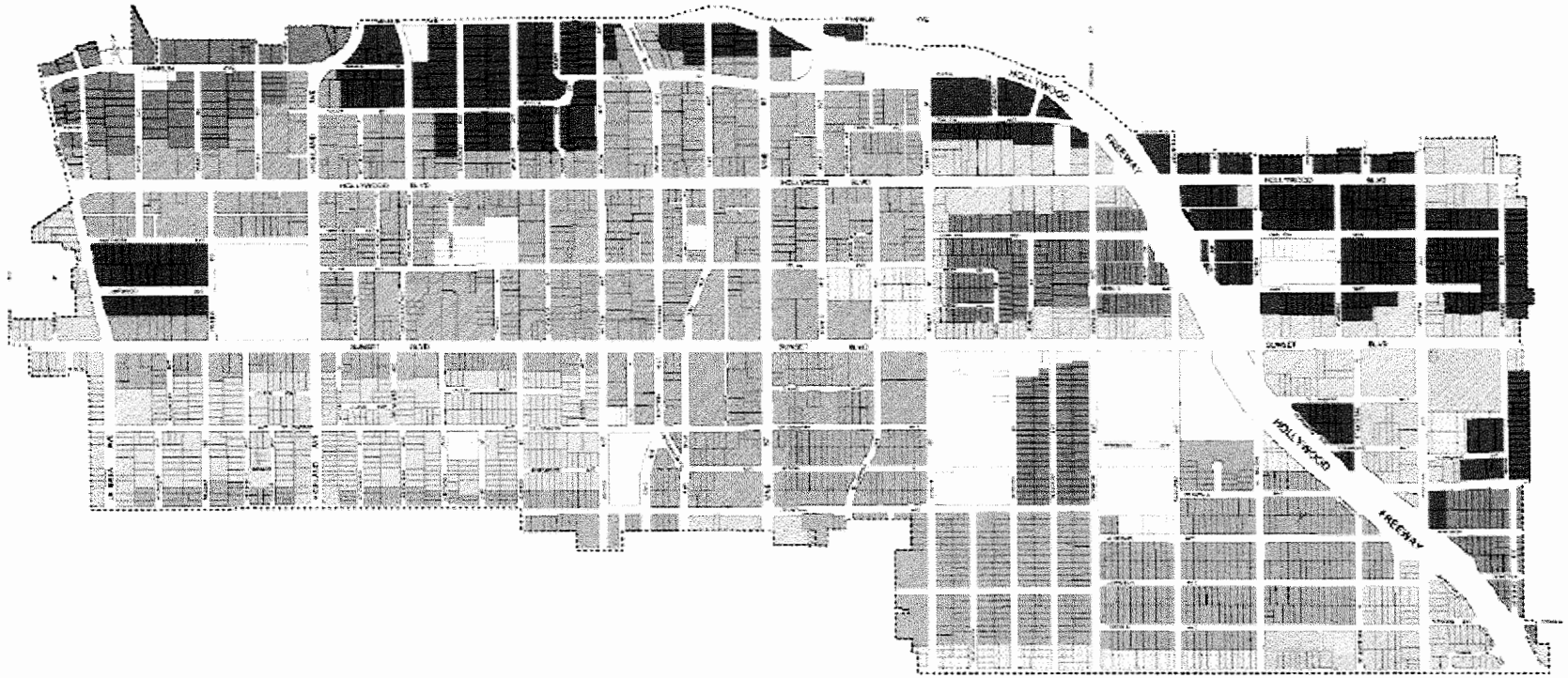


Hollywood Redevelopment Project

CRA/LA
Community Redevelopment Agency
City of Los Angeles

Redevelopment Plan Map

Amended Exhibit "A-1"



Legend

Public

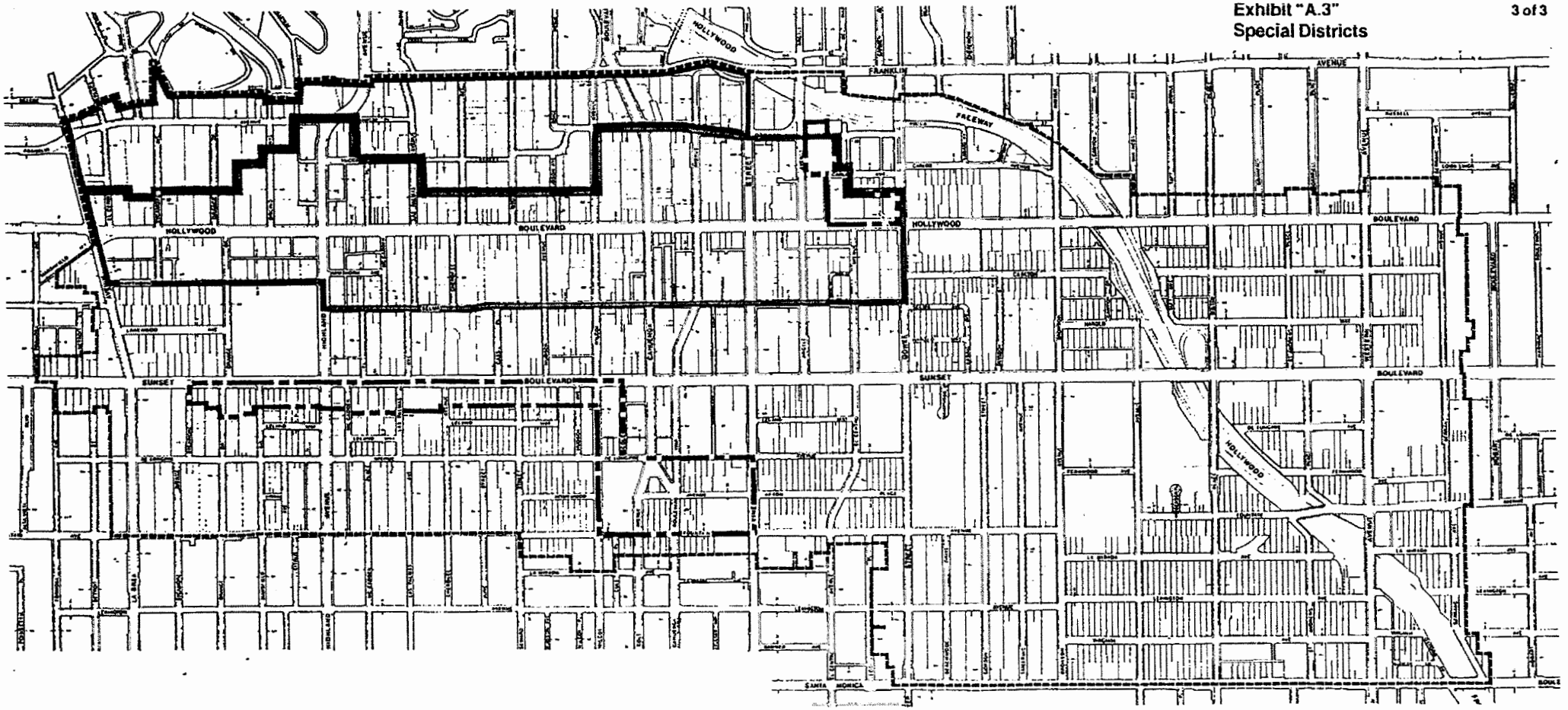
Residential

Commercial

Industrial

Note

Exhibit "A.3"
Special Districts



Hollywood Boulevard District

Hollywood Core Transition District

Franklin Ave. Design District

Project Area Boundary

Proposed Hollywood Redevelopment Project

Community Redevelopment Agency
City of Los Angeles

December 1985

EXHIBIT B

LEGAL DESCRIPTION

HOLLYWOOD PROJECT AREA

A parcel of land in the City of Los Angeles, County of Los Angeles, State of California, described as a whole as follows:

Beginning at the intersection of the easterly line of Plummer Street, 60 feet wide (now known as La Brea Avenue), with the northerly line of Fountain Avenue, 30 feet wide, as said streets are shown on the map of Hollywood Square, recorded in Book 9, Pages 77 of Maps, in the office of the County Recorder of said County, said intersection being also the southwesterly corner of Lot 12 of said Hollywood Square; thence easterly along the southerly line of said Lot 12 and the easterly prolongation thereof, 183.35 feet to an intersection with the northerly prolongation of the easterly line of Lots 12 through 1 of Tract No. 3596, in said County and State, as per map recorded in Book 34; Page 94 of Maps, in said office of the County Recorder, said last mentioned easterly line being also a boundary line of the City of Los Angeles; thence southerly along said last mentioned easterly line, 30.00 feet to the new centerline of Fountain Avenue, as shown on Los Angeles City Engineer's Field Book 21708, Page 18; thence easterly along said new centerline of Fountain Avenue, 675.54 feet to the beginning of a tangent curve, concave northerly and having a radius of 1030.00 feet, as said curve is shown on Los Angeles City Engineer's Field Book 21708, Page 17; thence easterly along said curve, through a central angle of 04°40'27", an arc distance of 84.03 feet; thence continuing easterly along said centerline of Fountain Avenue, tangent to said last mentioned curve, 100.00 feet to the beginning of a tangent curve, concave southerly

and having a radius of 1030.00 feet, as said last mentioned curve is shown on Los Angeles City Engineer's Field Book 21708, Page 16; thence easterly along said last mentioned curve, through a central angle of 04°40'35", an arc distance of 84.07 feet; thence continuing easterly along said centerline of Fountain Avenue, tangent to said last mentioned curve, 496.36 feet to an intersection with the centerline of Highland Avenue, 100 feet wide, as said intersection is shown on Los Angeles City Engineer's Field Book 21708. Page 14 and on Field Book 17101, Page 46; thence continuing easterly along said centerline of Fountain Avenue, 1643.99 feet to an intersection with the centerline of Seward Street, 55 feet wide, as shown on Los Angeles City Engineer's Field Book 16031. Page 6, said last mentioned intersection also being shown on the map of Tract No. 2762, recorded in Book 30, Page 81 of Maps, in said office of the County Recorder; thence southerly along said centerline of Seward Street, 188.47 feet to the westerly prolongation of the southerly line of Lots 1 through 6 and Lots A and B of Tract No. 3539, as shown on map recorded in Book 38, Page 36 of Maps, in said office of the County Recorder; thence easterly along said last mentioned westerly prolongation and along said southerly line, 441.49 feet to the southeasterly corner of said Lot B, being also the northeasterly corner of Lot C of said Tract No. 3539; thence southerly along the easterly line of said Lot C and along the southerly prolongation thereof, 159.00 feet to an intersection with the centerline of La Mirada Avenue, 50 feet wide, as shown on the map of Tract No. 10401, recorded in Book 153, Pages 1 and 2 of Maps, in said office of the County Recorder; thence easterly along said last mentioned centerline, 371.42 feet to an intersection with the centerline of Cole Place, 50 feet wide, formerly known as Wilcox Avenue, 50 feet wide, as shown on the map of said Tract No. 10401; thence northerly along said centerline of Cole Place, 159.00 feet to an intersection with the westerly prolongation of the southerly line of Lots 1 through 9 of Tract No. 3541, as shown on map recorded in Book 41, Page 43 of Maps in said office of the County Recorder; thence easterly along said last mentioned westerly

prolongation and along said southerly line, 485.00 feet to the southeasterly corner of said Lot 9, being also a point on the westerly prolongation of the southerly line of Lots 25 through 30 of Tract No. 3499, as shown on map recorded in Book 41, Page 61 of Maps, in said office of the County Recorder; thence easterly along said last mentioned westerly prolongation and along said southerly line, 355.34 feet to the southeasterly corner of said Lot 30, being also a point on the westerly line of Lot 3 of Tract No. 8647, as shown on map recorded in Book 108, Page 96 of Maps, in said office of the County Recorder; thence southerly along said last mentioned westerly line, 2.89 feet to the southwesterly corner of said Lot 3; thence easterly along the southerly line of Lots 3, 2 and 1 of said Tract No. 8647, and along the easterly prolongation thereof, a distance of 330.00 feet to an intersection with the centerline of Vine Street, 80 feet wide, as shown on the map of said last mentioned Tract; thence southerly along said last mentioned centerline, 155.14 feet to an intersection with the centerline of La Mirada Avenue, of variable width, formerly known as Schuyler Avenue, 50 feet wide, as shown on the map of Tract No. 1210, recorded in Book 23, Pages 134 and 135 of Maps, in said office of the County Recorder; thence easterly along said last mentioned centerline, 335.00 feet to an intersection with the southerly prolongation of the westerly line of Lot 19 of Block "G" of said Tract No. 1210; thence northerly along said last mentioned southerly prolongation and along said westerly line, 160.00 feet to the northwesterly corner of said Lot 19; thence easterly along the northerly line of said Lot 19, a distance of 50.00 feet to the northeasterly corner thereof; thence southerly along the easterly line of said Lot 19 and along the southerly prolongation thereof, 160.00 feet to an intersection with said last mentioned centerline of La Mirada Avenue; thence easterly along said last mentioned centerline, 100.00 feet to the southerly prolongation of the easterly line of Lot 21 of said Block "G" of Tract No. 1210; thence northerly along said last mentioned southerly prolongation and along said easterly line, 160.00 feet to the northeasterly corner of said Lot 21, being also the

southwesterly corner of Lot 3 of said Block "G" of Tract No. 1210; thence easterly along the southerly line of Lots 3, 2 and 1 of said Block "G" and along the easterly prolongation thereof, 175.19 feet to an intersection with the centerline of El Centro Avenue, 60 feet wide, as shown on the map of said Tract No. 1210; thence northerly along said last mentioned centerline, 80.00 feet to an intersection with the westerly prolongation of the southerly line of Lots 1 and 12 of Block "F" of said Tract No. 1210; thence easterly along said last mentioned westerly prolongation, along said southerly line and along the easterly prolongation thereof, 495.01 feet to the northwesterly corner of Lot 11 of Block "E" of said Tract No. 1210; thence southerly along the westerly line of Lots 11 through 7 of said Block "E" of Tract No. 1210, a distance of 251.40 feet to the southwesterly corner of said Lot 7, being also the southeasterly corner of Lot 6 of said Block "E"; thence westerly along the southerly line of said Lot 6 and along the westerly prolongation thereof, 165.00 feet to an intersection with the centerline of Lodi Place, 60 feet wide, as shown on the map of said Tract No. 1210; thence southerly along said last mentioned centerline, 470.00 feet to an intersection with the westerly prolongation of a line that is parallel with the southerly line of Lot 3 of Block "B" of Tract No. 1842, as shown on map recorded in Book 22, Page 200 of Maps, in said office of the County Recorder, said parallel line lying 40 feet northerly of said last mentioned southerly line measured along the westerly line of said Lot 3 from the southwesterly corner of said Lot 3; thence easterly along last mentioned parallel line, 90 feet; thence southerly, parallel with said westerly line of Lot 3, a distance of 10 feet; thence easterly, parallel with said southerly line of said Lot 3, a distance of 14.83 feet to a point on the easterly line of said Lot 3, being also the northwesterly corner of the southerly 30 feet of the westerly 35.15 feet of Lot 2 of said Block "B" of Tract No. 1842; thence easterly along the northerly line of said last mentioned southerly 30 feet, a distance of 35.15 feet to the easterly line of said last mentioned westerly 35.15 feet; thence southerly along said last mentioned easterly

line, 30 feet to the southerly line of said Lot 2; thence westerly along the southerly line of Lots 2 and 3 of said Block "B" of Tract No. 1842 and along the westerly prolongation thereof, a distance of 139.98 feet to an intersection with the centerline of Lodi Place, 60 feet wide, as shown on the map of said Tract No. 1842; thence southerly along said last mentioned centerline, 200.00 feet to an intersection with the westerly prolongation of the southerly line of Lot 7 of said Block "B" of Tract No. 1842; thence easterly along said last mentioned westerly prolongation and along said southerly line, 164.80 feet to the southeasterly corner of said Lot 7, being also the northwesterly corner of Lot 17 of said Block "B" of Tract No. 1842; thence southerly along the westerly line of Lots 17, 16 and D of said Block "B", 114.96 feet to the southwesterly corner of said Lot D; thence easterly along the southerly line of said Lot D, 45.00 feet to the northwesterly corner of Lot 14 of said Block "B" of Tract No. 1842; thence southerly along the westerly line of said Lot 14 and along the southerly prolongation thereof, a distance of 165.00 feet to an intersection with the centerline of Santa Monica Boulevard, 80 feet wide, as shown on the map of said Tract No. 1842; thence easterly along said last mentioned centerline, 120.00 feet to an intersection with the centerline of Gower Street, 60 feet wide, as shown on the map of said Tract No. 1842, said last mentioned intersection also being shown on Los Angeles City Engineer's Field Book 13938, Page 19; thence easterly along said centerline of Santa Monica Boulevard, 1315.61 feet to an intersection with the centerline of Bronson Avenue, 80 feet wide, as shown on Los Angeles City Engineer's Field Book 13938, Page 20; thence continuing easterly along said centerline of Santa Monica Boulevard, 2646.97 feet to an intersection with the centerline of Western Avenue, 80 feet wide, as shown on Los Angeles City Engineer's Field Book 13938, Page 22 and on Field Book 16029, Page 44; thence continuing easterly along said centerline of Santa Monica Boulevard, 724.08 feet to an intersection with the centerline of Serrano Avenue, 60 feet wide, as shown on Los Angeles City Engineer's Field Book 16029, Page 45; thence

continuing easterly along said centerline of Santa Monica Boulevard, 280.00 feet to an intersection with the southerly prolongation of the easterly line of Lot 20 of Block "H" of the North Park Tract, as shown on map recorded in Book 5, Page 58 of Maps, in said office of the County Recorder; thence northerly along said last mentioned southerly prolongation and along said easterly line, 240.00 feet to the northeasterly corner of said Lot 20; thence westerly along the northerly line of Lots 20 and 21 of said Block "H" of the North Park Tract, 100.00 feet to the northwesterly corner of said Lot 21, being also the southeasterly corner of Lot 3 of said Block "H"; thence northerly along the easterly line of said Lot 3 and along the northerly prolongation thereof, 180.00 feet to an intersection with the centerline of Virginia Avenue, 60 feet wide, formerly known as Monticello Avenue, as shown on the map of said North Park Tract; thence westerly along said last mentioned centerline, 100.00 feet to an intersection with the southerly prolongation of the easterly line of Lots 24 and 1 of Block "F" of said North Park Tract; thence northerly along said last mentioned southerly prolongation, along said easterly line and along the northerly prolongation thereof, 390.00 feet to the southwesterly corner of Lot 23 of Block "D" of said North Park Tract; thence easterly along the southerly line of said Lot 23, a distance of 2.00 feet to the westerly line of the easterly 48 feet of said Lot 23; thence northerly along said last mentioned westerly line, 150.00 feet to the northerly line of said Lot 23; thence westerly along said last mentioned northerly line, 2.00 feet to the northwesterly corner of said Lot 23, being also the southeasterly corner of Lot 1 of said Block "D" of the North Park Tract; thence northerly along the easterly line of said Lot 1 and along the northerly prolongation thereof, 573.73 feet to an intersection with the centerline of Fountain Avenue, of variable width, formerly known as Benefit Street, as shown on the map of Mortimer's Gateway Tract, recorded in Book 9, Page 53 of Maps, in said office of the County Recorder, said last mentioned centerline lying 30 feet southerly, measured at right angles, from the southerly line of Lot 59 of said last mentioned Tract; thence

easterly along said centerline of Fountain Avenue, 77.10 feet to an intersection with the southerly prolongation of the easterly line of that certain Alley, 15 feet wide, adjoining said last mentioned Lot 59 on the East, as shown on the map of said Mortimer's Gateway Tract, said last mentioned Alley also being shown on Los Angeles City Engineer's Field Book 16029, Page 28; thence northerly along said last mentioned southerly prolongation, along said easterly line and along the northerly prolongation thereof, 908.36 feet to an intersection with that certain Alley, 10 feet wide, adjoining Lot 43 of said Mortimer's Gateway Tract on the North, as shown on the map of said last mentioned Tract; said last mentioned Alley also being shown on Los Angeles City Engineer's Field Book 16029, Page 34; thence westerly along said northerly line of said certain Alley, 10 feet wide, a distance of 67.50 feet to the southerly prolongation of the easterly line of Lot 2 of said Mortimer's Gateway Tract; thence northerly along said last mentioned southerly prolongation, along said easterly line and along the northerly prolongation thereof, 220.00 feet to an intersection with the centerline of Sunset Boulevard, 100 feet wide, as shown on the map of said Mortimer's Gateway Tract; thence westerly along said last mentioned centerline, 13.96 feet to the southerly prolongation of the easterly line of the westerly 7.66 feet of Lot 12 of Tract No. 3469, as shown on map recorded in Book 38, Page 13 of Maps, in said office of the County Recorder; thence northerly along said last mentioned southerly prolongation and along said easterly line, 200.00 feet to the northerly line of said Lot 12, being also the southerly line of Lot 9 of said Tract No. 3469; thence easterly along said last mentioned southerly line, 55.00 feet to the southeasterly corner of said Lot 9; thence northerly along the easterly line of Lots 9 and 8 of said Tract No. 3469, a distance of 111.63 feet to the northeasterly corner of said Lot 8, being also the southwesterly corner of Lot 19 of said Tract No. 3469; thence easterly along the southerly line of said Lot 19, a distance of 50.00 feet to the westerly line of the easterly 150 feet of said Lot 19; thence northerly along said last mentioned westerly line and along the

westerly line of the easterly 150 feet of Lots 20 and 21 of said Tract No. 3469, a distance of 125.00 feet to the northerly line of the southerly 25 feet of said Lot 21; thence westerly along said last mentioned northerly line, 50.00 feet to the easterly line of Lot 5 of said Tract No. 3469; thence northerly along said last mentioned easterly line and along the easterly line of Lots 4 through 1 of said Tract No. 3469, a distance of 225.00 feet to the northeasterly corner of said Lot 1; thence westerly along the northerly line of said Lot 1, a distance of 0.16 foot to the southeasterly corner of Lot 17 of the Ferry Tract, as shown on map recorded in Book 7, Page 197 of Maps, in said office of the County Recorder; thence northerly along the easterly line of Lots 17 through 23 of said Ferry Tract, 505.00 feet to the southerly line of the northerly 115 feet of the easterly 75 feet of said Lot 23; thence westerly along said last mentioned southerly line, 75.00 feet to the westerly line of said last mentioned easterly 75 feet; thence northerly along said last mentioned westerly line and along the northerly prolongation thereof, 155.00 feet to an intersection with the centerline of Hollywood Boulevard, 80 feet wide, formerly known as Prospect Avenue, as shown on the map of said Ferry Tract; thence easterly along said last mentioned centerline, 21.80 feet to an intersection with the southerly prolongation of the easterly line of Lot 3 of Wakeman Place, as shown on map recorded in Book 6, Page 117 of Maps, in said office of the County Recorder; thence northerly along said last mentioned southerly prolongation and along said easterly line, 255.00 feet to the northeasterly corner of said Lot 3; thence westerly along the northerly line of Lots 3 and 4 of said Wakeman Place and along the westerly prolongation thereof, 180.00 feet to an intersection with the centerline of Serrano Avenue, 60 feet wide, as shown on the map of said Wakeman Place; thence northerly along said last mentioned centerline, 74.78 feet to an intersection with the easterly prolongation of the northerly line of Lot 8 of the Schultz Tract, as shown on map recorded in Book 20, Page 183 of Maps, in said office of the County Recorder; thence westerly along said last mentioned easterly prolongation and

along said northerly line, 300.96 feet to the northwesterly corner of said Lot 8, being also a point on the southerly prolongation of the easterly line of Lot 1 of Tract No. 2566, as shown on map recorded in Book 26, Page 3 of Maps, in said office of the County Recorder; thence northerly along said last mentioned southerly prolongation, 0.22 foot to the southeasterly corner of said Lot 1; thence westerly along the southerly line of said Lot 1 and along the westerly prolongation thereof, 320.90 feet to an intersection with the centerline of Western Avenue, 80 feet wide, as shown on the map of said Tract No. 2566; thence southerly along said last mentioned centerline, 115.00 feet to an intersection with the easterly prolongation of the northerly line of Lot 52 of Grider and Hamilton's Garfield Place, as shown on map recorded in Book 5, Page 190 of Maps, in said office of the County Recorder; thence westerly along said last mentioned easterly prolongation and along said northerly line, 210.00 feet to the northwesterly corner of said Lot 52; thence southerly along the westerly line of said Lot 52, a distance of 20.00 feet to the northeasterly corner of Lot 25 of said Grider and Hamilton's Garfield Place; thence westerly along the northerly line of said Lot 25 and along the westerly prolongation thereof, 227.85 feet to an intersection with the centerline of Garfield Place, 75.70 feet wide, as shown on the map of said Grider and Hamilton's Garfield Place; thence northerly along said last mentioned centerline, 50.00 feet to an intersection with the easterly prolongation of the northerly line of Lot 3 of said Grider and Hamilton's Garfield Place; thence westerly along said last mentioned easterly prolongation and along said northerly line, 227.85 feet to the northwesterly corner of said Lot 3; thence southerly along the westerly line of said Lot 3, a distance of 50 feet to the southwesterly corner thereof, being also the northeasterly corner of Lot 1 of Morgan's Hollywood Tract, as shown on map recorded in Book 6, Page 109 of Maps, in said office of the County Recorder; thence westerly along the northerly line of Lots 1, 2 and 3 of said Morgan's Hollywood Tract and along the westerly prolongation thereof, 657.06 feet to an intersection with the centerline of Wilton

Place, 60 feet wide, formerly known as Lemona Avenue, as shown on the map of Tract No. 1647, recorded in Book 20, Page 56 of Maps, in said office of the County Recorder; thence northerly along said last mentioned centerline, 14.08 feet to an intersection with the easterly prolongation of the southerly line of the northerly 1.25 feet of Lot 2 of said Tract No. 1647; thence westerly along said last mentioned easterly prolongation and along said southerly line, 165.00 feet to the westerly line of said Lot 2; thence northerly along said last mentioned westerly line, 1.25 feet to the northwesterly corner of said Lot 2, being also the northeasterly corner of Lot 21 of said Tract No. 1647; thence westerly along the northerly line of said Lot 21 and along the westerly prolongation thereof, 490.05 feet to an intersection with the centerline of Van Ness Avenue, 55 feet wide, as shown on the map of Tract No. 3255, recorded in Book 35, Page 68 of Maps, in said office of the County Recorder, said last mentioned centerline lying 30 feet easterly, measured at right angles, from the easterly line of Lots 10 through 14 of said last mentioned Tract; thence northerly along said centerline of Van Ness Avenue, 174.36 feet to an intersection with the centerline of Canyon Drive, 42 feet wide, as said intersection is shown on Los Angeles City Engineer's Field Book 13941, Page 73; thence westerly along said centerline of Canyon Drive, 42 feet wide, and along the westerly prolongation thereof, 330.20 feet to an intersection with the southerly prolongation of the centerline of Canyon Drive, 60 feet wide, as shown on the map of said Tract No. 3255, said last mentioned intersection being shown on Los Angeles City Engineer's Field Book 13941, Page 71; thence along the prolongation of said centerline of Canyon Drive, 60 feet wide, to an intersection with the southeasterly prolongation of that certain course in Parcel 1 of the Deed from the State of California to Ralph J. and Marilyn E. Phillips, recorded July 12, 1956, in Book 51720, Page 177 of Official Records of said County, described as "South 49°53'31" East 165.04 feet"; thence northwesterly along said last mentioned southeasterly prolongation and along said certain course to the northwesterly terminus thereof, being a point in the

westerly line of Lot 5 of Tract No. 3091, as shown on map recorded in Book 32, Page 1 of Maps, in said office of the County Recorder, distant southerly thereon 6.@5 feet from the northwesterly corner of said Lot 5, said last mentioned point being also the southeasterly corner of the land described in the Deed from the State of California to the City of Los Angeles, recorded December 20, 1957, in Book 56288, Page 117 of Official Records of said County; thence northwesterly along the southwesterly line of said last mentioned Deed, 177.17 feet to the southwesterly corner thereof, being a point in the westerly line of Lot 2 of said Tract No. 3091, distant southerly thereon 7.05 feet from the northwesterly corner of said Lot 2; thence along said last mentioned westerly line to an intersection with the southeasterly prolongation of that certain course in the Deed from the State of California to William N. Goldy and Marion Frank, recorded October 19, 1956, in Book 52637, Page 69 of Official Records of said County, described as "South 55°37'48" East 20.47 feet"; thence northwesterly along said last mentioned southeasterly prolongation and along said certain course to the northwesterly terminus thereof; thence continuing northwesterly along said last mentioned Deed, 118.41 feet to the most westerly corner of said Deed, being a point on the northerly line of the southerly 30 feet of Lot 3 of Tract No. 2448, as shown on map recorded in Book 23, Page 79 of Maps, in said office of the County Recorder, distant westerly 134.83 feet, measured along said last mentioned northerly line, from the easterly line of said Lot 3; thence westerly along said last mentioned northerly line, 1.43 feet to a point distant easterly 55 feet, measured along said last mentioned northerly line, from the westerly line of said Lot 3, said point being the most easterly corner of Parcel 1 in the Deed to the State of California, recorded February 16, 1954, in Book 35590, Page 336 of Official Records of said County; thence northwesterly along the northeasterly line of said last mentioned Deed, 60.10 feet to the most northerly corner of said Deed, being a point in the westerly line of Lot 2 of said Tract No. 2448, distant northerly 30 feet, measured along said last mentioned westerly line

and along the westerly line of Lot 3 of said last mentioned Tract, from the southerly line of the northerly 20 feet of said last mentioned Lot 3; thence northerly along said westerly line of Lot 2 of said Tract No. 2448, a distance of 31.74 feet to an intersection with that certain course in Parcel 5 of the Relinquishment of Highway Right-of-Way to the City of Los Angeles, recorded October 8, 1963, in Book D2210, Page 842 of Official Records of said County, described as "South 89°46'20" West 310.26 feet", said last mentioned certain course being parallel with and 46 feet southerly, measured at right angles, from the southerly line of Lot 42 of Tract No. 2058, as shown on map recorded in Book 21, Page 157 of Maps, in said office of the County Recorder; thence westerly along said last mentioned certain course to an intersection with the southeasterly prolongation of that certain course in the Deed to the State of California, recorded August 2, 1974, in Book D6368, Page 282 of Official Records of said County described as "North 69°22'48" West 79.42 feet", the southeasterly terminus of said last mentioned certain course being a point in the westerly line of Tamarind Avenue, 50 feet wide, formerly known as Tamarind Street, as shown on the map of said Tract No. 2058, lying southerly 385.11 feet, measured along said Tamarind Avenue, from the northeasterly corner of Lot 2 of said Tract No. 2058; thence northwesterly along said last mentioned southeasterly prolongation and along said certain course to the northwesterly terminus thereof; thence continuing in a general northwesterly direction along the various courses in the northeasterly line of said last mentioned Deed, 53.93 feet, 44.42 feet, 137.73 feet, 102.12 feet, 48.25 feet and 58.73 feet; thence continuing northwesterly along the northwesterly prolongation of said last mentioned course to an intersection with the northerly line, or its easterly prolongation, of Parcel 1 of the Relinquishment of Highway Right-of-Way to the City of Los Angeles, recorded October 8, 1963, in Book D2210, Page 842 of Official Records of said County, said last mentioned northerly line being also the northerly line of Lots 10, 11 and 12 of Block 1 of the Hollywood Tropical Park Tract,

as shown on map recorded in Book 3, Page 69 of Maps; thence westerly along said last mentioned northerly line, 305 feet, more or less, to an intersection with the centerline of Gower Street, 50 feet wide, as shown on the map of the Rowena Tract, recorded in Book 10, Page 142 of Maps, in said office of the County Recorder; thence southerly along said last mentioned centerline to an intersection with the easterly prolongation of that certain course in the Deed from the State of California to First Presbyterian Church of Hollywood, recorded February 16, 1953, in Book 40977, Page 413 of Official Records of said County, described as "North 80°23'50" West 105.01 feet"; thence westerly along said last mentioned easterly prolongation and along said certain course to the westerly terminus thereof; thence continuing westerly along the southerly line of said last mentioned Deed, 226.06 feet, 40.11 feet and 25.22 feet, the westerly terminus of said last mentioned course being a point in the westerly line of Lot 14 of the McGinnis Tract, as shown on map recorded in Book 4, Page 78 of Maps, said last mentioned point lying northerly 14.70 feet, measured along said last mentioned westerly line, from the southwesterly corner of said Lot 14; thence continuing westerly along the westerly prolongation of said last mentioned course to an intersection with the centerline of Vista Del Mar Avenue, 50 feet wide, as shown on the map of said McGinnis Tract, said last mentioned centerline lying 25 feet westerly measured at right angles, from the westerly line of said Lot 14; thence northerly along said last mentioned centerline to an intersection with the centerline of Franklin Avenue, 76 feet wide, as shown on Los Angeles City Engineer's Field Book 16030, Page 5; thence westerly along said centerline of Franklin Avenue, 624.44 feet to an intersection with the centerline of Vine Street, 100 feet wide, as said intersection is shown on Los Angeles City Engineer's Field Book 150-185, Page 109, said point of intersection being also on the southeasterly prolongation of a line that is parallel with and 35 feet southwesterly, measured at right angles, from that certain course in Parcel 10 of the Relinquishment of Highway Right-of-Way to the City of Los Angeles,

recorded December 3, 1963, in Book D2275, Page 281 of Official Records of said County, described as "South 72°36'29" East 158.90 feet"; thence northwesterly along said last mentioned southeasterly prolongation and along said parallel line, 223.03 feet to the beginning of a tangent curve, concave southerly and having a radius of 500.00 feet, said last mentioned curve being concentric with that certain curve in said Parcel 10 of the document recorded in Book D2275, Page 281 of Official Records, described as being "concave southerly and having a radius of 535.00 feet"; thence northwesterly westerly and southwesterly along said curve of radius 500.00 feet, through a central angle of 32°07'26", an arc distance of 280.33 feet to a point of tangency in a line that is parallel with and 35 feet southeasterly, measured at right angles, from that certain course in Parcel 9 of said document recorded in Book D2275, Page 281 of Official Records, described as "North 75°17'16" East 165.51 feet"; thence southwesterly along said last mentioned parallel line and along the southwesterly prolongation thereof, 304.42 feet to an intersection with a line that is parallel with and 30 feet northerly, measured at right angles, from the northerly line of the southerly 22 feet of Lot 1 of Block 23 of Hollywood, as shown on map recorded in Book 28, Pages 59 and 60 of Miscellaneous Records, in said office of the County Recorder; thence westerly along said last mentioned parallel line, 331.10 feet to an intersection with the centerline of Cahuenga Boulevard, 94 feet wide, as shown on Los Angeles City Engineer's Field Book 16030, Page 1; thence westerly in a direct line to the intersection of the new centerline of Franklin Avenue, 56 feet wide, with the northerly prolongation of the centerline of Wilcox Avenue southerly, 60 feet wide, as said last mentioned intersection as shown on Los Angeles City Engineer's Field Book 17101, Page 6; thence westerly along said new centerline of Franklin Avenue, 691.51 feet to an intersection with the centerline of Whitley Avenue, 60 feet wide, as shown on Los Angeles City Engineer's Field Book 17101, Page 5; thence southerly along said centerline of Whitley Avenue, 12.00 feet to the centerline of Franklin Avenue westerly, 60 feet wide, said

last mentioned centerline lying 30 feet northerly, measured at right angles, from the northerly line of Block 1 of Hollywood Ocean View Tract, as shown on map recorded in Book 1, Page 62 of Maps, in said office of the County Recorder; thence westerly along said last mentioned centerline, 1249.88 feet to an intersection with the centerline of Highland Avenue, 100 feet wide, as shown on Los Angeles City Engineer's Field Book 17101, Page 3, and as shown on Parcel Map L.A. No. 1591, recorded in Book 19, Page 24 of Parcel Maps, in said office of the County Recorder; thence southerly along said centerline of Highland Avenue, 20.16 feet to the beginning of a tangent curve concave westerly and having a radius of 340 feet, as said last mentioned curve is shown on said Parcel Map L.A. No. 1591; thence southerly along said last mentioned curve to an intersection with the easterly prolongation of the northerly line of Parcels A and B of said Parcel Map L.A. No. 1591; thence westerly along said last mentioned easterly prolongation and along said northerly line to the most westerly corner of said Parcel B, being a point on the easterly line of Tract No. 2403, as shown on map recorded in Book 23, Page 4 of Maps, in said office of the County Recorder, distant southerly 8 feet, measured along said last mentioned easterly line, from the northeasterly corner of said Tract No. 2403; thence northerly along said last mentioned easterly line, 8 feet to said last mentioned northeasterly corner; thence westerly along the northerly line of said Tract No. 2403, a distance of 100.00 feet to the northwesterly corner thereof, being also the northeasterly corner Of Lot 4 of the A.B. Fitch Tract, as shown on map recorded in Book 9, Page 64 of Maps, in said office of the County Recorder; thence southerly along the easterly line of said Lot 4, a distance of 12.50 feet to the northerly line of the southerly 62.5 feet of said Lot 4; thence westerly along said last mentioned northerly line, 213.52 feet to an intersection with the centerline of Hillcrest Road, 40 feet wide, formerly known as Hill Street, as shown on the map of said A.B. Fitch Tract; thence southerly along said centerline of Hillcrest Road, 154.50 feet to an intersection with the easterly prolongation of the northerly line of Lots 1 and 2 of the

Pinehurst Terrace Tract, as shown on map recorded in Book 6, Page 90 of Maps, in said office of the County Recorder; thence westerly along said last mentioned easterly prolongation, along said northerly line and along the westerly prolongation thereof, 232.91 feet to an intersection with the centerline of Orchid Avenue, 40 feet wide, as shown on the map of Tract No. 3581, recorded in Book 44, Page 1 of Maps, in said office of the County Recorder; thence northerly along said last mentioned centerline, 50 feet to an intersection with the easterly prolongation of the northerly line of Lots 1 through 4 of Whitley Hill Tract No. 1, as shown on map recorded in Book 2, Page 71 of Maps, in said office of the County Recorder; thence westerly along said last mentioned easterly prolongation, along said northerly line and along the westerly prolongation thereof 800.24 feet to an intersection with the centerline of Sycamore Avenue, 40 feet wide, as said last mentioned centerline is shown on said map of Tract No. 3581; thence continuing westerly along said last mentioned westerly prolongation to an intersection with the southeasterly prolongation of the northeasterly line of Lot 26 of Tract No. 4820, as shown on map recorded in Book 103, Pages 57 and 58 of Maps, in said office of the County Recorder, said last mentioned northeasterly line shown as having a bearing and distance of "North 27°13'05" West 82.98 feet" on the map of said Tract No. 4820; thence northwesterly along said last mentioned southeasterly prolongation to the most easterly corner of said Lot 26; thence westerly along the southerly line of said Lot 26, a distance of 13.74 feet to the northeasterly corner of Lot 27 of said Tract No. 4820; thence southerly along the easterly line of Lots 27 through 32 of said Tract No. 4820, a distance of 341.15 feet to the southerly line of the northerly 3 feet of said Lot 32; thence westerly along said last mentioned southerly line and along the westerly prolongation thereof, 141.68 feet to an intersection with the centerline of Outpost Drive, 60 feet wide, as shown on said map of Tract No. 4820; thence northerly along said last mentioned centerline, 4.50 feet to an intersection with the northeasterly prolongation of the northwesterly line of Lot 1 of said Tract No. 4820; thence

southwesterly along said last mentioned northeasterly prolongation and along said northwesterly line, 138.40 feet to the most westerly corner of said Lot 1, being also a point in the northeasterly line of Lot 14 of the Hollywood Vista Tract, as shown on map recorded in Book 2, Page 80 of Maps, in said office of the County Recorder; thence northwesterly along the northeasterly line of Lots 14 and 13 of said Hollywood Vista Tract, 93.99 feet to a point distant northwesterly thereon, 43.75 feet from the most easterly corner of said Lot 13; thence southwesterly in a direct line to an intersection with the centerline of El Cerrito Place, 50 feet wide, formerly known as Pine Avenue, as shown on the map of said Hollywood Vista Tract, said last mentioned direct line passing through a point in the southwesterly line of said Lot 13, distant northwesterly 35 feet, measured along said last mentioned southwesterly line, from the most southerly corner of said Lot 13; thence southeasterly along said centerline of El Cerrito Place to an intersection with the northeasterly prolongation of the northwesterly line of "Exhibit A" in the Deed to Edward B. and Frances Frankel, recorded April 27, 1973, as Instrument No. 595 of Official Records of said County, the northeasterly corner of said last mentioned Deed being a point in the northeasterly line of Lot 15 of said Hollywood Vista Tract, distant northwesterly 140 feet, measured along said last mentioned northeasterly line, from the most easterly corner of said Lot 15; thence southwesterly along said northeasterly prolongation of said last mentioned Deed and along the northwesterly line of said Deed to an intersection with a line, the northwesterly terminus of which lies on the northwesterly line of Lot 16 of said Hollywood Vista Tract at a distance of 30.8 feet northeasterly, measured along said last mentioned northwesterly line, from the most westerly corner of said Lot 16, and the southeasterly terminus of which lies on the southeasterly line of said Lot 16 at a distance of 31.77 feet northeasterly, measured along said last mentioned southeasterly line, from the most southerly corner of said Lot 16; thence southeasterly along said line which intersects the northwesterly and southeasterly lines of said Lot 16, to an

intersection with a line that is parallel with and 100 feet northwesterly, measured at right angles, from the southeasterly line of Lots 16 and 17 of said Hollywood Vista Tract; thence southwesterly along said last mentioned parallel line to an intersection with the centerline of La Brea Avenue, 50 feet wide, formerly known as Sutherland Avenue, as shown on the map of said Hollywood Vista Tract; thence southeasterly along said last mentioned centerline 175.03 feet to the new centerline of Franklin Avenue, of variable width, as shown on Los Angeles City Engineer's Field Book 26605, Page 39; thence continuing southeasterly along said centerline of La Brea Avenue, as shown on Los Angeles City Engineer's Field Book 26605, Pages.41, 42 and 43 and on Field Book 16022, Page 76, a distance of 933.97 feet to an intersection with the northeasterly prolongation of the northwesterly line of Marshfield Way, 10 feet wide, as shown on said Los Angeles City Engineer's Field Book 16022, Page 76 and as shown on the map of Parcel Map L.A. No. 2720, recorded in Book 57, Page 89 of Parcel Maps in said office of the County Recorder; thence southwesterly along said last mentioned northeasterly prolongation and along said northwesterly line, 389.59 feet to an intersection with the northerly prolongation of the westerly line of Parcel A of said Parcel Map L.A. No. 2720; thence southerly along said last mentioned northerly prolongation and along said westerly line, 126.49 feet to the most westerly southwest corner of said Parcel A; thence easterly along a southerly line of said Parcel A, 104.05 feet to an angle point in said Parcel A; thence southerly along said Parcel A, a distance of 0.30 foot to the most southerly southwest corner of said Parcel A, being also the northwesterly corner of Parcel B of said Parcel Map L.A. No. 2720; thence easterly along the northerly line of said Parcel B, 52.03 feet to the northeasterly corner of said Parcel B, being a point in the westerly line of Lot 5 of Tract No. 1119, as shown on map recorded in Book 17, Page 105 of Maps, in said office of the County Recorder; thence northerly along said last mentioned westerly line, 1.10 feet to the northerly line of the southerly 150.80 feet of said Lot 5; thence easterly along said last

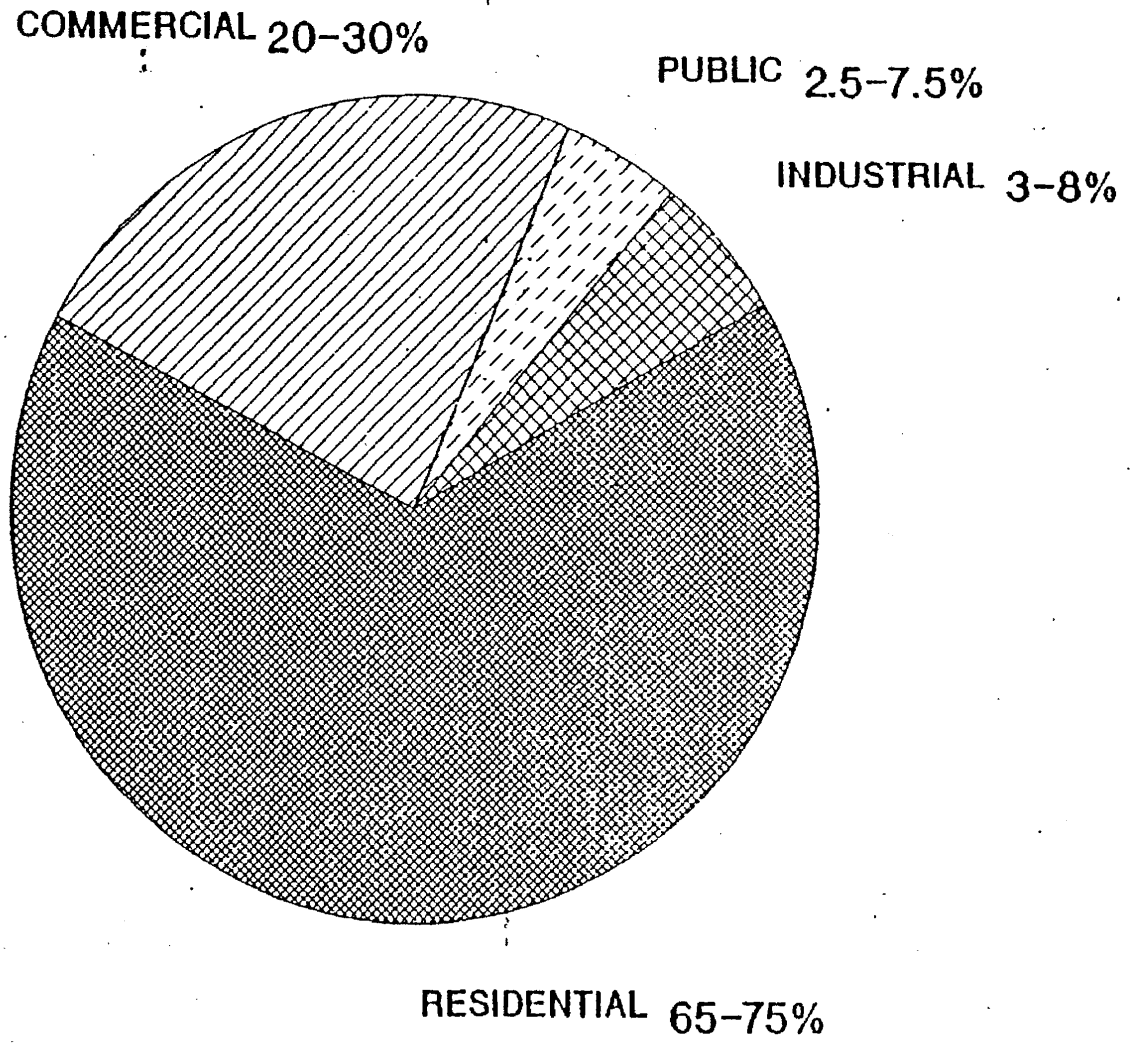
mentioned northerly line and along the easterly prolongation thereof, 89.27 feet to the northwesterly corner of Lot 1 of Tract No. 233, as shown on map recorded in Book 13, Page 188 of Maps, in said office of the County Recorder; thence southerly along the westerly line of said Lot 1, a distance of 50.46 feet to the southwesterly corner of said Lot 1; thence easterly along the southerly line of said Lot 1, a distance of 98.71 feet to the northwesterly corner of Lot 1 of said Tract No. 1119; thence southerly along the westerly line of said last mentioned Lot 1 and along the southerly prolongation thereof, 127.35 feet to an intersection with the centerline of Hawthorn Avenue, 50 feet wide, formerly known as Michigan Avenue, as shown on the map of said Tract No. 1119; thence westerly along said last mentioned centerline, 46.57 feet to an intersection with the northerly prolongation of the westerly line of Lot 17 of the Michigan Tract, as shown on map recorded in Book 8, Page 17 of Maps, in said office of the County Recorder; thence southerly along said last mentioned northerly prolongation and along said westerly line, 195.00 feet to the southwesterly corner of said Lot 17; thence easterly along the southerly line of said Lot 17, a distance of 27.00 feet to the northwesterly corner of Lot 10 of said Michigan Tract; thence southerly along the westerly line of Lots 10, 9 and 8 of said Michigan Tract, 165.00 feet to the southwesterly corner of said Lot 8, being also the northwesterly corner of Lot 2 of Tract No. 2925, as shown on map recorded in Book 29, Pages 28 and 29 of Maps, in said office of the County Recorder; thence southerly along the westerly line of said Lot 2, a distance of 59.96 feet to the southwesterly corner of said Lot 2, being also a point in the northerly line of Lot 5 of said Tract No. 2925; thence westerly along the northerly line of Lots 5, 4 and 3 of said Tract No 2925 and along the westerly prolongation thereof, 165.00 feet to an intersection with the centerline of Detroit Street, 50 feet wide, as shown on the map of said Tract No. 2925; thence southerly along said last mentioned centerline, 25.18 feet to the easterly prolongation of the northerly line of Lots 49 through 54 of said Michigan Tract; thence westerly along said last mentioned

easterly prolongation, along said northerly line and along the westerly prolongation thereof, 365.95 feet to an intersection with the centerline of Formosa Avenue, 50 feet wide, as shown on the map of said Michigan Tract; thence southerly along said last mentioned centerline, 214.37 feet to an intersection with the centerline of Sunset Boulevard, 100 feet wide, as shown on the map of said Michigan Tract; thence easterly along said last mentioned centerline, 139.56 feet to an intersection with the easterly line of that certain Alley, 10.35 feet wide, as shown on the map of the Alta Vista Tract, recorded in Book 12, Page 20 of Maps, in said office of the County Recorder, said last mentioned Alley now being the westerly portion of Formosa Avenue, 44.65 feet wide; thence southerly along said last mentioned easterly line, 242 feet to the southwesterly corner of Parcel 1 of the Deed to Wang's Company, recorded March 1, 1979, as Instrument No. 79-239053 of Official Records of said County; thence easterly along the southerly line of said last mentioned Parcel 1, which southerly line is parallel with the southerly line of Sunset Boulevard, 100 feet wide, as shown on the map of Tract No. 3238, recorded in Book 37, Page 20 of Maps, in said office of the County Recorder, a distance of 168.13 feet to the southeasterly corner of said Parcel 1 of the Deed to Wang's Company, being a point in the westerly line of said Tract No. 3238; thence northerly along said last mentioned westerly line, 4.50 feet to the southwesterly corner of Lot 25 of said Tract No. 3238; thence easterly along the southerly line of said Lot 25 and along the easterly prolongation thereof, 165.00 feet to an intersection with the centerline of Detroit Street, 60 feet wide, as shown on the map of said Tract No. 3238; thence northerly along said last mentioned centerline, 47.50 feet to the westerly prolongation of the northerly line of Lot 24 of said Tract No. 3238; thence easterly along said last mentioned westerly prolongation and along said northerly line, 140 feet to an intersec-tion with the westerly line of the easterly 24.5 feet of said Lot 24; thence southerly along said last mentioned westerly line, 47.5 feet to the southerly line of said Lot 24; thence easterly along said last mentioned

southerly line, 24.5 feet to the southeasterly corner of said Lot 24, being also the northwesterly corner of Lot 8 of said Tract No. 3238; thence southerly along the westerly line of Lots 8 through 15 of said Tract No. 3238 a distance of 396.83 feet to the southwesterly corner of said Lot 15; thence southerly in a direct line, 50 feet to the northwesterly corner of Lot 12 of West Hollywood Boulevard Tract No. 2, as shown on map recorded in Book 10, Page 49 of Maps, in said office of the County Recorder; thence southerly along the westerly line of Lots 12 through 1 of said West Hollywood Boulevard Tract No. 2, a distance of 598.80 feet to an intersection with a line that is parallel with and 10 feet northerly, measured at right angles, from the southerly line of said Lot 1, said last mentioned parallel line being also a boundary line of the City of Los Angeles; thence easterly along said last mentioned parallel line, 134.50 feet to the easterly line of said Lot 1, being also the westerly line of Plummer Street, 60 feet wide (now known as La Brea Avenue), as shown on said map of West Hollywood Boulevard Tract No. 2; thence easterly in a direct line, 60.8 feet to the point of beginning.

Exhibit C

Limitations on type, size and height of buildings

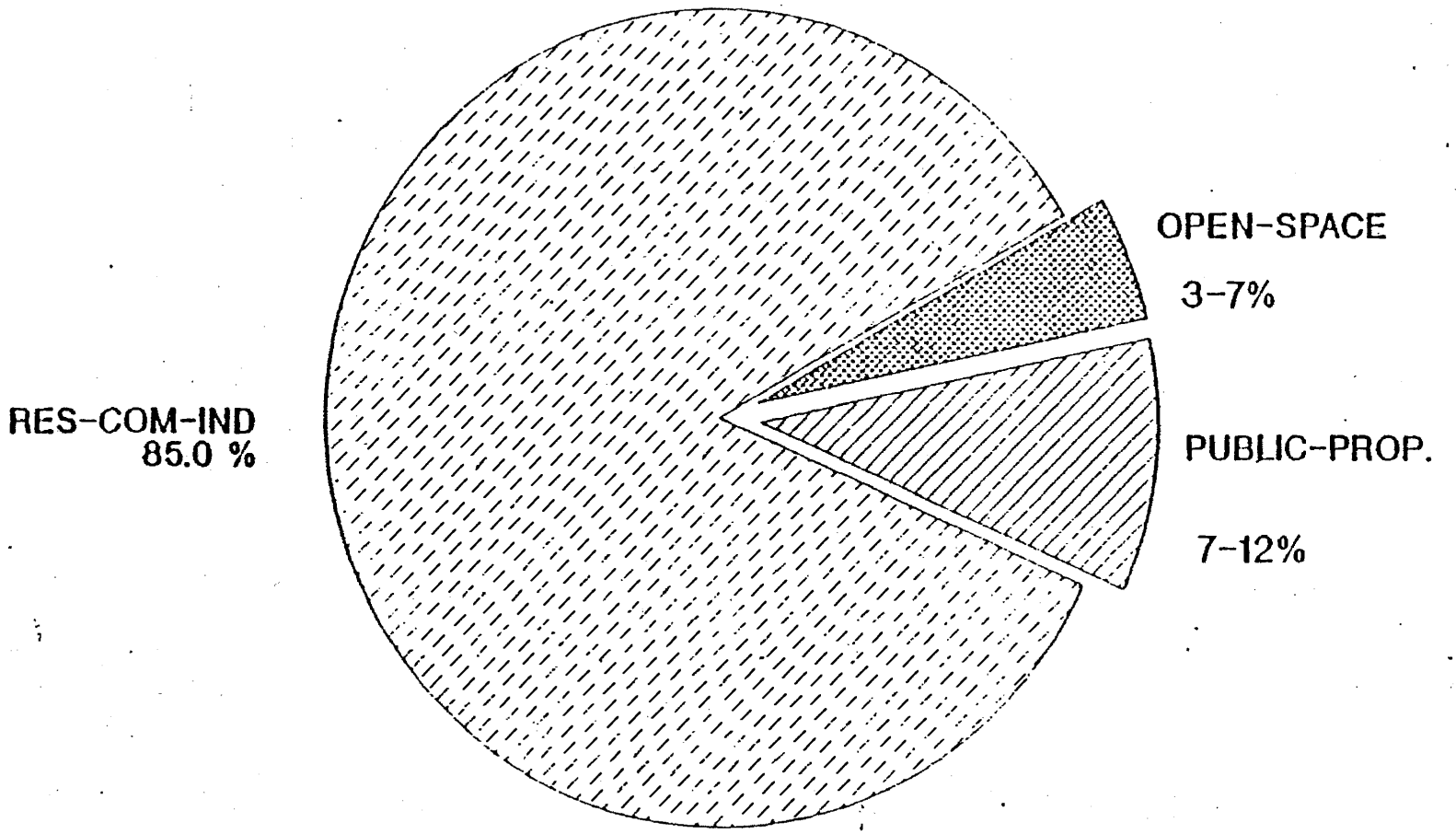


Percentage of Building Type

-rcentages are approximate and the ultimate percentages may vary based on the fulfillment of plan objectives.
. , development plans are subject to the review and approval of the Agency
uilding type size and height are governed by all applicable Federal, State and local ordinances and regulations.

Exhibit D

Diagram illustrating approximate amount of open space to be provided and property devoted to public purposes



1.Open space represents the approx. amount of public open space to be provided
2.Property devoted to public purposes includes public and quasi/public uses

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 25

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

AIDS HEALTHCARE FOUNDATION, a California corporation,

Petitioner,

vs.

CITY OF LOS ANGELES, a municipal corporation; the CITY OF LOS ANGELES CITY COUNCIL; and DOES 1 through 10, inclusive,

Respondents.

CRA/LA, a designated local authority operating as successor agency to the former Community Redevelopment Agency of the City of Los Angeles; the CRA/LA GOVERNING BOARD; the CRA/LA OVERSIGHT BOARD, and ROES 1 through 10, inclusive,

Real Parties in Interest.

Case No. 19STCP04589

VERIFIED FIRST AMENDED PETITION FOR WRIT OF MANDAMUS AND COMPLAINT FOR DECLARATORY/INJUNCTIVE RELIEF

[Code Civ. Proc. §§ 1060, 1085, 1094.5, Pub. Res. Code §§ 21000, et seq. (CEQA), Health & Safety Code § 34173(i)]

[Hon. Richard L. Fruin, Jr.]

THE SILVERSTEIN LAW FIRM, APC
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Pasadena, CA 91101-1504

INTRODUCTION

1. Petitioner AIDS Healthcare Foundation ("Petitioner") seeks a writ of mandamus compelling Respondents City of Los Angeles and the Los Angeles City Council (sometimes collectively "City" or "Respondents") to comply with duties which the law specially enjoins under Health & Safety Code Section 34173(i) and the California Environmental Quality Act ("CEQA"). Additionally, Petitioner seeks declaratory and injunctive relief to halt certain unlawful practices of the City that violate operative redevelopment plans established under state law. The CRA/LA, its Governing Board, and its Oversight Board, whose status is explained later, are joined as Real Parties in Interest as the Designated Local Authority and successor agency to the former Community Redevelopment Agency of the City of Los Angeles ("former CRA") under California redevelopment law because the actions of the City challenged in this case affect significant interests of the CRA/LA.

2. This action arises as a consequence of actions taken by the City. The City adopted a transfer request resolution purporting to selectively transfer to itself land use permit review authority over the redevelopment plans within the City's territory, which plans were established under the state's redevelopment law. However, in doing so, the City did not transfer to itself the inseparable responsibilities of those redevelopment plans, such as enforcing of affordable housing requirements, requiring infrastructure improvements needed to implement the plans, implementing adopted mitigation measures in environmental documents certified in conjunction with such redevelopment plans, and complying with settlement agreement obligations arising out of prior litigation over some of the redevelopment plans. These are inseparable parts of and duties required under the redevelopment plans.

3. Although the City could have adopted a resolution asking to transfer all former CRA land use related plans and functions at any time since redevelopment agencies were abolished in 2011, the City allowed successor agency CRA/LA to incur the expense and continue to perform the planning and permit review work associated with the

redevelopment plans during the last 8 years. The City's position changed when, in June 2018, the CRA/LA issued an interpretation of some redevelopment plans, which interpretation operated to prevent developers proposing certain Transit Oriented Communities ("TOC") density bonus projects from obtaining residential unit densities significantly higher than otherwise allowed under the subject redevelopment plans.

4. Petitioner is informed and believes, and based thereon alleges, that upon learning that the CRA/LA would not approve the high density housing projects the City was prepared to approve using the City's TOC guidelines that violate the residential unit density limits of the redevelopment plans, the City sought to obtain for itself the CRA/LA's powers to review and approve projects within and subject to the redevelopment plans.

5. In the years between 2011 and 2018, the City considered, but failed to adopt, previous versions of transfer request resolutions that had sought transfer of all CRA/LA land use related plans and functions. None of the previous resolutions were adopted. The City had continued to leave the CRA/LA with the responsibility to fulfill the redevelopment plan obligations.

6. After the CRA/LA's 2018 interpretation memorandum, the City changed its approach. The City then drafted a transfer request resolution that presumed it could transfer *selected* portions of the land use related plans and functions-permitting powers of redevelopment plans, while leaving in the hands of the expiring CRA/LA the obligations under and pursuant to those plans, which obligations exist for the health, safety and protection of the City's residents and communities. Additionally, the City drafted a zoning code amendment that purported to incorporate the redevelopment plan permit review process into the City's review process – but included no zoning code provisions that carry over and implement the obligations to implement the redevelopment plans for the benefit of their communities.

7. In support of this transfer request resolution and zoning code amendment, the City first claimed that the actions were exempt from the California Environmental

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Quality Act ("CEQA"). However, as objections were raised to the proposed action, the City also circulated a negative declaration as the environmental review document. The City's actions at issue herein are not only a project subject to CEQA, but substantial evidence exists to support a fair argument that they may foreseeably result in direct and/or indirect impacts to the environment, including as detailed in multiple objection letters filed with the City. Accordingly, the City's use of both or either a notice of exemption and negative declaration violated CEQA.

8. The City's actions purporting to selectively transfer the permit approval authority under the redevelopment plans, but not their corresponding obligations, is *ultra vires*, including under the Redevelopment Dissolution Law, Health & Safety Code §§ 34170 et seq. In addition, because the proposed actions will lead to foreseeable and unmitigated impacts on the environment, the City has failed to proceed in accordance with CEQA. Finally, the City's practice as described below of purporting to allow certain housing projects to obtain residential unit densities that exceed the limits imposed pursuant to the adopted redevelopment plans, which were adopted pursuant to and under the authority of state law, is subject to declaratory and/or injunctive relief to end the City's unlawful practices.

PARTIES

9. Petitioner AIDS Healthcare Foundation ("Petitioner") is a California non-profit corporation that holds significant leasehold and ownership interests within redevelopment plan areas of the City. Petitioner's world headquarters, the Hollywood Out of the Closet thrift store and pharmacy, the Healthy Housing Foundation offices, and the 27-unit Sunrise on Sunset apartments for the homeless buildings, are all located within the project area of the Hollywood Redevelopment Plan, a plan currently in effect and that will not expire for another 8 years, until approximately May 7, 2027. Petitioner also owns affordable housing projects for the homeless in three large hotels in the City Center Redevelopment Plan area (Baltimore Hotel with 204 housing units, King Edward Hotel

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with 150 housing units, and Madison Hotel with 202 housing units), a redevelopment plan in effect and that will not expire for another 13 years, until approximately May 15, 2032. Petitioner and its employees, representatives and community volunteers participated in the hearings before the City and objected to the proposed actions as alleged herein. Petitioner has a substantial interest in ensuring that the City's decisions are in conformity with the requirements of law, and in having those requirements properly executed and the public duties of the City enforced. Petitioner will be adversely affected by impacts resulting from the City's actions and approvals, and is aggrieved by the acts, decisions and omissions of the City as alleged in this petition and complaint. Petitioner is suing on its behalf, and on behalf of others who will be affected in all the affected redevelopment plan areas, as well as for all residents of the City of Los Angeles, and more broadly, including all those who seek to maintain the integrity of the land use entitlement process in Los Angeles.

10. Respondent City of Los Angeles is a California charter city located in the County of Los Angeles, California. The Project is within the jurisdictional limits of the City of Los Angeles.

11. Respondent Los Angeles City Council is the elected governing body of the City, and is the body responsible for the decisions at issue herein.

12. Real Party in Interest CRA/LA is the designated local authority and the successor agency to the assets, liabilities, obligations, redevelopment plans and settlement agreements of the former Community Redevelopment Agency of the City of Los Angeles, located in the County of Los Angeles, California.

13. Real Party in Interest CRA/LA Governing Board is the appointed governing body of the CRA/LA.

14. Real Party in Interest CRA/LA Oversight Board is the appointed oversight board of the CRA/LA.

15. Petitioner is ignorant of the true names of respondents sued herein as DOES 1 through 10, inclusive, and therefore sues said respondents by those fictitious names. Petitioner will amend the petition to allege their true names and capacities when the same

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have been ascertained. Petitioner is informed and believes, and based thereon alleges, that each of these fictitiously named respondents is in some manner responsible for the wrongful conduct alleged in this petition. Petitioner is informed and believes, and based thereon alleges, that these fictitiously named respondents were, at all times mentioned in this petition, the supervisors, agents, servants, and/or employees of their co-respondents and were acting within their authority as such with the consent and permission of their co-respondents.

16. Petitioner is ignorant of the true names of real parties sued herein as ROES 1 through 10, inclusive, and therefore sues said real parties by those fictitious names. Petitioner will amend the petition to allege their true names and capacities when the same have been ascertained. Petitioner is informed and believes, and based thereon alleges, that each of these fictitiously named real parties is in some manner responsible for the wrongful conduct alleged in this petition. Petitioner is informed and believes, and based thereon alleges, that these fictitiously named real parties were, at all times mentioned in this petition, the supervisors, agents, servants, and/or employees of their co-real parties and were acting within their authority as such with the consent and permission of their co-real parties.

GENERAL ALLEGATIONS

17. The redevelopment plans operative in the City of Los Angeles were duly adopted under the authority of state statutory provisions set forth in Health & Safety Code Section 33000, et seq. The authority granted by the Legislature in the Health & Safety Code permitted the former CRA to adopt redevelopment plans, including regulation and controls related to land use limits imposed upon private development projects proposed within the redevelopment plan project areas, and the program obligations to implement those plans.

18. In 2011, the Legislature and Governor approved ABx1 26 to dissolve California redevelopment agencies. In the following legislative session, AB 1484 included

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various "clean-up" provisions to clarify important questions raised by ABx1 26. ("Redevelopment Dissolution Laws"). The Redevelopment Dissolution Laws were enacted by the Legislature in part for the purpose of releasing an ever growing percentage of property tax growth back to primary governmental entities such as cities, counties, and school districts. The Legislature specified an orderly process for existing redevelopment plans to be implemented until their expiration.

19. Upon dissolution of all former redevelopment agencies in the state, the Legislature transferred all assets, obligations, redevelopment plans, implementation plans, and employees to successor agencies, which were generally the original governmental unit that created the former redevelopment agency within its territory. Such successor agencies were prohibited from engaging in new redevelopment activity, but were charged with carrying out the existing legal obligations, redevelopment plans, and redevelopment implementation plans until their normal expiration.

20. However, if the original governmental unit that created a former redevelopment agency did not want to assume all of the assets, obligations, redevelopment plans, redevelopment implementation plans, and employees of its former redevelopment agency, it could give notice that it would not assume such responsibilities. If the original governmental unit that created the former redevelopment agency refused to assume the duties of the successor agency, the Legislature empowered the governor to appoint a Designated Local Authority to assume the affairs of the former redevelopment agency as its successor agency, carry out existing obligations, and fulfill obligations associated with its existing redevelopment plan(s) until normal expiration.

21. The City originally exercised its right to *not* assume the successor agency responsibilities of the former CRA. Petitioner is informed and believes, and based thereon alleges, that Respondent Los Angeles City Council refused to assume the successor agency responsibilities in part because of its desire to avoid enforcement of redevelopment plan obligations, redevelopment implementation plans, existing settlement agreements and

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mitigation measures that are an inseparable part of the former CRA's land use redevelopment plans and functions.

22. Upon notice of the City's rejection of the successor agency responsibilities of the former CRA, the Governor appointed three persons to head a Designated Local Authority to fulfill the successor agency responsibilities. The Governing Board of the Designated Local Authority named itself the "CRA/LA" successor agency to the former CRA. From that day forward, the assets, obligations, plans and employees of the former CRA were managed within the Designated Local Authority named CRA/LA and under the control of its Governing Board and Oversight Board.

23. AB 1484 added Health and Safety Code Section 34173, subdivision (i). Health and Safety Code Section 34173(i) sets forth the circumstances under which a city or county that originally sponsored a former redevelopment agency may assume all land use related plans and functions of the former redevelopment agency:

> "At the request of the city, county, or city and county, notwithstanding Section 33205, all land use related plans and functions of the former redevelopment agency are hereby transferred to the city, county, or city and county that authorized the creation of a redevelopment agency; provided, however, that the city, county, or city and county shall not create a new project area, add territory to, or expand or change the boundaries of a project area, or take any action that would increase the amount of obligated property tax (formerly tax increment) necessary to fulfill any existing enforceable obligation beyond what was authorized as of June 27, 2011."

24. Section 34173(i) provides that upon a request from a city or county, "all land use related plans and functions of the former redevelopment agency are hereby transferred" to the requesting entity.

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25. The Legislature's plain language provides an all or nothing option. Until the City issues a lawful request, "all land use related plans and functions" remain in the successor agency, CRA/LA.

26. The transfer of "all land use related plans and functions" was reworded or reformulated by the City as though an a la carte menu where the City may selectively choose which parts to transfer for the benefit of itself and real estate developers, while other duties and obligations of those plans and functions are left behind in the about-to-close-shop CRA/LA.

27. On at least two occasions, the City Council entertained motions to request that the CRA/LA transfer *all* land use related plans and functions from the CRA/LA to the City. On June 29, 2012, Councilmembers introduced a motion that read in part: "I FURTHER MOVE that the City Council request that all land use plans and functions of the former redevelopment agency (CRA/LA) are hereby transferred to the City of Los Angeles." An October 15, 2012 report of the Chief Administrative Officer acknowledged that the transfer from the CRA/LA, if triggered by the City Council with a request for transfer, would involve absorbing "responsibilities for the planning, land-use and zoning activities then managed by the CRA/LA." The February 21, 2012 Planning Director's report listed the various planning and discretionary approvals required of the former CRA in order to grant increases in density, all of which are more than simply building permit reviews. During the consideration of this motion and reports under Council Files 12-0014-S4 and 12-0600-S75, the City Council contemplated hiring 11 new planners and GIS Information Systems Supervisor at an annual cost of $1,048,674 to handle all the planning activities, as well as building permit reviews required by the redevelopment plans. Ultimately, on December 17, 2012, the City Council, upon recommendation of its Planning and Land Use Management Committee, took action to close the file without completing that request for transfer.

28. On June 6, 2014, in Council File 13-1482-S1, City officials began consideration of a new transfer request resolution and ordinance. This second transfer

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request read: "The City of Los Angeles hereby requests from the CRA/LA that all land use related plans, records, covenants and functions, including the Transfer of Floor Area Rights (TFAR) documentation, of the CRA/LA immediately be transferred to the City of Los Angeles, as authorized by State law." However, the resolution also contained additional statements of certain planning and discretionary approval activities that the CRA/LA performed as part of its redevelopment plans, which the City was unwilling to perform. This version of the transfer request resolution was condemned, including by Legal Aid Foundation of Los Angeles and Hollywood Heritage, as a clear indication of the City's intent to seek the power over project permit approvals, but to shirk from the corresponding responsibilities to implement the redevelopment plans as the CRA/LA had been doing. No further action occurred in Council File 13-1482-S1 thereafter.

29. After nearly two years of silence, on December 20, 2018, the Planning Department returned to the City Planning Commission with the current proposal, as challenged in this litigation. The staff report was blunt regarding the City's proposed intent to *only* transfer building permit review processes of the CRA/LA, but to leave behind all the associated planning required to implement the redevelopment plans for the benefit of affected communities. It said: "The proposed resolution authorizes the transfer of land use authority and would allow the City of Los Angeles to assume only the land use authority vested in the redevelopment plans consistent with state law. All other functions in the Redevelopment Plans that are not land use functions called out in the land use sections ("Land Uses Permitted in the Project Area") of the Redevelopment Plans remain with the CRA/LA-DLA and are not part of the transfer." The proposed transfer request resolution, unlike the previous versions considered by the City, attempted to redefine the meaning of "all land use related plans and functions" to mean only permit review and approval, and went so far as to claim only selected portions of the adopted redevelopment plans would be transferred to the City, leaving behind all other provisions, even though they might be critical requirements to implement the redevelopment plans for community protection and benefit.

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30. Over the objections of Petitioner and many community organizations and individuals, on September 20, 2019, the City Council adopted this a la carte menu version of a transfer request resolution, permit review ordinance, and confusingly, adopted both a notice of exemption and a negative declaration as the alleged supporting environmental review. The City Council adopted the resolution with Ordinance 186325.

31. Ordinance 186325 by its terms explicitly does not effectuate the transfer of all land use related plans and functions. The resolution provides a specific list of sections within the redevelopment plans that are transferred to the City. The resolution transfers the following to the City: Section 500 of the Land Use Provisions set forth in the Adelante Eastside Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Broadway/Manchester Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Central Industrial Redevelopment Plan, Section 600 of the Land Use Provisions set forth in the Chinatown Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the City Center Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Council District 9 Corridors Redevelopment Plan Section 400 of the Land Use Provisions set forth in the Crenshaw Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Crenshaw/Slauson Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Exposition/University Park Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Hollywood Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Laurel Canyon Commercial Corridor Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Mid-City Redevelopment Plan, Section 600 of the Land Use Provisions set forth in the North Hollywood Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Pacific Corridor Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Vermont/Manchester Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Watts Corridors Redevelopment Plan, Section 500 of the Land Use Provisions set forth in the Western/Slauson Redevelopment Plan, Section 500 of the Land

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Use Provisions set forth in the Westlake Redevelopment Plan, and Section 500 of the Land Use Provisions set forth in the Wilshire Center/Koreatown Redevelopment Plan.

32. The transfer of specific sections of the Land Use provisions does not effect a transfer of "all land use related plans and functions" of the CRA/LA as mandated by Health and Safety Code Section 34173(i). A review of the sections that were omitted from, and thus *not* transferred by the resolution, shows land functions of the CRA/LA that have not been transferred. The City's resolution left behind other land functions of the CRA/LA. Solely by way of illustration, for the Hollywood Redevelopment Plan, the City transferred Section 500. That transfer does not include the land use functions in, among others, Section 400. Section 400—"PROPOSED REDEVELOPMENT ACTIVITIES"—contains, for example, subsection 402-Owner Tenant Participation, subsection 406-Demolition, Clearance, Public Improvements, Building and Site Preparation, subsection 407-Property Disposition and Development, subsection 409-Rehabilitation, Conservation and Moving Structures, and subsection 410-Low and Moderate Income Housing. Section 400, among sections in the Hollywood Redevelopment Plan, contains land use functions for the redevelopment of the property. As but one example, Section 400 states the functions of the CRA/LA that may be utilized for redevelopment projects, including the power to give incentives and preferences to tenant and owner participants. Analogously, "'Function' means any power granted by law to a local agency to provide designated governmental or proprietary services or facilities for the use, benefit, or protection of persons or property." Gov. Code § 56040. The City has not transferred all the land use functions from the CRA/LA in the Hollywood Redevelopment Plan or in the other plans. The City has failed to effect the transfer of all land use functions of the CRA/LA as required by Section 34173(i), by the City's transferring of only a single section of each redevelopment plan.

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FIRST CAUSE OF ACTION

(CEQA And CEQA Guidelines)

33. Petitioner realleges and incorporates herein by reference the allegations of Paragraphs 1 through 32, inclusive, of this Petition and Complaint.

34. Initially, the City caused a Notice of Exemption to be prepared for the proposed City actions regarding the transfer request resolution and the zoning ordinance. The City claimed these actions were not a project under CEQA Guidelines Section 15378(b)(5). Additionally, if it was a project under CEQA, the City claimed it qualified for two exemptions under CEQA Guidelines Sections 15308 (Class 8 exemption) and 15320 (Class 20 exemption). The proposed actions are a project under CEQA, they do not qualify for either the Class 8 or Class 20 categorical exemptions, and if somehow they did, no exemption is proper because the proposed actions meet one or more of the exceptions for categorical exemptions set forth in the CEQA Guidelines, *inter alia*, Guidelines Section 15300.2.

35. After comment letters challenged the City's attempt to skirt CEQA's duties to disclose and analyze the direct and indirect environmental impacts of the proposed actions using the Notice of Exemption, the City caused a Negative Declaration to be prepared for the same proposed City actions.

36. The City's environmental review was deficient in numerous ways. For instance, in both environmental documents, the City's Project Description failed to inform the public of the portions of the CRA/LA land use related plans and functions the City was not proposing to transfer to itself. In the staff report, the City stated it would develop procedures to monitor and enforce mitigation measures, but then none of that was included in the transfer request resolution or the zoning code amendment. It also appears that when the Negative Declaration was circulated, the proposed transfer resolution and zoning ordinance were not attached.

37. On or about September 24, 2019, the City Council approved the Notice of Exemption, the Negative Declaration, and the proposed transfer request resolution and

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zoning ordinance. Petitioner is informed and believes, and based thereon alleges, that a Notice of Exemption and a Notice of Determination were recorded by the City with the County Clerk on or about September 24, 2019.

38. By adopting the Notice of Exemption, the City prejudicially abused its discretion and failed to proceed in the manner required by law, requiring this Court to issue a writ of mandamus vacating and invalidating all Project approvals, including the transfer request resolution and zoning code amendment, that rely on the illegal Notice of Exemption.

39. Further, an EIR must be prepared "[i]f there is substantial evidence, in light of the whole record before the lead agency, that the project may have a significant effect on the environment. . . ." (Pub. Res. Code § 21080(d).) Thus, an EIR must be prepared "if a lead agency is presented with a fair argument that the project may have a significant effect on the environment . . . even though it may also be presented with other substantial evidence that the project will not have a significant effect." (Guidelines § 15064(f)(1).)

40. Under specific and limited circumstances, the public agency evaluating a proposed project may find that an EIR is not required. In such cases, the agency may adopt a negative declaration or a mitigated negative declaration. A negative declaration may be prepared and adopted for a proposed project that "will not have a significant effect on the environment and does not require the preparation of an environmental impact report." (Pub. Res. Code § 21064.) An MND may be prepared or adopted when "revisions in the project plans . . . would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur" and "there is not substantial evidence in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (Pub. Res. Code § 21064.5.) If either of these conditions does not apply to the project in question, the agency must prepare an EIR.

41. The record contains substantial evidence to support a fair argument that the Project may cause significant, unmitigable impacts to the environment, including but not

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limited to land use, transportation, emergency response times, parking, pedestrian safety, noise, air quality and health risks, greenhouse gas, historic resources, public services, cumulative impacts and growth inducing impacts, and further, that the City also illegally piecemealed the Project, in violation of CEQA.

42. By adopting the Negative Declaration, the City prejudicially abused its discretion and failed to proceed in the manner required by law, requiring this Court to issue a writ of mandamus vacating and invalidating all Project approvals, including the transfer request resolution and zoning code amendment, that rely on the illegal Negative Declaration.

43. Petitioner is further informed and believes, and based thereon alleges, that the City improperly approved the Project and adopted the Negative Declaration while deferring mitigation for potentially significant impacts, as well as deferring studies, alternatives analysis, and consideration and implementation of potential mitigation measures, all in violation of CEQA.

44. In violation of Public Resources Code Section 21082.2(d), the City refused to prepare an EIR or further study any of the issues raised by Petitioner and other members of the public.

45. Petitioner, interested groups, and individuals made oral and written comments in opposition to the Project and the City's failures to comply with its duties under CEQA. Petitioner has exhausted all administrative remedies.

46. Petitioner as well as members of the general public will suffer irreparable harm if the relief requested herein is not granted and the Project is commenced without compliance with all applicable provisions of CEQA.

47. Petitioner has performed all conditions imposed by law precedent to filing this action, including complying with the requirement of Public Resources Code Section 21167.5 by mailing notice to the City and CRA/LA that this action would be filed.

48. Petitioner will also serve a copy of this Petition on the California Attorney General as required by law.

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49. Petitioner has no plain, speedy or adequate remedy available to it in the ordinary course of law to redress the claims alleged in this Petition. Petitioner and the public generally will suffer irreparable harm if the City is not required to comply with CEQA and to vacate and set aside the above-described approvals.

SECOND CAUSE OF ACTION

(Health & Safety Code § 34173(i))

50. Petitioner realleges and incorporates herein by reference the allegations of Paragraphs 1 through 49, inclusive, of this Petition and Complaint.

51. Health & Safety Code § 34173(i) only permits the City to request the CRA/LA to transfer all land use related plans and functions of the former CRA to the City.

52. Health & Safety Code § 34173(i) does not authorize the City, as the City did in this matter, to restrict or limit the scope of redevelopment plans and functions to be transferred, to redefine terms of plans, to amend redevelopment plans, or to evade assumption of all redevelopment plans and functions once the City decides to make a transfer request.

53. The transfer request resolution and zoning code amendment adopted by the City Council on September 24, 2019 are *ultra vires* acts without authority under, and in violation of, the Redevelopment Dissolution Laws. By expressly and explicitly transferring *only selected portions* of the land use related plans and functions of the redevelopment plans, the transfer request resolution and other approvals by the City, as so adopted, violated clear, present and ministerial duties owed by the City, including in violation of Health & Safety Code § 34173(i).

54. Petitioner, interested groups, and individuals made oral and written comments in opposition to the City's transfer request resolution and related zoning code amendment. Petitioner has exhausted all administrative remedies.

55. Petitioner has no plain, speedy or adequate remedy available to it in the ordinary course of law to redress the claims alleged in this Petition. Petitioner and the

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public generally will suffer irreparable harm if the City is not required to comply with Health & Safety Code § 34173(i), and to vacate and set aside Ordinance 186325 and the related transfer ordinance, which by their express terms effectuated only partial transfers of the land use related plans and functions.

56. In addition, an actual and present controversy has arisen and now exists between petitioner and respondents regarding the City's failure to comply with the provision of Health & Safety Code Section 34173(i). A declaration from this Court is necessary to establish the validity of the transfer by the City from the CRA/LA, which in turn is necessary for the proper processing and handling of the redevelopment plans going forward. Even if, somehow, a determination were made that notwithstanding the expressly selective language used by the City in the transfer request resolution, a full transfer of all land use related plans and functions was effectuated, a declaration by the Court stating that a complete transfer of *all* land use related plans and functions of the redevelopment plans occurred is essential. Otherwise, Petitioner, the general public, the City itself and developers will be confused about the nature, scope and extent of the land use related plans and functions that were, or were not, transferred by the City to itself.

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THIRD CAUSE OF ACTION

(Illegal Pattern and Practice of Permitting Residential Unit Density Of Projects To Exceed The Limits Imposed Under State Redevelopment Plans Within The City)

57. Petitioner realleges and incorporates herein by reference the allegations of Paragraphs 1 through 56, inclusive, of this Petition and Complaint.

58. An actual and present controversy has arisen and now exists between Petitioner, on the one hand, and the City, on the other, in that the City has demonstrated a pattern and practice that constitutes an overarching, quasi-legislative policy of City officials to utilize unlawful Transit Oriented Communities (TOC) Guidelines and Conditional Use Permit density bonus requests to evade and ignore applicable redevelopment plan limits on residential unit density and floor area ratios.

59. On June 27, 2018, the CRA/LA issued a memorandum concluding that the redevelopment plans within the City "are not superseded by Measure JJJ and the implementing TOC Ordinance." While the CRA/LA memorandum mistakenly refers to a "TOC Ordinance," in actuality, the City Planning Director and City Planning Commission have adopted only TOC Guidelines, not an ordinance. Those TOC Guidelines purport to grant a set of development incentives not authorized by the voters in the text of Measure JJJ's initiative language. The validity of these TOC Guidelines is currently under challenge in the separate case of Fix the City v. City of Los Angeles (LASC Case No. 19STCP03740). However, even if adopted as an ordinance, the City's TOC Guidelines, as correctly interpreted by the CRA/LA in its June 27, 2018 memorandum, do not override the residential unit density and floor area ratio limits contained in the redevelopment plans.

60. On April 4, 2019, the City Planning Director issued a letter to the City Clerk advising that all projects that had filed for approval as high density TOC projects that were inconsistent with residential unit density or floor area ratio limits of redevelopment plans were directed to convert their projects from TOC to Conditional Use Permit under Los Angeles Municipal Code Section 12.24.U.26 as an alternative, City-created process. In effect, the City is advising developers to seek to use the density CUP process to evade the density limits of the redevelopment plans. However, because both the TOC Guidelines and the City's Conditional Use Permit for Density Increases, which allow for density above that authorized by the state density bonus law, are locally-created programs, they both are contrary to and overridden by the provisions, contents and requirements of the state-created redevelopment plans.

61. The property within the boundaries of the redevelopment plan project areas are governed by the density provisions in those redevelopment plans. The City is bound by the terms of the redevelopment plans and density provisions therein.

62. Petitioner and other community organizations made oral and written comments in opposition to the City's illegal use of the transfer request resolution and related zoning code amendment as a prelude to reinterpretation of or effective amendment

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of redevelopment plans in order to allow and approve densities improperly granted under the TOC Guidelines. Petitioner and other community organizations also made oral and written comments in opposition to the City's improper and illegal use of a Conditional Use Permit Density Bonus increase to alternatively override the residential unit density and floor area limits of redevelopment plans. Petitioner has exhausted all administrative remedies.

63. Petitioner has no plain, speedy or adequate remedy available to it in the ordinary course of law to redress the claims alleged in this Petition. Petitioner and the public generally will suffer irreparable harm if the City is not restrained from using one or both of these unlawful methods to evade the lawful limits of the redevelopment plans.

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PRAYER

WHEREFORE, Petitioner prays for judgment as follows:

1. For a peremptory writ of mandamus directing the City and City Council to vacate and set aside the actions approving the Notice of Exemption, Negative Declaration, Transfer Request Resolution, and Zoning Change Ordinance.

2. That the Court enjoin the City, City Council, City Planning Commission, their officers, employees, agents, boards, commissions and other subdivisions, including but not limited to the Planning Dept. and Dept. of Building & Safety, from assuming the CRA/LA's land use related plans and functions, until such time, at a minimum, as the City makes a lawful request to assume, and does assume, all land use plans, functions and responsibilities as mandated by Health & Safety Code Section 34173(i).

3. For a peremptory writ of mandamus directing the City and City Council to vacate and set aside Ordinance 186325 and the resolution adopted therewith.

4. That the Court grant declaratory and injunctive relief that Ordinance 186325 and the resolution adopted therewith, including the language the City used to expressly transfer only parts of the land use plans and functions, violate the provisions and requirements of Health & Safety Code Section 34173(i) and are invalid; or at a minimum,

if a determination were made that despite the expressly selective language used by the City in the transfer request resolution that a full transfer of all land use related plans and functions was in fact effectuated, then a declaration by the Court stating that a complete transfer of *all* land use related plans and functions of the redevelopment plans occurred and is binding on the City.

5. That the Court grant declaratory and injunctive relief holding that the City's pattern and practice of evading development limitations of redevelopment plans through use of any locally-created land use entitlement, including but not limited to TOC Guideline Incentives or Conditional Use Permit Density Increases, is unlawful.

6. That the Court grant injunctive relief to enjoin the City and all City officials from further carrying out their pattern and practice to evade development limitations of redevelopment plans through use of any locally-created land use entitlement, including but not limited to TOC Guideline Incentives or Conditional Use Permit Density Increases, and to otherwise comply with the law, including suspending or revoking any approvals that the City has granted to development projects based upon its illegal conduct as alleged herein.

7. For attorney fees, including pursuant to Code Civ. Proc. Section 1021.5.

8. For costs of suit; and

9. For such other and further relief as the Court may deem just and proper.

Dated: January 17, 2020

THE SILVERSTEIN LAW FIRM, APC

By: */s/ Robert P. Silverstein*
ROBERT P. SILVERSTEIN
DANIEL E. WRIGHT
Attorneys for Petitioner
AIDS HEALTHCARE FOUNDATION

THE SILVERSTEIN LAW FIRM, APC
215 North Marengo Avenue, 3rd Floor
Pasadena, CA 91101-1504

VERIFICATION

STATE OF CALIFORNIA)
) ss:
COUNTY OF LOS ANGELES)

I, MICHAEL WEINSTEIN, declare as follows:

I am authorized to make this verification on behalf of the Petitioner in this action.

I have read the foregoing First Amended Petition for Writ of Mandamus and Complaint for Declaratory/Injunctive Relief and am familiar with its contents. The same is true of my own knowledge, except as to those matters which are therein stated on information and belief, and, as to those matters, I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed at Los Angeles, California, on the 17th day of January, 2020.

MICHAEL WEINSTEIN

By Ashoke S. Talukdar, Esq.,
Attorney-in-fact to
Michael Weinstein

THE SILVERSTEIN LAW FIRM, APC
215 North Marengo Avenue, 3rd Floor
Pasadena, CA 91101-1504

THE SILVERSTEIN LAW FIRM, APC
215 North Marengo Avenue, 3rd Floor
Pasadena, CA 91101-1504

PROOF OF SERVICE

I, VERONICA LEBRON, declare:

I am a resident of the state of California and over the age of eighteen years, and not a party to the within action; my business address is The Silverstein Law Firm, 215 North Marengo Ave, Third Floor, Pasadena, California 91101-1504. On January 17, 2020, I served the within document(s):

VERIFIED FIRST AMENDED PETITION FOR WRIT OF MANDAMUS AND COMPLAINT

☒ by placing the document(s) listed above in a sealed envelope with postage thereon fully prepaid, in the United States mail at Pasadena, California addressed as set forth below.

I am readily familiar with the firm's practice of collection and processing correspondence for mailing. Under that practice it would be deposited with the U.S. Postal Service on that same day with postage thereon fully prepaid in the ordinary course of business. I am aware that on motion of the party served, service is presumed invalid if postal cancellation date or postage meter date is more than one day after date of deposit for mailing in affidavit.

CASE NAME:	**AIDS HEALTHCARE FOUNDATION V. CITY OF LOS ANGELES, ET AL.**
CASE No.:	**19STCP04589**

I declare under penalty of perjury under the laws of the State of California that the above is true and correct.

Executed on January 17, 2020, at Pasadena, California.

/s/ Veronica Lebron
VERONICA LEBRON

SEE ATTACHED SERVICE LIST

SERVICE LIST

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(for the CRA/LA Oversight Board)

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Pasadena, CA 91101-1504

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 26

RESOLUTION

WHEREAS, in 1945, the California State Legislature authorized the formation of community redevelopment agencies as a tool to revitalize blighted communities; and

WHEREAS, in 1948, pursuant to this authority, the City of Los Angeles (City) created the Community Redevelopment Agency of the City of Los Angeles (Former Agency); and

WHEREAS, in the summer of 2011, the California State Legislature enacted AB X1 26, which dissolved redevelopment agencies in California and gave each city that had created a redevelopment agency the option to become the successor agency in charge of winding down the operations of the former redevelopment agency that the city had created; and

WHEREAS, on January 11, 2012, the City elected not to become the successor agency to the Former Agency, and on February 1, 2012, the Governor appointed a Designated Local Authority (CRA/LA-DLA) to wind down the Former Agency's operations; and

WHEREAS, on June 27, 2012, the State passed additional legislation (AB 1484) amending Section 34173 (i) of the California Health and Safety Code to allow the transfer of land use related plans and functions of the former redevelopment agency to the city or county that authorized the creation of the redevelopment agency; and

WHEREAS, as of the date of adoption of this Resolution, there are: (i) 19 active redevelopment plans for 19 project areas (collectively, the "Project Areas") that were prepared by the Former Agency and adopted by the City Council by ordinances approved by the Mayor, which redevelopment plans will expire on various dates after the effective date of this Resolution and are described in Sections 3 through 21 of this Resolution (collectively, the "Redevelopment Plans"); and (ii) various design guidelines, development guidelines, and other rules, regulations, and similar guidelines governing signs, open space, streets, utilities, land use, or development that were adopted by the Former Agency pursuant to the Redevelopment Plans (collectively, the "Guidelines"); and

WHEREAS, while Health and Safety Code Section 34173(i) provides for the transfer of land use related plans and functions of the Former Agency to the City, Health and Safety Code Section 34173(g) provides that liabilities of the Former Agency shall not be transferred to the City, and Health and Safety Code Sections 34177(a) and 34177(c) provide that the CRA/LA-DLA is required to make payments due for any enforceable obligations of the Former Agency or CRA/LA-DLA, as defined in Health and Safety Code Section 34171(d), (collectively "Enforceable Obligations") and to perform obligations required pursuant to any Enforceable Obligation; and

WHEREAS, transferring the land use related plans and functions of the Former Agency to the City is critical to: (i) maintain important land use protections in the Project Areas with active Redevelopment Plans, (ii) retain local control over land use policy in

the City, (iii) ensure continuity and certainty for the development community, and (iv) ensure that the City's economic development goals are achieved;

NOW, THEREFORE, BE IT RESOLVED:

1. The Recitals set forth above are true and correct and are incorporated herein by reference.

2. Pursuant to the authority conferred upon the City by Health and Safety Code Section 34173(i), the City hereby requests that all land use related plans and functions of the Former Agency, which are set forth in paragraphs A and B of this Section be transferred to the City.

A. For purposes of this Resolution, land use related plans of the Former Agency mean only those provisions of the Redevelopment Plans and Guidelines that govern land use or development("Land Use Provisions").

B. For purposes of this Resolution, land use related functions mean only functions, which, following the effective date of this Resolution, allows the City to apply the Land Use Provisions to the Project Areas; and undertake related activities as necessary.

i. Nothing herein shall be construed to prohibit the City, following the effective date of this Resolution, from doing any of the following:

a. Updating and amending the Land Use Provisions or performing any other actions pursuant to State law; and

b. Adopting and updating the General Plan, Community Plans, policies and other rules, regulations, and guidelines governing design, signs, open space, streets, utilities, land use, or development within the Project Areas; and

c. Promulgating administrative guidelines to interpret and implement the Land Use Provisions. The administrative guidelines include, but are not limited to guidelines to implement the mitigation measures of the Unexpired Redevelopment Plans. The mitigation measures will be implemented by the City consistent with the requirements of CEQA.

ii. Nothing herein shall be construed to require the City to do any of the following:

a. Perform any land use related function, including enforcement of regulations related to signs, in a manner or to an extent that would violate applicable law; and

b. Perform any land use related function including enforcement of regulations related to signs, in a manner or to an extent that would violate a final order of a court of competent jurisdiction.

3. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Adelante Eastside Redevelopment Plan as adopted by Ordinance No. 172,514, and as heretofore amended.

4. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Broadway/Manchester Redevelopment Plan as adopted by Ordinance No. 170,175, and as heretofore amended.

5. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Central Industrial Redevelopment Plan as adopted by Ordinance No. 174,978, and as heretofore amended.

6. The transfer set forth in section 2 above includes Section 600 the Land Use Provisions set forth in the Chinatown Redevelopment Plan as adopted by Ordinance No. 153,365, and as heretofore amended.

7. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the City Center Redevelopment Plan as adopted by Ordinance No. 174,593, and as heretofore amended.

8. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Council District 9 Corridors Redevelopment Plan as adopted by Ordinance No. 170,807, and as heretofore amended.

9. The transfer set forth in section 2 above includes Section 400 the Land Use Provisions set forth in the Crenshaw Redevelopment Plan as adopted by Ordinance No. 158,933, and as heretofore amended.

10. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Crenshaw/Slauson Redevelopment Plan as adopted by Ordinance No. 170,734, and as heretofore amended.

11. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Exposition/University Park Redevelopment Plan as adopted by Ordinance No. 131,730, and as heretofore amended.

12. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Hollywood Redevelopment Plan as adopted by Ordinance No. 175,236, and as heretofore amended.

13. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Laurel Canyon Commercial Corridor Redevelopment Plan as adopted by Ordinance No. 180,695, and as heretofore amended.

14. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Mid-City Redevelopment Plan as adopted by Ordinance No. 171,064, and as heretofore amended.

15. The transfer set forth in section 2 above includes Section 600 the Land Use Provisions set forth in the North Hollywood Redevelopment Plan as adopted by Ordinance No.171,745 , and as heretofore amended.

16. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Pacific Corridor Redevelopment Plan as adopted by Ordinance No. 174,549, and as heretofore amended.

17. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Vermont/Manchester Redevelopment Plan as adopted by Ordinance No. 171,065, and as heretofore amended.

18. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Watts Corridors Redevelopment Plan as adopted by Ordinance No. 170,769, and as heretofore amended.

19. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Western/Slauson Redevelopment Plan as adopted by Ordinance No. 171,063, and as heretofore amended.

20. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Westlake Redevelopment Plan as adopted by Ordinance No. 172,597, and as heretofore amended.

21. The transfer set forth in section 2 above includes Section 500 the Land Use Provisions set forth in the Wilshire Center/Koreatown Redevelopment Plan as adopted by Ordinance No. 170,806, and as heretofore amended.

22. The transfer of land use related plans and functions set forth herein does not create a new project area, add territory to, or expand or change the boundaries of a redevelopment project area, nor does it increase the amount of obligated property tax (formerly tax increment) necessary to fulfill any existing Enforceable Obligation beyond what was authorized as of June 27, 2011.

23. The transfer of land use related plans and functions set forth herein shall constitute a change in the organization or reorganization of local governmental agencies that does not alter the geographic areas within which the powers are exercised for the purposes of the California Environmental Quality Act, and therefore, such request and the transfer shall be exempt from environmental review, pursuant to Section 15320 of Title 14 of the California Code of Regulations. In addition, it can be seen with certainty that the transfer to the City of the land use plans and functions specified herein, due to the dissolution of the Former Agency, will not have a significant effect on the environment. Therefore, such request and the transfer shall be exempt from

environmental review, pursuant to Section 15061(b)(3) of Title 14 of the California Code of Regulations.

24. The transfer of land use related plans and functions set forth herein shall become effective upon the effective date of the accompanying Ordinance No. XXX,XXX.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 27

SUMMARY OF DRAFT EIR

HOLLYWOOD COMMUNITY PLAN REVISION

THE CITY OF LOS ANGELES

MARCH 1988

SUMMARY
DRAFT ENVIRONMENTAL IMPACT REPORT
HOLLYWOOD COMMUNITY PLAN REVISION

State Clearinghouse Number : 87112504
EIR No. CPC 1070 - GP/ZC

PROJECT OVERVIEW:

The Hollywood Community Plan Revision updates the adopted Hollywood Community Plan, and establishes consistency between the General Plan and zoning designations. It adjusts future land usage and density to reflect not only the growth that has occurred over the past fifteen years, but also the growth that is determined to be desirable, given the physical constraints of the existing street system.

CITY ACTION REQUIRED:

Amend the Hollywood Community Plan to reflect the recommendations of the Hollywood Community Plan Revision.

APPLICANT:

City of Los Angeles, Department of City Planning, Community Planning Division

LOCATION AND BOUNDARIES:

The Hollywood Community Plan area is located west of Pasadena and downtown Los Angeles, and south of Glendale and Burbank (see Figure 1). The Plan area is irregular in shape and is generally bounded by Melrose Avenue on the south, Hyperion Avenue and Golden State Freeway on the east, and Barham Boulevard, Forest Lawn Drive and Ventura Freeway on the north. On the west, it is bordered by Cahuenga Boulevard, Mulholland Drive, Laurel Canyon Boulevard and a line running at a southwest tangent from Laurel Canyon Boulevard.

GEOGRAPHIC AREAS COVERED BY THE PROPOSED PLAN REVISION:

The Hollywood Community Plan Area is shown in Figure 2. The Plan Revision proposes changes in land use designations in all parts of the Community Plan area except the Redevelopment Area. A plan for that area was recently prepared by the Community Redevelopment Agency (CRA) and adopted by the City Council in May 1986. Although this Plan Revision cannot alter the recently adopted Redevelopment Plan, the Redevelopment Plan is included in the evaluation of transportation and other service system capacities and other impacts. Furthermore, the Plan Revision identifies refinements to the Redevelopment Plan's land use designations which are needed to make the community-wide transportation system work.

In the two recently adopted plan amendment areas - the Beverly Hills Freeway Deletion Area and the Highland Cahuenga Area - the Plan Revision proposes only minor changes to make land uses in those areas consistent with the rest of the Plan Revision area.

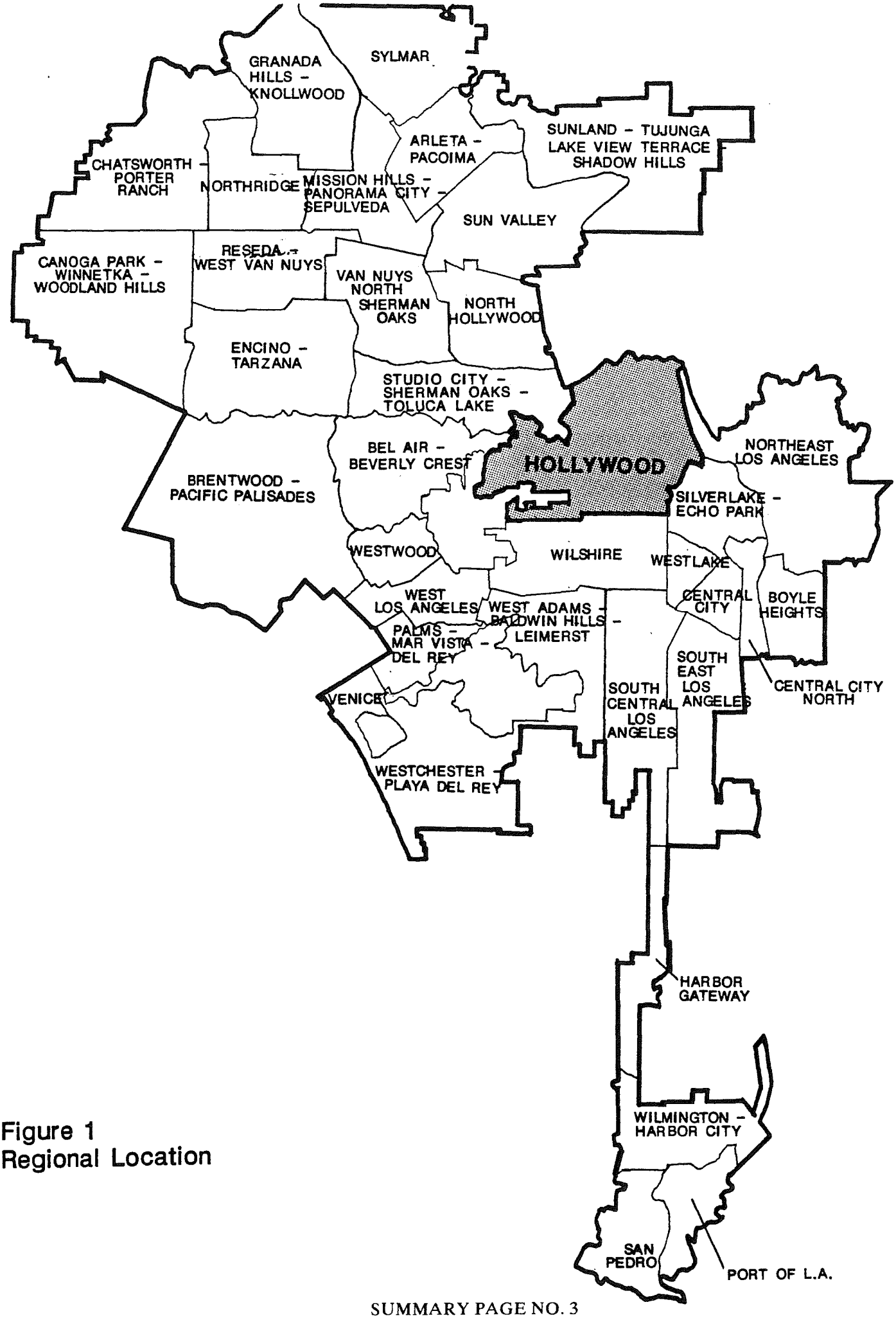


Figure 1
Regional Location

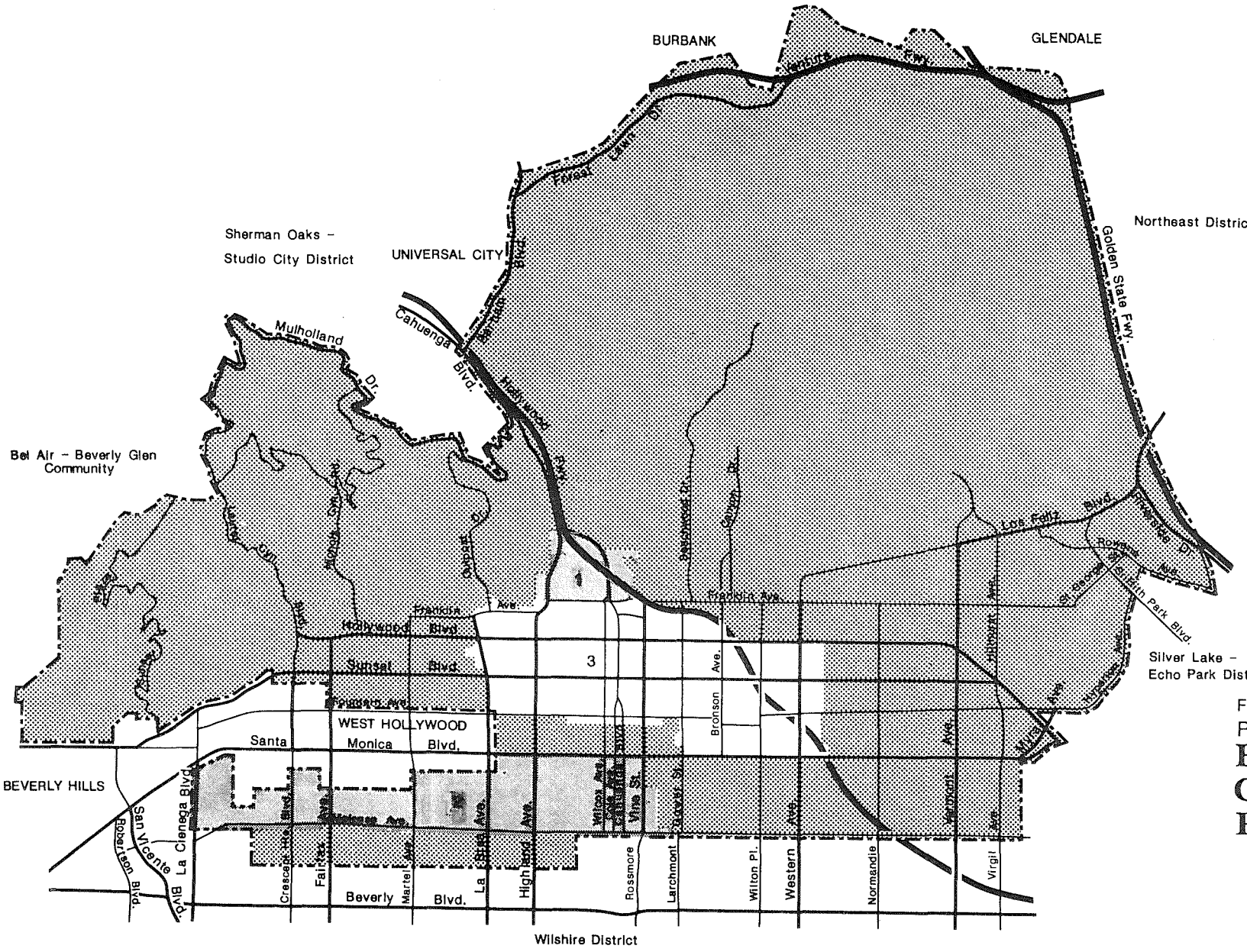


Figure 2
PLAN AREA
HOLLYWOOD COMMUNITY PLAN REVISION

0 800 1600 3200

GRUEN ASSOCIATES

CITY OF LOS ANGELES

OBJECTIVES OF THE PLAN REVISION:

To accommodate the total population projected by the Southern California Association of Governments (SCAG) for the year 2010, plus a 10 to 15 percent capacity buffer in the entire Hollywood Community Plan area, including the Redevelopment Area;

To provide enough additional community-serving retail and services outside the Redevelopment Area to serve that additional population;

To permit enough additional community and regional-serving office development, retail and services to revitalize downtown Hollywood and create an employment center that is concentrated enough to be served by public transportation, carpooling and vanpooling, and with nearby housing to facilitate walking and bicycling to work.

To provide enough additional industrial capacity to permit the film and television industries to remain in Hollywood and to expand.

To create cohesive neighborhoods with generally similar building types (for example, mostly single-family houses or mostly duplexes or mostly apartment buildings).

To provide commercial uses to serve the Hollywood residential community in a logical land use pattern that provides a choice of shopping opportunities and reduces automobile trips.

To ensure adequate traffic capacity and public improvements and facilities to support the build-out population.[1]

To enhance the quality of life in Hollywood.

PLAN LAND USES:

Table 1 shows the distribution of land area in the Plan Revision area under the Proposed Plan: 54 percent residential, 39 percent open space and public facilities, 5 percent commercial and 1 percent industrial. This distribution reflects the existing distribution of land uses. In comparison the Current Plan distribution is: 60 percent residential, 33 percent open space, 5 percent commercial and 2 percent industrial.

Figure 3 shows the proposed residential land uses for the Plan Revision area. As the figure and Table 1 indicate, 71.1 percent of the residential land would be devoted to single family housing (Minimum, Very Low II, Low I and Low II plan categories), 6 percent to duplexes (Low Medium I), 16.7 percent to low

---

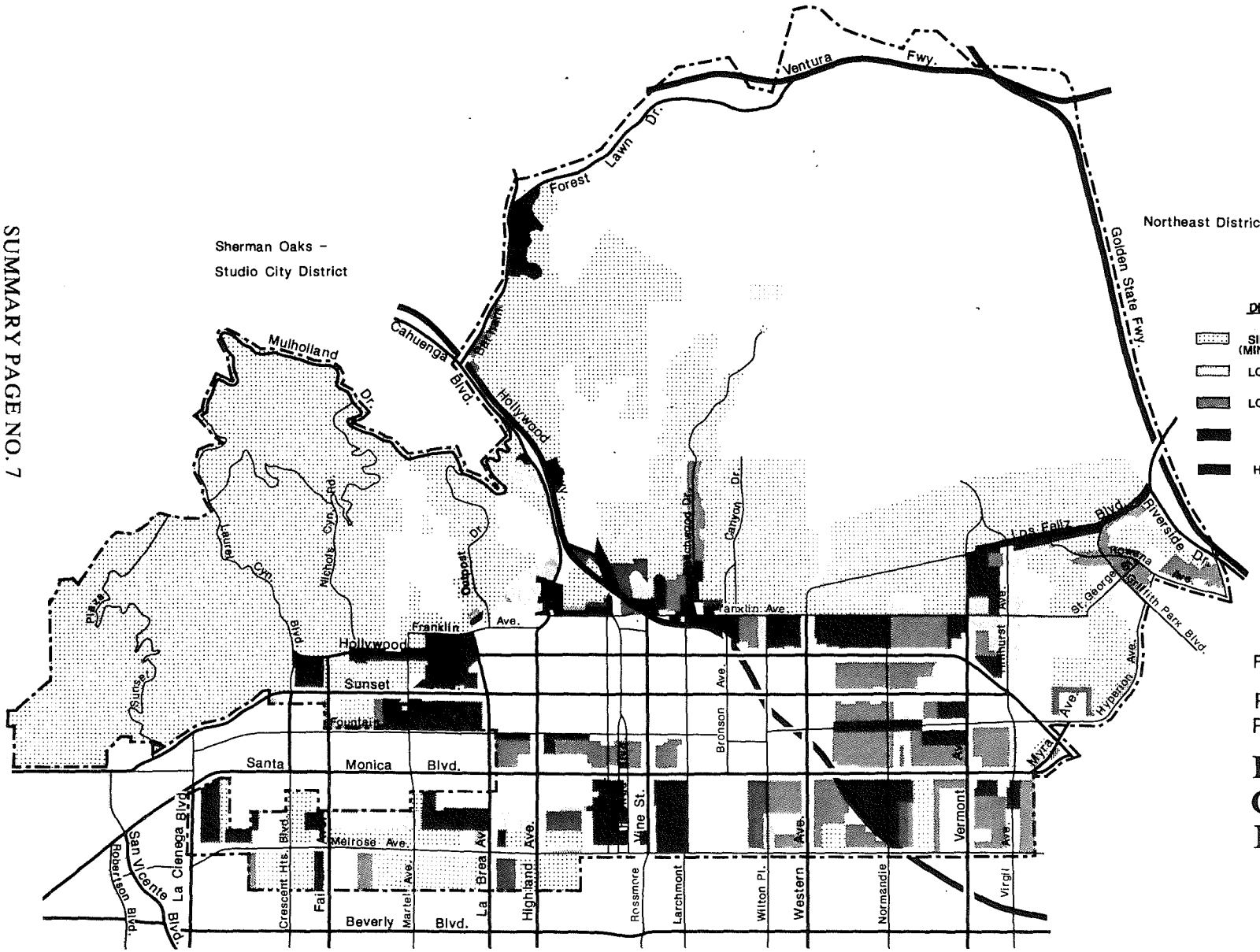
[1]. Build-out is defined here as the population resulting from the maximum development permitted for a given land use category.

TABLE 1 /a/
PROPOSED LAND USE CATEGORIES AND DISTRIBUTION

Plan Category	Corresponding Zone	Units Per Gross Acre	Acres	Percent
Minimum	A1, A2, RE40	.5 to 1	928	6.6 %
Very Low I	RE20, RA	1+ to 2	-	0.0 %
Very Low II	RE15, RE11	2+ to 3	1,668	11.9 %
Low I	RE9	3+ to 5	451	3.2 %
Low II	R1, RS, RD6	5+ to 7	2,370	16.8 %
Low Medium I	R2, RD5, RD4, RD3	7+ to 12	456	3.2 %
Low Medium II	RD1.5, RD2	12+ to 24	889	6.3 %
Medium	R3	24+ to 40	830	5.9 %
High Medium	R4	40+ to 60	23	0.2 %
High	R4	60+ to 80	-	0.0 %
Very High	R5	80+	-	0.0 %
RESIDENTIAL SUBTOTAL			**7,615**	**54.1 %**
Recreation and Schools			4,228	30.1 %
Other Public Uses			341	2.4 %
Open Space/Freeway			956	6.8 %
OPEN SPACE/PUBLIC SUBTOTAL			**5,525**	**39.3 %**
Limited Commercial			50	0.3 %
Highway Oriented Commercial			235	1.7 %
Neighborhood Oriented Commercial			331	2.4 %
Community Commercial			68	0.5 %
Manufacturing (CM, LTDM, LTD)			244	1.7 %
NON-RESIDENTIAL SUBTOTAL			**928**	**6.6 %**
GRAND TOTAL			**14,068**	**100.0 %**

/a/ Does not include the Hollywood Redevelopment Area.

Source: Gruen Associates



PLAN DESIGNATION	UNIT PER GROSS ACRE	TYPICAL CORRESPONDING ZONING
SINGLE FAMILY (MINIMUM-LOW II)	0.5-7	RE40-1 to R1-1
LOW MEDIUM I	7-12	RD3-1 to R2-1
LOW MEDIUM II	12-24	RD1.5, RD2-1
MEDIUM	24-40	[Q]R3-1, R3-1
HIGH MEDIUM	40-60	[Q]R4-1

Figure 3

PROPOSED PLAN:
RESIDENTIAL USES

HOLLYWOOD COMMUNITY PLAN REVISION

0 800 1600 3200

GRUEN ASSOCIATES

CITY OF LOS ANGELES

density apartments or townhouses (Low Medium II), 11.7 percent to medium density apartments, 0.3 percent to high medium density apartments (located only in the Highland-Cahuenga Corridor Area just north of downtown Hollywood), and none to high or very high density apartments. In contrast, the Current Plan devotes only 3.5 percent of residential land to duplexes and low density apartments, 15.2 percent to medium density apartments, and 8.9 percent to high medium, high and very high density apartments.

Figure 4 shows the proposed nonresidential land uses. Of the total land area devoted to commercial uses, 7% would be Limited Commercial, 34% Highway-Oriented Commercial, 48% Neighborhood-Oriented Commercial, and 10% Community Commercial (medical center). In the Current Plan, approximately the same land area is devoted to commercial uses, but that land is almost evenly split among the highway-oriented, neighborhood office and community commercial categories.

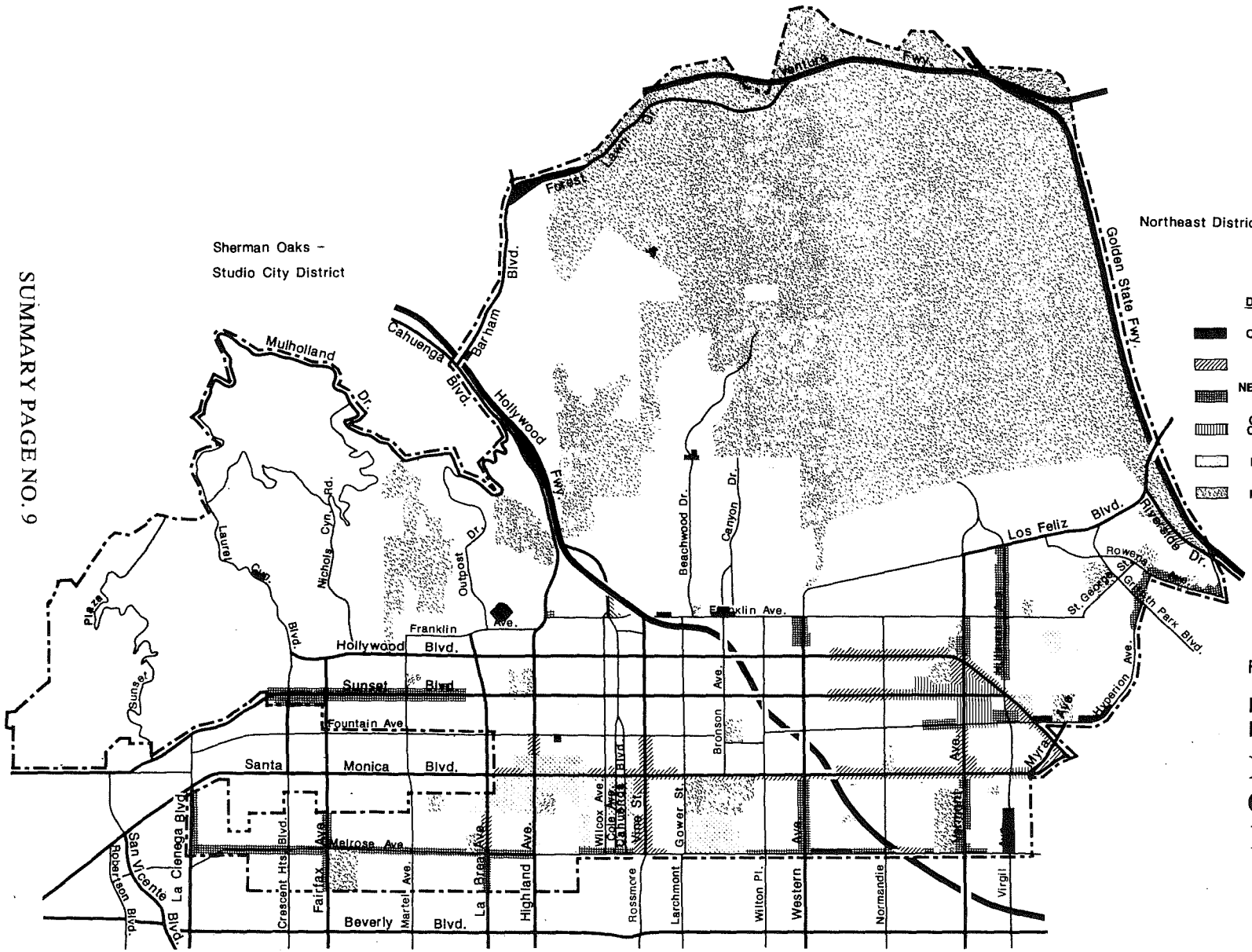
PLAN CAPACITY:

Table 2 and Figure 5 summarize the development capacity of the Proposed Plan for the Revision Area and compares that capacity with 1987 development and with the capacity of the Current Plan. Capacity is described in terms of housing units, population, and non-residential floor space.

Housing Capacity. Build-out of the Proposed Plan, which achieves the objective of accommodating only the year 2010 population projection plus a 15 percent capacity buffer, represents a 26 percent increase in housing units for the entire Community Plan area, compared with an increase in excess of 89 percent permitted by the Current Plan plus the adopted Redevelopment Plan area.

Nonresidential Development Capacity. In an effort to make the transportation system and other public facilities and service systems workable, the Proposed Plan (within the revision area) reduces the development capacity of commercially and industrially zoned land to:

- 0.5 times buildable area (i.e. a "Floor Area Ratio" of 0.5:1) for Highway-Oriented and Limited Commercial development;
- 1 times lot area for Neighborhood-Oriented Commercial development;
- 1.5 times lot area for all industrial development;
- 3 times lot area for Community Commercial development, which is limited to land currently owned by three hospitals in the medical center at the intersection of Sunset Boulevard and Vermont Avenue.



PLAN DESIGNATION	PERMITTED FLOOR AREA	CORRESPONDNG ZONING
LIMITED COMMERCIAL	0.5 x BUILDABLE AREA	CR, C1, C1.5, P
HIGHWAY ORIENTED	0.5xLOT AREA	C1, C2, P
NEIGHBORHOOD ORIENTED	1.0xLOT AREA	C1, C4, C2, P
COMMUNITY COMMERCIAL	3.0xLOT AREA	CR, C4, C2, P, PB
INDUSTRIAL	1.5xLOT AREA	CM, MR1, M1, P, PB
PARK/SCHOOL/OPEN SPACE		

Figure 4

PROPOSED PLAN:
NON-RESIDENTIAL USES

HOLLYWOOD COMMUNITY PLAN REVISION

0 800 1600 3200

GRUEN ASSOCIATES

CITY OF LOS ANGELES

TABLE 2
HOLLYWOOD GROWTH PROJECTIONS /a/

	1987	Additional	Build-out
Housing Units			
Redevelopment Area	16,000	+13,000	29,000
Revision Area	81,000	+12,000	93,000
Total	97,000	+25,000	122,300
Population			
Redevelopment Area	34,000	+39,000	73,000
Revision Area	170,000	+29,000	199,000
Total	204,000	+68,000	272 000
Commercial Development in Millions of Square Feet			
Redevelopment Area	12	+22	34/b/
Revision Area	12	+ 7	19
Total	24	+29	53
Industrial Development in Millions of Square Feet			
Redevelopment Area	3	+ 2	5
Revision Area	5	+ 7	12
Total	8	+ 9	17

/a/ Redevelopment Area statistics are based on the adopted Redevelopment Plan. All other figures are estimates prepared by Gruen Associates.

/b/ Assumes "practical build-out" as defined by the Community Redevelopment Agency (CRA). The underlying assumptions are: 1)Redevelopment would occur if a) the existing number of residential units is 50 percent or less than permitted by the Redevelopment Plan, or b) the existing commercial square footage is 25 percent or less than the potential build-out permitted by the Redevelopment Plan, or c) the existing industrial square footage is 25 percent or less than the potential build-out permitted by the Redevelopment Plan, and d) the existing building is substantially deteriorated and e) the existing development is not in conformance with the Redevelopment Plan. 2)Redevelopment would not occur if a) the existing buildings are of historical or architectural significance, or b) the existing use is open space, recreation, public, quasi-public or institutional.

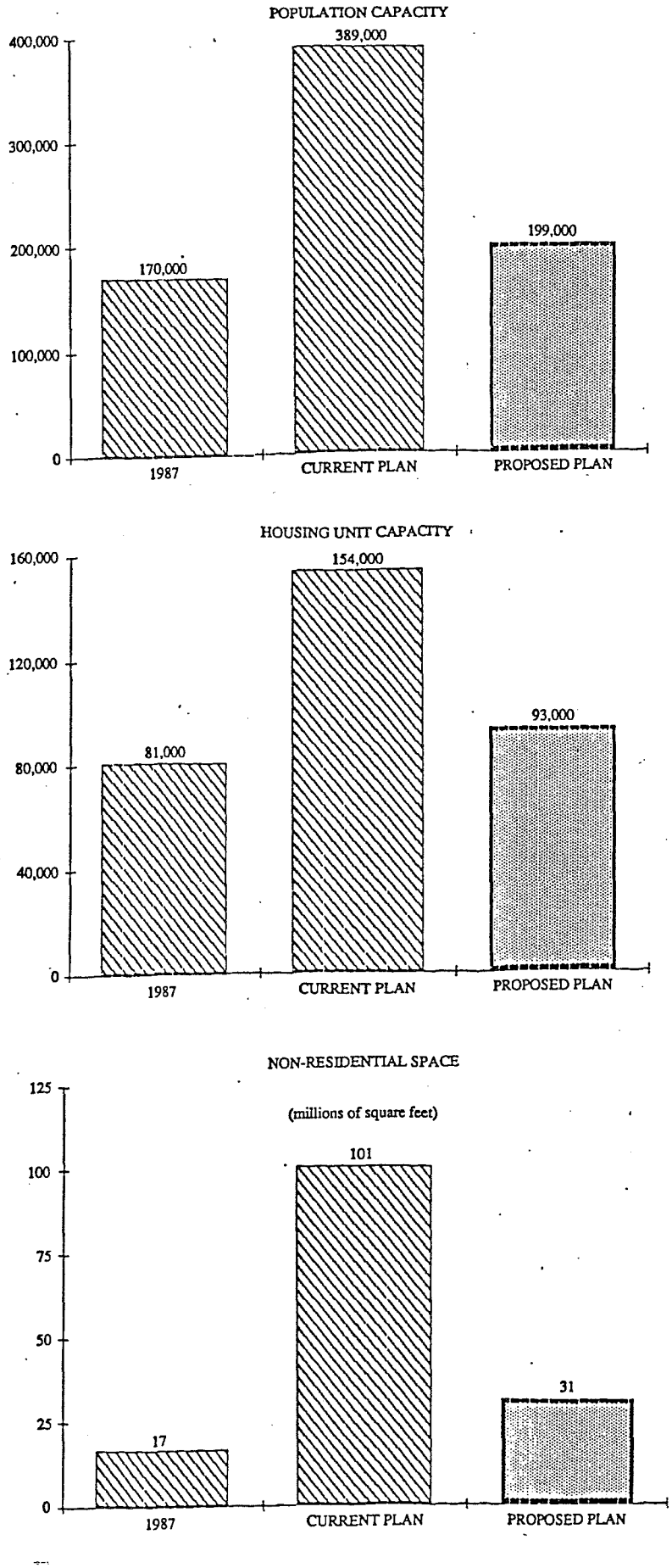


Figure 5

COMPARISON OF HOLLYWOOD COMMUNITY PLAN DEVELOPMENT CAPACITY

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES:

The following paragraphs summarize the key findings of the environmental report prepared for the Hollywood Community Plan Revision. It should be recognized at the outset that the purpose of the Plan Revision has been to eliminate and/or mitigate the adverse effects on transportation, public services and infrastructure that have resulted from development that has occurred under the Current Hollywood Community Plan, adopted by the City Council 15 years ago.

Land Use:

Impact

- Development potentials for all land uses are scaled back under the Proposed Plan revision. Residential land uses are limited to be consistent with the year 2010 population projection prepared by the Southern California Association of Governments (SCAG). Commercial, office and industrial development potentials, the source of the bulk of the traffic generation in the Plan area, are set at reduced densities that will allow the Plan area roadway system to function at acceptable levels of service.

- The Proposed Plan establishes residential development densities that reflect existing conditions and allow for in-fill housing growth to attain the SCAG forecast. Very High and High residential density categories are eliminated (outside of the Redevelopment Plan area) and the majority of the residential use is shifted into mid-range density categories such as Medium and Low Medium.

- The Proposed Plan (Revision Area only) would provide for a population capacity of 199,000 persons. This would be a 17 percent increase from existing levels and a 49 percent decrease in the build-out capacity of the Current Community Plan. Non-residential densities are similarly reduced. The Proposed Plan would provide for 31 million square feet (not including the Redevelopment Area). This would be a 82 percent increase over existing levels but a 69 percent decrease from build-out of the Current Plan.

Mitigation:

- Implementation of a Transportation Specific Plan, transportation and circulation improvements, as well as development standards to ensure that land use capacity and transportation service are in balance and that land use conflicts and incompatibilities are minimized.

Net Effect After Mitigation:

- The net effect of the proposed action would be to "down zone" property, to reduce the incentive to redevelop in residential areas, and to provide small scale neighborhood-oriented commercial developments.

Population and Housing

Impact:

- Changes in land use density in the revision area would provide for the addition of approximately 10,000 housing units or about 30,000 persons.
- The Proposed Plan would result in a single family and multiple-family unit distribution similar to existing conditions, i.e. 20 percent single-family and 80 percent multi-family. The Current Plan would result in 10 percent single-family, 90 percent multi-family split.
- Given the potential population capacity and employment capacity, the Proposed Plan would result in a employment to population ratio of 0.59. According to SCAG criteria this ratio reflects an "employment rich" condition and would slightly exceed the 0.55 ratio considered to be indicative of a jobs-housing balance.

Mitigation:

- Non-residential development levels in either the revision area or the redevelopment area should be reduced to achieve a better a jobs-housing balance in the Community Plan area.

Net Effect After Mitigation:

- Jobs-Housing balance within Hollywood Community Plan area.

Transportation and Circulation

Impact:

- The Proposed Plan would increase evening peak period trips in the Plan area by 48 percent. In comparison, the Current Plan would increase trips by 209 percent.
- With the Proposed Plan, 28 of the 39 intersections studied would operate at Level of Service F during the evening peak hour. In comparison, 36 intersections would operate at LOS F due to the Current Plan.

Mitigation:

- Prepare a Transportation Specific Plan to Implement operational and physical improvements in the Plan area, including: ATSAC, peak period parking restrictions, one-way couplets, reversible lane operations, street widening, jog eliminations, and localized intersection improvements.

- Transportation Systems Management and Transportation Demand Management plans should be developed and implemented for large scale commercial developments and employers in the Community Plan area.

- Future office development in the Redevelopment Area should be limited to a level similar to that contained in the Redevelopment Project EIR's 20-year market-based forecasts, at least until steps are taken to implement major street system improvements in excess of improvements feasible within existing rights-of-way.

Net Effect After Mitigation:

- Transportation service would be improved. With operational and physical improvements, 11 of the 39 studied intersections would operate at LOS F. With street widening consistent with the standards and classifications in the Circulation Element, 13 of the 39 intersections would operate at LOS F.

Aesthetics and Urban Design

Impacts:

- The Proposed Plan can only directly regulate general land use, residential density, and non-residential development intensity. If development occurs without the imposition of development standards and transportation system improvements, then future development (while at lower development intensities) will look much like recent development. The visual and functional quality of the Hollywood environment will continue to decline.

Mitigation:

- Programs and development standards should be implemented through inclusion in the Zoning Code or other enforceable means. These actions should include as a minimum:

  - Preservation of historically and architecturally significant neighborhoods through Specific Plans or the Historic Preservation Overlay Zone (HPOZ).
  - Development Standards for all land uses addressing street trees.
  - Commercial Development Standards (parking, screening, landscaping, access, etc.)
  - Residential Development Standards, addressing hillside areas and multi-family housing (setbacks, lot coverage, dedications, open space, etc.).
  - Neighborhood Plans and Improvement Districts. The Proposed Plan should allow for specific standards on a neighborhood basis for both commercial and residential areas.

Net Effect After Mitigation:

- Preservation and enhancement of neighborhood environmental quality in Hollywood.

Public Services

Impact:

- Schools - The Proposed Plan would generate a 13 percent increase in students. In comparison, the Current Plan would generate a 114 percent increase in students.
- Parks - The Proposed Plan would require 540 acres of parkland to meet City standards. This is 2.7 times more parkland than is currently provided. In comparison, the Current Plan would require more than 900 acres of parkland.
- Fire Protection - The Proposed Plan would result in increased demand. Under the Proposed Plan the hillside areas would continue to develop and a be a source of continuing concern to the Fire Department.
- Police Service - The Proposed Plan would result in increased demand. To maintain typical citywide ratios of police personnel to population, a 17 percent increase in personnel would be needed to accommodate the Proposed Plan population capacity. The Current Plan would require a 135 percent increase in personnel.
- Libraries - No adverse impacts anticipated.

Mitigation

- Schools - Expand facilities on current sites. Allow residential development only in areas where there is remaining enrollment capacity.
- Parks - Provide neighborhood-oriented recreation at Griffith Park. Use school yards. Develop pocket parks. Require dedication of usable open space as part of new residential developments.
- Fire Protection - Compliance with all applicable State and local codes and ordinances, and the guidelines found in the Fire Protection and Fire Prevention Plan.
- Police Service - Over the life of the plan, assign additional personnel consistent with Police Department policy and budgetary constraints.
- Libraries - No mitigation required.

Net Effect After Mitigation

- Schools - Unavoidable adverse effect anticipated.
- Parks - Unavoidable adverse effect anticipated.
- Fire Protection - Acceptable level of service provided.
- Police Service - Acceptable level of service provided.

Air Quality

Impact:

- Short-term construction-related emissions anticipated on a project basis.
- Long-term increase in stationary emissions.
- Long-term increase in vehicular emissions. For carbon monoxide, the Proposed Plan would result in 57 percent reduction in potential emissions when compared to the Current Plan.

Mitigation:

- Construction-related emissions to be reduced through implementation of dust control measures such as wetting.
- Implementation of the Transportation Specific Plan discussed above.

Net Effect After Mitigation:

- Although emissions would increase above existing levels due to the Proposed Plan, the Proposed Plan would represent a significant reduction in potential development and associated trip generation in the Community Plan area and would have a beneficial impact.

Noise

Impact:

- On an intermittent short-term basis, construction-related noise would occur.
- With the Proposed Plan, traffic-related noise levels would exceed City standards at 22 of the 28 locations studied. In comparison, the Current Plan would result in unacceptable noise at 27 of the 28 locations studied.

Mitigation:

- On a project basis, construction related activities should be limited to daytime hours. These activities should comply with the provisions of City Ordinance No. 144,331. Construction equipment should be properly fitted with noise attenuation devices.

- Development standards for residential should address site plans and building layouts to minimize noise impacts.

- For stationary noise sources, adjacent properties should be adequately buffered, including use of walls and earth berms.

Net Effect After Mitigation:

- Construction-related noise would be reduced to acceptable levels.
- For existing residential development, adjacent to major and secondary roads, noise impacts may not be mitigated and would result in unavoidable adverse effects. For new residential development, site plan design and development standards would substantially reduce noise impacts.

Energy and Utilities

Impact:

- Sewer/Wastewater - Compared to existing levels, the Proposed Plan would increase wastewater generation by 5 million gallons/day (mgd) at build-out (a 22 percent increase). This would place an additional demand on the Hyperion Treatment Plant and on the local sewer system. The Current Plan would result in an increase of 39 mgd (a 167 percent increase).

- Solid Waste - At build-out, the Proposed Plan would produce 447 tons of solid waste per day (a 25 percent increase over existing generation). Housing and commercial/industrial growth permitted by the Proposed Plan would contribute to the use of remaining landfill capacity in Los Angles County. Build-out of the Current Plan would produce 803 tons of solid waste/day.

- Electrical Power - The Proposed Plan would increase electrical demand to 971 million kilowatt hours annually (a 37 percent increase over existing consumption). In comparison, the Current Plan would result in the consumption of 2.5 billion kilowatt hours annually.

- Water Supply - The Proposed Plan would increase water consumption to 25 mgd (a 22 percent increase above existing levels). The rate of increase in water use is higher for the Community Plan area than the consumption growth forecast by the Department of Water and Power citywide. The Current Plan would result in the consumption of 59 mgd.

- Natural Gas - The Proposed Plan would result in the consumption of 5.9 billion cubic feet (a 19 percent increase over existing consumption). The Current Plan would result in the consumption of 11.5 billion cubic feet.

Mitigation

- Energy - Compliance with conservation requirements contained in the California Administrative Code, Title 24, Building Standards.

- Sewers/Wastewater - Development should be permitted when phased with improvements in the local sewer system, as well as programmed improvements at the Hyperion Treatment Plant. Phasing of development should be undertaken for all communities within the Hyperion service area. Similar to the Proposed Plan, population holding capacities in each area should be consistent with SCAG growth forecast.

- Solid Waste - The Proposed Plan should encourage a variety of waste reduction techniques. These, as a minimum, will include separation, recycling and composting. Growth in the Plan area must also be tied directly to Citywide and Countywide Solid Waste Management Plans, where development will need to be kept in balance with available landfill capacity in combination with other solid waste disposal technologies. According to the most recent assessment of solid waste needs by the Bureau of Sanitation and the County Department of Public Works(1/88), available landfill capacity in the City of Los Angeles will be exhausted in 1997 and countywide there will be significant shortfalls by 1992. Thus, mitigation of plan area solid waste impacts must address new landfills or alternatives.

- Water Supply - The Proposed Plan should encourage the use of water conservation measures consistent with the Department of Water and Power's Urban Water Management Plan.

- Electricity and Natural Gas - No mitigation required.

Net Effect After Mitigation

- Energy and utilities impacts would be reduced but not eliminated. Impacts on Hyperion will only be reduced if coordinated with a citywide phasing of development to match improvements in treatment capacity.

Earth

Impact:

- Regardless of the land use plan implemented, there will be a continued risk of human injury and property damage because of potential regional earthquakes. The elimination of high density residential categories in the Proposed Plan would contribute to minimizing the degree of risk.

- Continued development in the hillside areas will raise concerns regarding grading practices and landslide potential.

Mitigation:

- Compliance with the Seismic Safety Element and other City Building Code requirements regarding earth moving and grading.

- Require that all projects use the practices identified in the Department of City Planning's "Planning Guidelines Grading Manual."

Drainage

Impact:

- The Proposed Plan would continue to permit hillside development. As a result, there would be some increase in impervious surfaces and a consequent increase in stormwater runoff.

Mitigation:

- On a project basis, compliance with provisions of the Flood Hazard Management Specific Plan and any additional requirements identified by the Bureau of Engineering.

Net Effect After Mitigation:

- Impacts reduced to acceptable levels.

Natural Resources

Impact:

- No impacts anticipated.

Plant and Animal Life

Impact:

- The Proposed Plan would continue to permit hillside development, and as a result undeveloped and natural areas containing local habitat would be removed.

Mitigation:

- Compliance with grading regulations and use of "unitized" grading procedures to reduce impacts on remaining natural areas.

Net Effect After Mitigation:

- Unavoidable adverse effect on hillside habitat areas.

Historic and Cultural Resources

Impact:

- The Proposed Plan revision cannot directly address the preservation of cultural resources. The Proposed Plan does, however, scale back development potentials to reduce the incentive to redevelop historic and cultural resource properties.

Mitigation:

- An historic and architectural survey of the Plan revision area should be prepared. Based on the findings of the survey, specific plans and/or Historic Preservation Overlay Zones should be adopted. Also, the designation of individual structures as Cultural-Historical Monuments through the Cultural Heritage Commission should sought.

Net Effect After Mitigation:

- Preservation of neighborhoods and buildings that have contributed to the overall character and uniqueness of the Hollywood Community Plan area.

UNAVOIDABLE ADVERSE EFFECTS:

The Proposed Plan would result in environmental impacts which cannot be fully mitigated. In general, these unavoidable impacts consist of:

- The potential for residential and commercial displacement resulting from the redevelopment of properties to higher densities.
- The potential for loss of historically significant buildings or areas resulting from the redevelopment of properties to higher densities.
- Increased demand on schools.
- Inability to satisfy the City's parkland-to-population criteria.
- Traffic delays and congestion.
- Traffic-related noise levels adjacent to major and secondary highways in excess of City standards.
- Continued hillside development, including the removal of natural areas and the alteration of existing views and vistas.
- Increased use of extremely limited landfill resources for solid waste disposal.

LONG-TERM IMPLICATIONS OF THE PROPOSED PROJECT:

A significant portion of the Hollywood Community Plan area includes hillside and canyons in the Hollywood Hills. The 4,108-acre Griffith Park area would not be affected by the Proposed Plan. The Plan does, however, anticipate the continued development of residences in hillside areas. Build-out of development consistent with the densities and land uses allowed in the Hollywood Community Plan would ultimately involve the irreversible commitment of limited resources including energy, water, and land. New development would require the commitment of land to residential, commercial, office and industrial uses. The Proposed Plan would permit the continued development of the Hollywood Hills.

GROWTH-INDUCING IMPACTS OF THE PROPOSED COMMUNITY PLAN REVISION:

The build-out of the Proposed Plan Revision would permit a capacity of approximately 93,000 dwelling units outside of the Redevelopment area, and 31 million square feet of non-residential development. This land use development potential would translate into a population capacity for 199,000 persons and for approximately 65,000 jobs. Compared to existing population and employment (170,00 population and 37,400 employment), this change would represent a 17 percent growth in population and 73 percent growth in employment.

It should be recognized, however, that while the Proposed Plan would allow increases above existing levels, the proposed revision reduces the potential build-out levels permitted by the Current Plan. The population capacity would be reduced from 389,000 persons to 199,000 persons (a reduction of 49 percent) and employment capacity would be reduced from 233,000 jobs to 65,000 jobs (a reduction of 72 percent).

From a regional perspective, the Southern California Association of Governments (SCAG) has indicated that the Hollywood Community Plan area is located within Regional Statistical Area (RSA) No. 17. The 1984 SCAG estimate for the RSA was a population of 1,026,000 persons and 604,500 jobs. Of these totals, the Plan area represents approximately 11 percent of the RSA population and 6 percent of the employment.

SCAG has forecasted that by 2010 there will be 1,181,000 persons in the RSA and 696,600 jobs. The Proposed Plan area population capacity (199,000) would represent 19 percent of the total RSA population, and the Proposed Plan employment capacity of 65,000 jobs would represent 9 percent of the employment in the RSA. These statistics suggest that the population growth in the Plan area is consistent with 2010 regional growth projections and that the employment capacity is slightly higher than the 2010 regional projection.

CUMULATIVE IMPACTS:

This report has evaluated the potential environmental impacts resulting from the maximum build-out of the Hollywood Community Plan Area under the Proposed Revision. No specific projects or development proposals have been considered as part of this analysis; however, evaluation of the Community Plan Revision has been considered in the context of the population, housing, and employment projections prepared by the Southern California Association of Governments for the year 2010. The traffic analysis, in particular, considered the combined effect of locally generated traffic and future regional traffic on the Hollywood Community Plan street network. Specific impacts that would result from the combined effect of the Proposed Plan and growth and development in adjacent community plan areas and jurisdictions would include:

- Negative effect on the Jobs-Housing Balance
- Increased trip making and traffic congestion
- Increased vehicular and stationary emissions
- Increased demand on schools
- Increased demand for parks
- Increased demand for police and fire services
- Increased demand on sewers and treatment capacity at Hyperion.
- Accelerated use of existing landfills
- Increased demand on utilities and energy sources

ALTERNATIVES CONSIDERED

The No Project Alternative: Throughout this report, the Proposed Plan has been directly compared to the No Project Alternative (retaining the Current Hollywood Community Plan). As has been noted, the Current Plan would provide for more population, housing and employment capacity than the Proposed Plan. This assessment shows, however, that neither the existing nor a fully improved transportation network can provide acceptable service at the levels of residential and non-residential development contemplated in the Current Plan. From a neighborhood and historic preservation perspective, the Current Plan would raise the potential for redevelopment to higher densities, and, as a result, neighborhood and historic resources would likely be lost. With respect to other public services and facilities, the substantial growth above existing levels permitted by the Current Plan would generate severe demands and pressures.

Non-Residential Alternative 1: The transportation section of this report fully documents an evaluation of the impacts of permitting existing non-residential development to develop to a floor to lot area ratio of 1.5:1 (called Alternative 1). In this regard, the transportation analysis demonstrates that this alternative is also unworkable. Trips generated by this level of development cannot be accommodated by the local street system, even with operational and capacity improvements.

Non-Residential Alternative 3: This alternative would remove non-conforming commercial and industrial uses and would allow residential development in these areas as originally designated in the Current Hollywood Community Plan. This alternative, however, would not reduce the total permitted commercial/industrial development in the Plan area. As a result, it would not substantially reduce traffic and circulation impacts. In addition, this alternative would impose substantial hardships on many businesses that serve the community. Most of the commercial areas that would be eliminated (like the Hillhurst, Fountain, Laurel Canyon and Melrose shopping areas) provide valuable services to nearby residents. The alternative would also be contrary to the objective of providing commercial services that are easily accessible to residents.

Residential Alternatives: Several alternatives for distributing additional residential development were considered, including concentrating development around future Metro Rail stations or adjacent to neighborhood centers. These options were not considered further because the greater amount of residential development could not be reconciled with two basic plan revision objectives: 1) accommodate only year 2010 population growth plus a 10 to 15 percent buffer, and 2) create cohesive neighborhoods by permitting only enough new housing to provide an overall uniformity of building types, compatible with existing residences.

No Growth Alternative: The purpose of the plan revision process was to establish a means to accommodate growth levels projected in the SCAG-82 population forecast. An alternative to consider less growth than the adopted forecast was not considered.

COMPARISON OF ALTERNATIVES:

The No Project Alternative (Current Plan) would allow for a population and housing capacity substantially greater the Proposed Plan. It should be recognized that the Current Plan would permit development that would greatly exceed the SCAG year 2010 population projections for the Hollywood Community Plan area. Non-residential alternatives 1 and 3 would also permit development of commercial, office and industrial development levels greater than the Proposed Plan. This additional permitted growth must be weighed, however, against the findings of this report that demonstrate that the arterial and street system in Hollywood (even when improved to Community Plan standards) cannot accommodate substantial new trips, particularly commercial/office/industrial-related trips.

The added growth potentials of the Current Plan would also negatively contribute to impacts on public services and facilities, particularly schools, parks, sewer treatment capacity and landfill capacity. The greater number of vehicle trips potentially generated by the Current Plan or the non-residential alternatives along with attendant increases in congestion and delays would result in substantially greater air pollution emissions than the Proposed Plan.

From a land use perspective, any alternative should be accompanied by the adoption of development standards for residential and commercial areas in Hollywood. Without consideration of the mitigation effects of development standards, the Current Plan would continue to allow a level of development, particularly high density residential and office/commercial projects, that could foster land use conflicts and incompatibility, including parking conflicts, height conflicts, shade/shadow effects, obstruction of views and vistas and other potential nuisances. The Proposed Plan which has focused largely on matching existing densities and preserving the existing character of areas would minimize adverse land use impacts. Also the Proposed Plan, by scaling back development levels to match existing levels, reduces the incentive to redevelop. This effect is a particular benefit to historic properties and areas. In contrast, the higher development potential of the Current Plan or the other non-residential alternatives would provide incentives to redevelop historic resources. Thus, from both the perspective of transportation and land use, the Proposed Plan is environmentally superior to alternatives that would allow greater amounts of development.

When compared to a No Growth option, the Proposed Plan is not environmentally superior due to the fact that there would be some increase in development potential over existing levels. Current environmental problems (traffic-related air pollution, for example) would be exacerbated. It should be recognized, however, that an alternative to limit growth to existing levels, if not enacted citywide, would simply channel development to other parts of the city or county where there is less restriction and any adverse impacts would be shifted to other areas.

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EXHIBIT 28

American Lung Association.
State of the Air

2020

State of the Air

In Memoriam

This report is dedicated to Janice E. Nolen,
the leading force behind the history of this report and
a tireless champion of lung health and healthy air.

Acknowledgments

The American Lung Association "State of the Air® 2020" is the result of the hard work of many people:

To produce the national report: Deb Brown, who leads the Mission Team; Paul G. Billings, who supervised the work; Janice E. Nolen, M.A., who directed the project, analyzed data, wrote the text and coordinated print and web presentations; Kevin M. Stewart, who assisted in the data analysis, writing and coordination of the report content and metro area assessments; Laura Kate Bender, Diana Van Vleet, Ronni Flannery and Liz Mueller, who integrated the Healthy Air Campaign with this report; Will Barrett, who compiled material for metro area assessments; Zach Jump, M.A., who converted the raw data into meaningful tables and comparisons and calculated all the population data; Susan Rappaport, M.P.H., who supervised the data analysis; John Balmes, M.D., who reviewed the science and health discussions; Neil Ballentine, who directed the online presentation; Todd Nimirowski, who designed and created the user experiences online; Lauren Innocenzi and Shanna Johnson, who managed content production online; Laura Lavelle, Carrie Emge and Elexis Rodgers, who developed the social sharing and digital engagement strategy; Julia Fitzgerald, Kim Lacina, Allison MacMunn, Stephanie Goldina, Gregg Tubbs and Erin Meyer, who coordinated internal and external communications and media outreach; Michael Albiero, who designed the logo and report cover; and Craig Finstad, who coordinated sharing the data with direct-mail donors.

For state-level outreach: Michael Seilback and Lance Boucher coordinated work with the state staff across the nation. Staff contacted state and local air directors to ensure that they were informed and had a chance to review the draft data.

Outside the American Lung Association: Allen S. Lefohn of A.S.L. and Associates, who compiled the data; Beaconfire RED Consulting, who uploaded the data to the website; and Our Designs, Inc., who designed the print version.

Great appreciation goes to the National Association of Clean Air Agencies who strove to make this report better through their comments, review and concerns. Many of their members reviewed and commented on the individual state data presented and the methodology to make this report more accurate. We also appreciate the assistance of the Association of Air Pollution Control Agencies, whose members also assisted in the review of the data from their states. We appreciate them as our partners in the fight against air pollution. This report should in no way be construed as a comment on the work any of these agencies do.

The American Lung Association assumes sole responsibility for the content of the American Lung Association "State of the Air® 2020."

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Designed by Our Designs, Inc., Nashville, TN

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The State of the Air 2020

The "State of the Air" 2020 found that, in 2016-2018, more cities had high days of ozone and short-term particle pollution compared to 2015-2017 and many cities measured increased levels of year-round particle pollution.

2020 marks the 50th anniversary of the Clean Air Act, the landmark law that has driven dramatic improvements in air quality over its history. This is critical because far too many communities reported air pollution that still threatens health, and climate change impacts continue to threaten to progress. Further, harmful revisions and setbacks to key protections currently in place or required under the Act threaten to make air quality even worse in parts of the country. "State of the Air" 2020 shows that we must not take the Clean Air Act for granted.

Too many cities across the nation experienced more ozone and more particle pollution in 2016-2018. Many reached or tied their highest levels ever.

The "State of the Air" 2020 report shows that too many cities across the nation increased the number of days when particle pollution, often called "soot," soared to often record-breaking levels. More cities suffered from higher numbers of days when ground-level ozone, also known as "smog," reached unhealthy levels. Many cities saw their year-round levels of particle pollution increase as well.

The "State of the Air" 2020 report adds to the evidence that a changing climate is making it harder to protect human health. The three years covered in this report ranked among the five hottest years on record globally. High ozone days and spikes in particle pollution followed, putting millions more people at risk and adding challenges to the work cities are doing across the nation to clean up.

The 2020 report—the 21st annual release—uses the most recent quality-assured air pollution data, collected by the federal, state and local governments and tribes in 2016, 2017 and 2018. The "State of the Air" 2020 report looks at levels of ozone and particle pollution found at official monitoring sites across the United States in those years. For comparison, the "State of the Air" 2019 report covered data from 2015, 2016 and 2017.

The report examines fine particle pollution (particulate matter smaller than 2.5 microns in diameter, also known as $PM_{2.5}$) in two separate ways: averaged year-round (annual average) and short-term levels (24-hour). For both ozone and short-term particle pollution, the analysis uses a weighted average number of days that allows recognition of places with higher levels of pollution. For the year-round particle pollution rankings, the report uses averages calculated and reported by the U.S. Environmental Protection Agency (EPA). (The full "State of the Air" 2020 methodology is included in a later chapter.)

Overall Trends

The "State of the Air" 2020 found that, in 2016-2018, millions more Americans were living in communities impacted by unhealthy levels of pollution in the form of more unhealthy ozone days, more particle pollution days and higher annual particle levels than was found in previous reports.

Nearly five in ten people—150 million Americans or approximately 45.8 percent of the population—live in counties with unhealthy ozone or particle pollution (with at least one F). That represents an increase from the past three reports: it's higher than the 141.1 million in the 2019 report (covering 2015-2017), 133.9 million in the 2018 report (covering 2014-2016) and 125 million in the 2017 report (covering 2013-2015). **More than 20.8 million people, or 6.4 percent of the population, live in the 14 counties that failed all three measures.**

Nearly five in 10 people live where the air is unhealthy.

Los Angeles remains the city with the worst ozone pollution in the nation, as it has been for 20 years of the 21-year history of the report. **Bakersfield, CA,** returned to the most-polluted slot for year-round particle pollution, while **Fresno-Madera-Hanford, CA,** returned to its rank as the city with the worst short-term particle pollution.

This shows growing evidence that a changing climate is making it harder to protect human health. All three years ranked among the five hottest years in history, increasing

high ozone days and widespread wildfires, putting millions more people at risk and adding challenges to the work cities are doing across the nation to clean up. Rollbacks of EPA cleanup rules and reduced Clean Air Act enforcement are further adding to these air quality challenges.

This marks the fourth report in a row that worsening air quality threatened the health of more people, despite other protective measures being in place. Climate change clearly drives the conditions that increase these pollutants. The nation must do more to address climate change and to protect communities from these growing risks to public health.

The Clean Air Act must remain intact and enforced to enable the nation to continue working to protect all Americans from the dangers of air pollution. As the nation celebrates the 50th anniversary of the Clean Air Act this year and the dramatic improvements in air quality over its history, everyone must ensure that the Clean Air Act's tools remain in place, funded and followed in order to protect the public.

The Lung Association will continue to champion the Clean Air Act and push for clean air for all, defending Americans against proposals to reverse and reduce protections in place and supporting new efforts to curb harmful pollution.

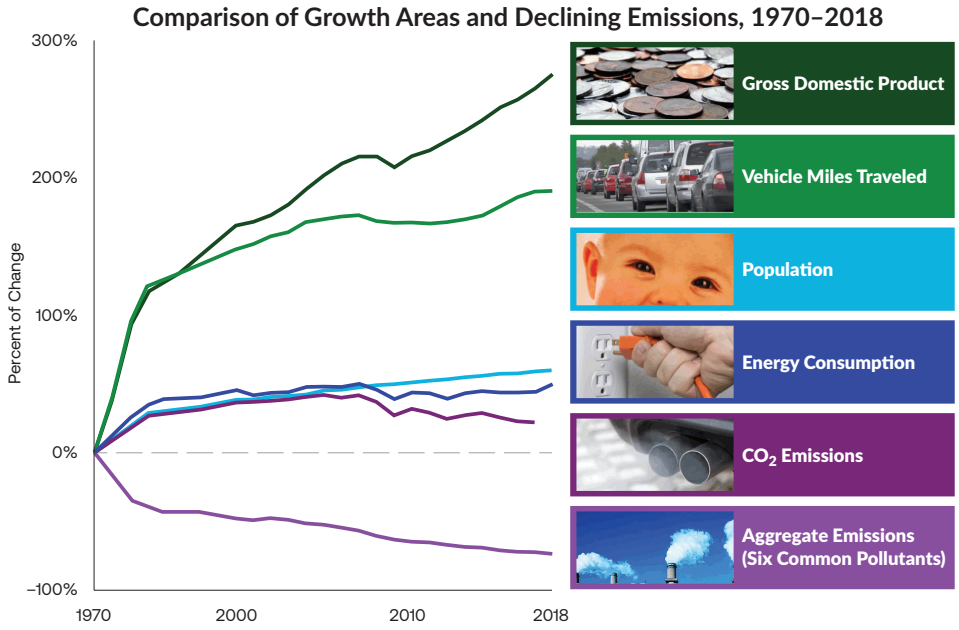

Figure 1: Air pollution emissions have dropped steadily since 1970 thanks to the Clean Air Act. Source: U.S. EPA, Air Trends: Air Quality National Summary, 2019.

Ozone Pollution

Far more people suffered unhealthy ozone pollution in 2016-2018 than in the last three reports. In 2016-2018, more than 137 million people lived in the 205 counties that earned an F for ozone.

That is significantly higher than in the 2019, 2018 and 2017 reports and is the highest since the 2016 report. This trend shows strong evidence of the impacts on air quality from the warmer years also reported in this period. Of the ten most polluted cities, six did worse than in the 2019 report, including some of the nation's largest metropolitan areas.

Why? Increased heat. The three years in this report were three of the five warmest on record in the United States: the year 2016 remains the warmest year on record, while 2017 is now the fourth warmest, and 2018 ranked fifth warmest. Warmer temperatures make ozone more likely to form and harder to clean up.

Changes in where ozone is worst in the U.S. continue a trend seen in the past four reports, where increased oil and gas extraction in the Southwest and cleanup of power plants in the eastern U.S. have shifted the cities that experienced the greatest number of unhealthy air days.

Ozone rankings are all based on unhealthy air days as recorded using the Air Quality Index adopted with the 2015 national air quality standard for ozone. In 2018, EPA officially designated all or parts of the 25 most polluted cities as "nonattainment" areas for that ozone air quality standard. That action requires these areas to take steps to clean up the sources of pollution going forward.

Los Angeles remains at the top of the list of most polluted cities for ozone, as it has been for all but one of the 21 reports, despite the metro area's continued fight against ozone. Los Angeles-Long Beach also recorded more unhealthy ozone days in this report, measured by weighted average.

In addition to Los Angeles, 13 others among the 25 cities with the worst ozone pollution each had a higher weighted average of unhealthy days in 2016-2018, including some of the nation's largest metropolitan areas: Phoenix, Las Vegas, Denver, Salt Lake City, Chicago and Milwaukee. Many smaller cities on that list also suffered from more ozone: Visalia, CA; Bakersfield, CA; El Centro, CA; El Paso-Las Cruces, TX-NM; Chico, CA; Fort Collins, CO; and Sheboygan, WI.

Eleven of the 25 cities with the worst ozone pollution had fewer unhealthy ozone days on average in 2016-2018. Those included San Jose-San Francisco-Oakland and Dallas-Fort Worth, each of which reached its fewest unhealthy ozone days ever. Other cities that had fewer high-ozone days included Fresno; Sacramento; San Diego; New York-Newark; Redding-Red Bluff, CA; Houston; Washington-Baltimore; Philadelphia; and Hartford, CT.

Regional Differences. Only seven cities among the worst for ozone are east of the Mississippi River, including the New York City metro area, where Fairfield County, CT, suffers from the highest levels in the eastern U.S. Others in the Northeast and Mid-Atlantic in the 25 most-polluted list are Washington-Baltimore; Philadelphia; and Hartford, CT. The Midwest has three: Chicago; Sheboygan, WI and Milwaukee. For the first time, with Atlanta's improvement, no city in the Southeast has any city on the most-ozone-polluted list.

Cities in the West and the Southwest continue to dominate the most-ozone-polluted list. California retains its historic distinction, as it is home to 10 of the 25 most polluted cities. The Southwest continues to fill most of the remaining slots, with eight of the 25 cities, including three in Texas—Houston, El Paso, and Dallas-Fort Worth. Colorado has two—Denver and Fort Collins. Arizona, Nevada and Utah each have one.

The findings show the continued impact of transported pollution that moves ozone and ozone precursors across state lines. For example, emissions generated in Chicago cross Lake Michigan to reach Sheboygan, WI. Fairfield County, CT, remains the county with the highest ozone in the eastern half of the nation because of the transported ozone and ozone precursors from upwind states.

Short-Term Particle Pollution

More cities experienced more days of spikes in particle pollution, compared to the 2019 report. Twenty-two of the 25 most polluted cities had more such days on average in the 2020 report. Many cities reached their highest number of such days ever reported.

More people experienced unhealthy spikes in particle pollution than in the last three reports. More than 53.3 million people suffered those episodes of unhealthy spikes in 86 counties where they live. In the 2019 report, the total was approximately 49.6 million people who experienced too many unhealthy days; in the 2018 report, approximately 35.1 million people; and in the 2017 report, approximately 43 million people.

Why? Wildfires in 2017 and 2018, especially in California, were a main reason for many of these spikes. In the western U.S., climate change has made more likely the conditions of heat and drought that promote wildfire hazards. In some communities, wood smoke from home heating, especially when worsened by stagnant air masses known as inversions, has also contributed to high levels of particle pollution.

Nine of the ten most polluted cities had more days when particle pollution reached unhealthy levels; four of those reached their worst exposure ever recorded. Of the 25 most polluted cities, 22 had more days on average in this year's report, with nine cities reaching their highest number of days on average ever recorded.

Fresno-Madera-Hanford, CA, returns to rank as the #1 most polluted city for short-term particle levels. This marks the third time Fresno-Madera-Hanford has ranked at the top in this category; the last period was from 2011-2013, covered in the 2015 report. Bakersfield, which had been ranked in that spot for eight of the last ten reports, shifted to the 2nd most polluted city.

Nine cities had their highest-ever weighted average number of days with spikes in particle levels: Fairbanks, AK; Yakima, WA; Redding-Red Bluff, CA; Phoenix, AZ; Spokane-Spokane Valley-Coeur d'Alene, WA-ID; Chico, CA; Salinas, CA; Santa Maria-Santa Barbara, CA; and Las Vegas, NV.

Just as people move around, so too does harmful pollution. Wildfire smoke is just one example of pollution threatening health far from the source.

Showing the impact of wildfires, this year's report marks the second year that Santa Maria-Santa Barbara, CA, showed up on the list of the most polluted for short-term particle pollution. Prior to the 2019 report, this city had been on the list of cleanest cities in the nation for the previous six years for the same pollutant.

Twelve other cities on the most-polluted list also suffered from more days with unhealthy levels of particle pollution. These include Bakersfield; San Jose-San Francisco; Los Angeles; Salt Lake City, UT; Sacramento; Visalia, CA; Logan, UT; Medford-Grants Pass, OR; El Centro, CA; Eugene, OR; Reno, NV; and Portland, OR.

Only three of the 25 most polluted cities improved and had fewer unhealthy air days on average than in the 2019 report. Though it improved from its worst performance in last year's report, Missoula, MT, remained among the nation's 10 most polluted cities. Two other cities on the list had fewer unhealthy days on average: Seattle and Pittsburgh.

In California, Montana, Oregon and Washington, extended wildfires increased the days when PM levels spiked during 2016-2018. The Los Angeles metro area had two days when levels spiked to "hazardous," the highest, "maroon" level in the Air Quality Index. The Chico, CA, metro area also recorded two hazardous days in Butte County, reaching its highest ever short-term weighted average. Eugene, OR, and rural counties Mendocino County, CA, Okanagan County, WA and Gallatin County, MT, each reached one hazardous day.

Wildfires are not the only source of high particle pollution days. Other contributing sources include wood stove use (especially in Fairbanks, AK), older diesel vehicles and equipment, and industrial sources (as in Pittsburgh, PA). Changes in weather patterns can create atmospheric inversions that trap particles in place, leading to days with spikes.

Pittsburgh is the only city in the 25 most polluted that is east of the Mississippi River.

Year-Round Particle Pollution

This year saw mixed results in terms of annual particle levels among the 26 most polluted cities in the United States: 13 of these cities saw increased particle levels; 11 cities improved; one was not included in last year's report; and one maintained the same levels as last year's report. Nine cities among the most polluted achieved their lowest ever annual particle levels. (The list of most polluted cities for annual particle pollution contains 26 cities instead of 25 due to a tie for 25th place.)

More people live in areas with unhealthy year-round particle pollution than in last year's report. More than 21.2 million people live in 19 counties where the annual average concentration of particle pollution was too high. This is higher than the 20.5 million Americans living in 18 counties in the 2019 report.

Bakersfield, CA returned to the rank of most polluted city for year-round particle pollution in 2016-2018. As with the short-term particle category, Bakersfield and Fresno also swapped rankings for annual particle pollution levels. Bakersfield returns to #1 most polluted in the nation while Fresno ranks #2, having tied its lowest annual average.

Thirteen of the 26 cities most polluted year-round by particle pollution saw increases over levels in the 2019 report: Bakersfield, CA; Visalia, CA; San Jose-San Francisco-Oakland, CA; Phoenix, AZ; El Centro, CA; Detroit-Warren-Ann Arbor, MI; McAllen-Edinburgh, TX; Philadelphia-Reading-Camden, PA-NJ-DE-MD; Sacramento-Roseville, CA; Shreveport-Bossier City-Minden, LA; Medford-Grants Pass, OR; Chico, CA and St. Louis-St. Charles-Farmington, MO-IL.

Eleven of the 26 most polluted cities had lower year-round particle levels, of which nine matched (Pittsburgh and Fresno) or newly achieved (Atlanta, Birmingham, Chicago, Cincinnati, Cleveland, Houston, and Indianapolis) their lowest respective averages ever.

Of the remaining two cities among the most polluted in the nation by annual particles, Los Angeles, CA, had the same level as last year, while Brownsville, TX, did not have annual particle pollution data available last year for comparison.

More cities among the most polluted by annual particle levels saw increases than improved in the 2020 report.

Nine cities among the most polluted for annual particle pollution fail to meet the current national air quality standards. However, evidence shows that no threshold exists for harmful effects from particle pollution—that is, that even levels lower than the official standard are not safe to breathe.

Overall, cities in the western U.S. dominate the list, with 15 cities among the 26 most polluted by annual particles. California continues to claim more places on the list than any other state, with six of the ten most polluted, including each of the worst five—and six of the nine cities that fail to achieve the national standard. Fairbanks, Phoenix, Pittsburgh and Detroit are also among the ten most polluted, with only Detroit achieving the national standard. Beyond cities in western states, the remainder of the most particle-polluted cities all meet the standard and are distributed throughout the Midwest, Southeast and Mid-Atlantic regions.

Cities with high power plant emissions as well as local, industrial sources continue to show up on the list, including Pittsburgh; Detroit; Cleveland; Philadelphia; Cincinnati; Birmingham, AL; Indianapolis; Shreveport, LA; and Atlanta.

Fortunately, year-round particle pollution continues to decline across most of the nation, unlike the days with high ozone and high short-term particle pollution.

Because of their high numbers and long duration, western wildfires contributed to some of the elevated annual averages in Western cities. That is especially true in California and Pacific Northwest communities that experienced major wildfire smoke impacts in 2018.

Cleanest Cities

Four cities rank on all three cleanest cities lists for ozone, year-round particle pollution and short-term particle pollution. They had zero high ozone or high particle pollution days and are among the 25 cities with the lowest year-round particle levels. All four repeat their ranking on this list. Listed alphabetically, these cities are:

- Bangor, ME
- Burlington-South Burlington, VT
- Urban Honolulu, HI
- Wilmington, NC

Nine other cities rank among the cleanest cities for both year-round and short-term levels of particle pollution. That means they had no days in the unhealthy level for short-

term particle pollution and are on the list of the cleanest cities for year-round particle pollution. Listed alphabetically below, they are:

- Appleton-Oshkosh-Neenah, WI
- Elmira-Corning, NY
- Gainesville-Lake City, FL
- Grand Island, NE
- Palm Bay-Melbourne-Titusville, FL
- Sioux Falls, SD
- Springfield, MA
- St. George, UT
- Syracuse-Auburn, NY

Seventeen other cities rank among the cleanest for ozone and short-term particle pollution. That means they had no days in the unhealthy level for ozone or for short-term particle pollution. Listed alphabetically below, they are:

- Bowling Green-Glasgow, KY
- Clarksville, TN-KY
- Corpus Christi-Kingsville-Alice, TX
- Fayetteville-Sanford-Lumberton, NC
- Fayetteville-Springdale-Rogers, AR
- Florence, SC
- Fort Smith, AR-OK
- Gadsden, AL
- Houma-Thibodaux, LA
- La Crosse-Onalaska, WI-MN
- Lincoln-Beatrice, NE
- Monroe-Ruston, LA
- Morgantown-Fairmont, WV
- Roanoke, VA
- Springfield, MO
- Tallahassee, FL
- Topeka, KS

Five cities rank on both lists for ozone and year-round particle pollution levels. These cities had no days in the unhealthy level for ozone pollution and are on the list of the cleanest cities for year-round particle pollution. Listed alphabetically below, they are:

- Anchorage, AK
- Bismarck, ND
- Casper, WY
- Duluth, MN-WI
- Salinas, CA

People at Risk

The "State of the Air" 2020 shows that too many people in the United States live where the air is unhealthy for them to breathe.

- **Nearly five in 10 people (45.8 percent) in the United States live in counties with unhealthful levels of either ozone or particle pollution.** Approximately 150 million Americans live in these 257 counties with unhealthful levels of either ozone or short-term or year-round particles.
  - **The number has increased—again.** This year's report found 8.76 million more Americans living in counties with unhealthy air compared to last year's report, and 15.9 million more Americans compared to the 2018 report. Fortunately, the total is still far below the 166 million in the years covered in the 2016 report (2012-2014).
  - **Why? One big reason is climate change.** Warmer weather, different rain patterns and major wildfires all contribute to continued challenges to long-term progress in reducing harmful air pollution under the Clean Air Act.
- **More than four in 10 (41.9 percent) of the people in the United States live in areas with unhealthy levels of ozone pollution.** More than 137 million people live in the 205 counties that earned an F for ozone in this year's report, approximately 3 million more people than in last year's report.
- **Nearly one in six people (16.3 percent) in the United States—more than 53.3 million—live in an area with too many days with unhealthful levels of particle pollution.** More people experienced those unhealthy spikes than in the last three reports. In the 2019 report, approximately 49.6 million people experienced too many unhealthy days; in the 2018 report, approximately 35.1 million people; and in the 2017 report, approximately 43 million people.

- **More than 21.2 million people (6.5 percent) suffered from unhealthy year-round levels of particle pollution in 2016-2018.** These people live in 19 counties where the annual average concentration of particle pollution was too high. This population estimate is higher than the 20.5 million Americans living in 18 counties with unhealthy levels of year-round particle pollution reported in the 2019 report that covered 2015-2017.
- **20.8 million people (6.4 percent) live in 14 counties with unhealthful levels of all three: ozone and short-term and year-round particle pollution in 2016-2018.** This is over 600,000 more people living in the 12 U.S. counties with unhealthy levels for all three measures than in the 2019 report that covered 2015-2017.

Many people are at greater risk because of their age; because they have asthma or other chronic lung disease or cardiovascular disease; because they have ever smoked; because they belong to communities of color or because they have low socioeconomic status. With the risks from airborne pollution being so great, the Lung Association seeks to inform people who may be in danger. The following list identifies the numbers of people in each at-risk group.

- **Older and Younger**—Nearly 22 million adults age 65 and over and 34.2 million children under age 18 live in counties that received an F for at least one pollutant. More than 2.8 million seniors and 5 million children live in counties failing all three tests.
- **Asthma**—2.5 million children and 10.6 million adults with asthma live in counties that received an F for at least one pollutant. More than 316,000 children and nearly 1.4 million adults with asthma live in counties failing all three tests.
- **Chronic Obstructive Pulmonary Disease (COPD)**—Nearly 7 million people with COPD live in counties that received an F for at least one pollutant. More than 750,000 people with COPD live in counties failing all three tests.
- **Lung Cancer**—More than 77,000 people were diagnosed with lung cancer and live in counties that received an F for at least one pollutant. Nearly 8,400 people were diagnosed with lung cancer and live in counties failing all three tests.
- **Cardiovascular Disease**—More than 9.3 million people with cardiovascular diseases live in counties that received an F for at least one pollutant. Over 1 million people live in counties failing all three tests.
- **Poverty**—Evidence shows that people who have low incomes may face higher risk from air pollution. More than 18.7 million people with incomes meeting the federal poverty definition live in counties that received an F for at least one pollutant. More than 3 million people in poverty live in counties failing all three tests.
- **Communities of Color**—Studies have found that Hispanics, Asians, American Indians/Alaska Natives and especially African Americans experienced higher risks of harm, including premature death, from exposure to air pollution. Approximately 74 million people of color live in counties that received at least one failing grade for ozone and/or particle pollution. Over 14 million people of color live in counties that received failing grades on all three measures.
- **People Who Have Ever Smoked**—There is some recent evidence suggesting that people who have a history of smoking are at greater risk of premature death and of lung cancer when subjected to long-term exposure to fine particle pollution. Over 14.3 million Americans who have ever smoked live in counties that received at least one F for particle pollution. Of those, some 5.5 million people live in counties that received failing grades for all three pollutants.

Threats and opportunities for the nation's air quality

After 50 years under the Clean Air Act, the nation has made significant strides in cleaning up harmful air pollution. However, this year's report shows that many communities are still waiting for healthy air, and that climate change poses current and growing threats to the nation's progress. Fully implementing and enforcing the Clean Air Act and addressing climate change requires a strong, coordinated effort on the part of our federal, state, tribal and local leaders, and the need is more urgent than ever.

Unfortunately, in almost every case, the current Administration has continued to attempt to roll back, weaken, or undermine core healthy air protections under the Clean Air Act. Not only has this Administration targeted specific Clean Air Act safeguards for rollbacks, it has also sought to weaken EPA's ability to set future protections. Many of the rollbacks are not yet final and face challenges in court. However, the impacts of some of this Administration's actions could be felt for years to come.

At the same time as the Administration is halting progress or even moving backward on addressing climate change, many members of the U.S. Congress have worked to advance policies to reduce greenhouse gas emissions. This critical work presents real opportunities for cleaning up air pollution and improving lung health. However, some climate proposals actually include provisions that would weaken the Clean Air Act, a tradeoff that could lead to more health harm from air pollution.

Below are key threats and opportunities for the nation's progress toward cleaner, healthier air, plus ways that you can help.

Opportunity: Congressional action on climate change

To protect public health from climate change, the nation needs urgent action in every arena—from the Administration to the U.S. Congress to state, local and tribal governments to the private sector. The Clean Air Act requires EPA to limit greenhouse gases because of the danger they pose to human health. Congressional action is critical too, and climate conversations and ideas have been proliferating on Capitol Hill.

There are many ways Congressional legislation could reduce emissions, like investing further in clean, renewable energy and incentivizing low- and zero-emission cars, buses and trucks. The Lung Association led a Declaration on Climate Change and Health with more than a dozen other leading national health organizations laying out five requirements for climate action. The nation needs climate policies that:

- Adopt science-based targets to prevent climate change above 1.5° C.
- Maximize benefits to health, reducing carbon and methane pollution while at the same time reducing other dangerous emissions from polluting sources.
- Ensure pollution is cleaned up in all communities, including those near polluting sources that have historically borne a disproportionate burden from air pollution.
- Leave the Clean Air Act fully in place. Any policy to address climate change must not weaken or delay the Clean Air Act or the authority that it gives EPA to reduce carbon emissions.
- Ensure communities have the tools and resources to identify, prepare for and adapt to the unique health impacts of climate change in their communities.
    - The nation's public and environmental health systems must have adequate resources to protect communities by identifying, preparing for and responding to the health impacts of climate change.
    - Community leaders must be able to adequately protect those whose health is most at risk, and provide access to uninterrupted, quality health care during and after disasters.

What you can do:

- Urge your members of Congress to support climate action to protect health, including the Climate Change Health Protection and Promotion Act. Take action now.

Congress must make certain that the Clean Air Act remains strong, fully implemented and fully enforced.

Threat 1: Weakening the Clean Air Act

The Clean Air Act remains a strong public health law put in place by an overwhelming bipartisan majority in Congress 50 years ago. Congress wrote the Clean Air Act to set up science-based, technology-fostering steps to protect public health by reducing pollution. Under the Clean Air Act, Congress directed EPA and each state to take steps to clean up the air to protect public health. For years, the "State of the Air" report chronicled the slow but steady improvement in the nation's air quality thanks to the Clean Air Act.

Now, that positive trend is threatened. Climate change is making pollution cleanup more difficult, and unfortunately, some in Congress seek changes to the Clean Air Act that would dismantle key provisions of the law and threaten the progress made over five decades.

Undermining the Clean Air Act itself is one of the fundamental goals of polluters and their allies. They have repeatedly challenged Clean Air Act provisions in court, and have repeatedly lost, so now they seek to weaken the law. Proposed efforts include exempting certain polluting facilities from some emissions controls, delaying science-based updates to air pollution standards and undermining public health as the core premise of the Act's key pollution limits.

Another emerging threat is the idea that legislation to address climate change must come at the price of weakening the Clean Air Act. Several bills have been introduced that would put a fee or price on carbon, but would also postpone or permanently restrict EPA's ability to reduce greenhouse gas emissions. We don't accept this trade-off. The Clean Air Act can and should work hand-in-hand with new laws in Congress to address climate change. Now is not the time to remove tools from the nation's toolbox to address this urgent challenge.

To protect the lives and health of millions of Americans, the Lung Association calls on Congress to reject attempts to weaken the Clean Air Act and make certain the law remains strong, fully implemented and fully enforced.

What you can do:

- Spread the word that some climate change legislation would actually weaken the Clean Air Act.

Threat 2: Considering outdated particle and ozone pollution limits

A fundamental reason for the success of the Clean Air Act is the requirement that EPA base decisions and actions on up-to-date science to protect public health. EPA has to periodically review its national limits on ozone and particle pollution (as well as four other pollutants) based on the current science and update them if necessary to reflect how much of each pollutant is safe to breathe. This requires ensuring that independent expert scientists regularly analyze current, peer-reviewed research and then provide their conclusions and perspectives to the EPA staff scientists and the Administrator. This process is critical. Over the years, research has shown that these pollutants are more dangerous than was known previously. In this way, the Clean Air Act requires EPA to make sure the national ozone and particle pollution standards protect Americans' health.

However, in 2018, the agency put forward a very aggressive timeline for completing a full review of both the ozone and particulate matter standards before the end of 2020.[1] Such a shortened review has severely limited what has historically been a thorough assessment of the science. The current EPA also removed independent science advisors from key advisory committees, including the Clean Air Scientific Advisory Committee (CASAC), and replaced them with people with far less experience in the research or who were paid by polluting industries.[2] EPA also dismissed a panel of experts who had been providing advice based on their deep understanding of the complex research on particle pollution. Many former participants and independent

health and medical groups, including the Lung Association, urged EPA to reinstitute the panel.[3] Former chairs and members of CASAC have raised concerns about the lack of scientific expertise in the new members of the committee, as well as the dramatically reduced capacity for scientific reviews.[4]

With these changes to the process, in 2020, EPA proposed keeping the current limits on particle pollution in place, and is expected to do the same for ozone pollution—despite the fact that science has shown for years that these limits are too weak.

What you can do:

- Tell EPA today that they need to set strong limits on particle and ozone pollution that protect the public. Take action now.

Threat 3: Dramatically weakening cleaner cars standards

In 2020, EPA and the Department of Transportation finalized rules to weaken limits on greenhouse gas emissions from cars, SUVs and personal trucks for model year 2021-2026 vehicles. Weakening these cleaner cars standards will not only greatly slow progress in cleaning up climate pollution from the transportation sector, but will also cause additional premature deaths from air pollution.

Even more drastically, in 2019, the Administration decided to attack the rights states have to set stronger standards to protect their residents. Under the Clean Air Act, California has the right to establish its own, stronger emissions standards for cars and trucks, and other states have the option of adopting California's standards. The Administration formally revoked California's permission to set its own limits on greenhouse gas emissions for cars, SUVs and light trucks, setting off a heated legal battle.

California's Clean Air Act authority to set more protective emissions standards has helped drive lifesaving reductions in harmful pollution from vehicles nationwide; maintaining this authority is critical. The Lung Association strongly opposed these rollbacks and recruited nearly 100 national, state and local health organizations to join comments to EPA in opposition.[5]

What you can do:

- Drive less. Combine trips, walk, bike, carpool or vanpool, and use buses, subways or other alternatives to driving.
- Support community plans that provide ways to get around that don't require a car, such as more sidewalks, bike trails and transit systems.

Threat 4: Putting limits on mercury and air toxics at risk

In April 2020, EPA finalized a proposal that could undermine the Mercury and Air Toxics Standards, lifesaving protections that are fully implemented, widely supported, and successful in reducing a long list of dangerous emissions. In its proposal, EPA deliberately undercounted the benefits of these protections.

EPA adopted the Mercury and Air Toxics Standards in 2011 to limit emissions of mercury and other hazardous air pollutants, including carcinogens, like arsenic, acid gases and other dangerous toxins. Reducing these emissions from power plants results in the reduction of other harmful emissions at the same time. Since then, the standards have not only slashed mercury and air toxics emissions but have also reduced particulate matter, preventing thousands of premature deaths and asthma attacks every year. EPA has proposed not to count the benefits stemming from reductions of particulate matter and other pollutants not explicitly covered by the rule, which artificially tips the balance to make the rule appear less cost effective than it is. This approach to calculating benefits, by design, obscures the enormous positive health impacts resulting from the Mercury and Air Toxics Standards.

What you can do:

- Call on your members of Congress to oppose EPA's decision that threatens to undermine the Mercury and Air Toxics Standards. The standards have bipartisan

support, and your representative and senators need to hear from you so they speak up about this critical issue.

Threat 5: Censoring the science available for EPA's decisions

In March 2020, EPA issued a proposal that resurrected a dangerous effort at the agency to suppress sound science, misleadingly labeled "Strengthening Transparency in Regulatory Science." The proposed rule, which the Lung Association has deemed the "Censoring Science" proposal, would permit EPA to restrict the scientific studies the agency considers when it makes policy.

EPA's effort is under the guise of transparency because the proposal would undervalue or block studies based on data that, for privacy reasons, can't be made public. However, this effort is disingenuous. The proposed rule would exclude sound research from informing regulations or important scientific information. The rule would ignore or discount key health studies that show that particle pollution, for example, can cause premature death—because those health studies are based on personal medical data that cannot and should not be released.

Many databases that scientists use today do allow unrestricted access to their information, but others do not because of the need for patient confidentiality for subjects included in the research. The studies are available and transparent, but the private health data they are based on must be protected. Blocking the use of these key studies that have been through multiple independent reviews and show widespread harm from outdoor air pollutants introduces dangerous bias that could limit the evidence, risking weaker air pollution safeguards.

Even in the midst of the COVID-19 crisis, EPA is pushing ahead with the Censoring Science proposal. The Lung Association is leading health, medical, scientific and academic organizations in pushing back.

What you can do:

- Raise your voice. There's still time to sign our petition opposing EPA's efforts to censor science. Join us at www.Lung.org/savescience

Threat 6: Replacing the Clean Power Plan with dangerously weak standards

Climate change is a public health emergency. To address it, the nation must dramatically cut greenhouse gases, including carbon pollution. Power plants comprise the largest stationary source of carbon pollution in the United States. The electric sector produced 28 percent of all U.S. greenhouse gas emissions in 2017.[6] Unfortunately, the current EPA repealed a sweeping plan to limit carbon pollution from power plants, the Clean Power Plan, and has now finalized a new rule that will not only fail to meaningfully cut carbon, but could actually increase harmful emissions.

EPA's replacement for the Clean Power Plan could be worse than doing nothing at all.

The now-repealed Clean Power Plan was the only nationwide plan to clean up carbon pollution from power plants. Adopted in 2015, it would have delivered a flexible, practical toolkit for states to reduce carbon from power plants approximately 32 percent (below 2005 levels) by 2030. States could have chosen a variety of ways to cut carbon, including requiring cleaner fuels for existing utilities, improving energy efficiency, producing more clean energy or partnering with other states to jointly reduce carbon pollution. This would have not only tackled climate change, but also reduced ozone, particle pollution, and other air pollutants and immediately benefited people's health.

Even though EPA repealed the Clean Power Plan, the Clean Air Act still requires that the agency reduce carbon pollution from power plants. In 2019, EPA finalized into law a dangerous replacement, called the "Affordable Clean Energy" (ACE) Rule. The ACE rule rejects the strong menu of options to reduce emissions that states had under the Clean Power Plan. Instead, it sets only minimal, totally inadequate limits on carbon emissions at power plants themselves. Worse, independent scientists found that this rule could result

in dirtier power plants running more often, which would actually increase air pollution emissions and the risk of premature deaths.[7] In short, EPA's replacement for the Clean Power Plan could be worse than doing nothing at all.

The Lung Association led national health and medical organizations in speaking out in opposition to the ACE rule[8] and is suing the Administration to stop it.[9] The Clean Air Act requires that EPA address carbon pollution in a way that protects public health. The nation urgently needs a system-wide reduction in carbon dioxide emissions from power plants and other sources to combat climate change.

What you can do:

- Raise your voice. The Lung Association is taking EPA to court to get them to clean up climate pollution from power plants, but they're not the only ones who can act. Call on your states and local governments to switch to clean, renewable electricity to address climate change and protect public health.
- Reduce your electricity use. Turn off the lights and unplug appliances when you're not using them. Switch to more energy-efficient electric appliances. If you have the option in your community, buy power from clean, renewable sources.

Threat 7: Removing limits on methane emissions from the oil and gas industry

Natural gas is far from clean. Oil and gas production wells, processing plants, transmission pipelines and storage units emit harmful gases, including volatile organic compounds and methane, a potent greenhouse gas. For the last few years, "State of the Air" has reported elevated levels of unhealthy ozone in places where oil and gas production has expanded, even in largely rural counties in the West.

Despite this, EPA has taken multiple steps to weaken pollution limits for the industry that were set in 2016.[10] Most recently, the agency proposed in 2019 to entirely roll back methane standards for new oil and gas sources, which would also result in other dangerous pollution that could have been prevented. EPA's proposal would also prevent any limits on existing oil and gas industry sources, despite the fact that they are currently a major source of air pollution, including methane. We led hundreds of health professionals in raising their voices in opposition to EPA's efforts.[11]

What you can do:

- Raise your voice. Producing and burning natural gas for electricity creates air pollution and causes climate change. Call on your state and local governments to switch to clean, renewable electricity to address climate change and protect public health.
- Reduce your electricity use. Turn off the lights and unplug appliances when you're not using them. Switch to more energy-efficient electric appliances. If you have the option in your community, buy power from clean, renewable sources.

Threat 8: Cutting funding needed to clean up the air

The Trump Administration's proposed budget would greatly reduce the ability of EPA to protect public health.

The Clean Air Act set up smart, open processes for protecting Americans from air pollution, which have enabled the U.S. to reduce some of the most common pollutants by more than 70 percent. Still, these processes only work if EPA and state, local and tribal air agencies have the funding and staffing they need to implement and enforce the law. The Trump Administration has consistently proposed budgets that would greatly reduce the ability of EPA to protect public health, including slashing overall funding for the agency and reducing grants to support the work of state and local agencies and tribes to implement the requirements of the Clean Air Act and other critical laws.

The Lung Association calls on Congress to ensure that EPA has sufficient funding to protect public health with the full range of programs, including state, local and tribal grants. In many cases, key EPA and other public health programs need funding increases to keep pace with their role in protecting the public. Investment in clean air and public health protections is critical.

Threat 9: Chipping away at air pollution enforcement

EPA has issued several directives to roll back or undermine steps to implement the Clean Air Act's requirements for reducing major air pollutants, weakening both current pollution cleanup and likely future air pollution standards, including for ozone and particulate matter.

EPA proposed weakening "New Source Review" requirements, which would allow new polluting sources to add to the burden of unhealthy air in communities in several ways. The proposal would allow emissions to be calculated at an hourly rate as opposed to an annual one. The result would be that emissions could increase dramatically, but facilities would not have to install and operate modern pollution controls as long as their hourly rate of emissions did not increase. A similar bill, HR 172, has also been introduced in Congress.

In 2019, EPA finalized guidance that redefined "ambient air" to allow industries to pollute more at their own facilities. This decision reversed a decades-old policy that narrowed the area that an industry could use, which helped limit public exposure to its emissions.[12] The change will allow the industry to produce more emissions.

EPA also announced an end to its decades-old "Once-In, Always-In" policy, allowing facilities to increase toxic air emissions.[13] Under the old policy, if a facility emitted toxic air pollution above a certain threshold, it had to install and keep running strong pollution controls in the future. EPA's reversal weakened the requirements that these facilities keep running their controls, potentially resulting in some of them increasing their pollution to just under the legal threshold.

Finally, amidst the COVID-19 crisis, polluting industries have sought, and EPA has granted, compliance waivers. We strongly oppose a widespread relaxation of Clean Air Act compliance and enforcement. The COVID-19 pandemic and its disproportionate impacts on people with lung disease and other chronic conditions make the continued reduction of air pollution more important, not less.

What You Can Do

We at the Lung Association are long-time champions for healthy air! You can help reduce air pollution outdoors by taking these steps:

Speak Up Today:

Tell EPA to set stronger limits on particle and ozone pollution. The science is clear: The nation needs stronger limits on ozone and particle pollution to safeguard health. The current National Ambient Air Quality Standards for particulate matter and ozone are not sufficient to protect public health. Every family has the right to breathe healthy air—and the right to know when air pollution levels are unhealthy. Tell the Environmental Protection Agency to follow the science and set stronger limits on particle and ozone pollution.

Other Ways You Can Help:

Share your story. Do you or any member of your family have a personal reason to fight for healthier, cleaner air? Let us know why clean air matters to you. Your story helps us remind decision makers what is at stake when it comes to clean air.

Speak up to Congress. Urge your members of Congress to oppose EPA's proposal that could undermine the Mercury and Air Toxics Standards, to oppose legislation that would weaken the Clean Air Act, and to support climate action to protect health, including the Climate Change Health Protection and Promotion Act. Take action on climate and health now.

Support strong science. Sign our petition opposing EPA's efforts to censor science. Join us at www.Lung.org/savescience

Get involved locally. Participate in state and local efforts to clean up air pollution and

address climate change, including by supporting clean, renewable electricity and cleaner vehicles. To find your local air pollution control agency, go to www.4cleanair.org.

Step up to Curb Pollution in Your Community:

Drive less. Once stay-at-home orders are lifted, combine trips, walk, bike, carpool or vanpool, and use buses, subways or other alternatives to driving. Vehicle emissions are a major source of air pollution. Support community plans that provide ways to get around that don't require a car, such as more sidewalks, protected bike lanes and transit systems. If you must drive, switch to electric vehicles.

Use less electricity. Turn out the lights and use energy-efficient electric appliances. Generating electricity is one of the biggest sources of pollution, particularly in the eastern U.S. If you have the option in your community, buy power from clean, renewable sources.

Don't burn wood or trash. Burning firewood and trash is among the largest sources of particle pollution in many parts of the country. If you must use a fireplace or stove for heat, convert your wood stove to natural gas, which has far fewer polluting emissions. Compost and recycle as much as possible and dispose of other waste properly; don't burn it. Support efforts in your community to ban outdoor burning of construction and yard wastes. Avoid the use of outdoor hydronic heaters, also called outdoor wood boilers, which are frequently much more polluting than wood stoves.

Make sure your local school system requires cleaner school buses, which includes replacing them with electric buses or retrofitting old school buses with filters and other equipment to reduce emissions. Make sure your local schools don't idle their buses; this step can immediately reduce emissions. Parents shouldn't idle in their cars outside of schools either.

Thank you for being a champion for healthy air.

Endnotes

1. Memo from Scott Pruitt, EPA Administrator, Re: Back-to-Basics Process for Reviewing National Ambient Air Quality Standards, May 9, 2018.
2. Memo from EPA Administrator Scott Pruitt. Subject: Strengthening and Improving Membership on EPA Federal Advisory Committees. October 31, 2017.
3. The testimony took place at the December 12, 2018 meeting of the Chartered Clean Air Scientific Advisory Committee (CASAC) Public Meeting on Particulate Matter. All testimony is posted on that site.
4. Letter to Tony Cox, Chair Clean Air Scientific Advisory Committee from H. Christopher Frey, Jonathan M. Samet, et al. RE: CASAC Advice on the EPA's Integrated Review Plan for the Ozone National Ambient Air Quality Standards (External Review Draft). November 26, 2018.
5. Letter from health and medical organizations opposing EPA's proposed SAFE rule. https://www.lung.org/getmedia/7bcf3cd4-1d8b-4dfa-9acb-77d470e8654c/letter-from-health-orgs-cars.pdf.pdf
6. U.S. Environmental Protection Agency. *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2016.* Washington, DC: U.S. EPA, 2017. Accessed at https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#electricity .
7. Driscoll C, Buonocore J, Levy J, Lambert K, et al. 2015 US power plant carbon standards and clean air and health co-benefits. Nature Climate Change 5: 525-540. Schwartz J, Buonocore J, Levy J, Driscoll C, Fallon Lambert K, and Reid S. Health Co-Benefits of Carbon Standard for existing Power Plants: Part 2 of the Co-Benefits of Carbon Standards Study. September 30, 2014. Harvard School of Public Health, Syracuse University, Boston University. Available at https://science-policy-exchange.org/sites/default/files/documents/Co-benefits%20of%20Carbon%20Standards%20Part%202%20Sept%202014.pdf.
8. These comments are available at http://www.Lung.org/get-involved/become-an-advocate/advocacy-archive.html.
9. U.S. Court of Appeals for the District of Columbia. Case # 19-1140. *American Lung Association, et al. v. EPA.*
10. U.S. EPA. Proposed Improvements 2016 New Source Performance Standards, September 11, 2018.
11. Letter from More than 660 Health Professionals in Support of Existing Methane Standard. https://www.Lung.org/getmedia/3cdda4b9-4e2f-4697-bd02-b4e2ab302d9a/letter-from-more-than-660.pdf.pdf
12. U.S. EPA. Draft Guidance: Revised Policy on Exclusions from "Ambient Air." November 2018.
13. U.S. EPA. News Release: Reducing Regulatory Burdens: EPA withdraws "once in always in" policy for major sources under Clean Air Act. January 25, 2018.

People at Risk from Short-Term Particle Pollution (24-Hour $PM_{2.5}$)

	Chronic Diseases					Age Groups						
In Counties where the Grades were:	**Adult Asthma**	**Pediatric Asthma**	**COPD**	**Lung Cancer**	**CV Disease**	**Under 18**	**65 and Over**	**Ever Smoked**	**Poverty**	**People of Color**	**Total Population**	**Number of Counties**
Grade A (0.0)	6,771,123	1,540,293	5,031,440	54,370	6,467,143	19,623,845	14,558,915	28,761,321	11,548,118	35,476,477	89,725,896	297
Grade B (0.3-0.9)	3,395,014	825,353	2,534,578	28,260	3,264,583	10,789,019	7,142,293	14,992,254	6,255,351	22,545,548	48,238,919	146
Grade C (1.0-2.0)	1,667,126	453,027	1,170,274	12,828	1,576,668	5,899,670	3,304,468	7,263,158	3,592,833	13,274,054	24,844,467	45
Grade D (2.1-3.2)	297,273	78,677	227,604	2,422	293,574	1,006,718	647,467	1,353,195	533,123	1,220,236	4,261,043	20
Grade F (3.3+)	3,650,451	805,614	2,072,796	22,256	2,943,875	12,296,306	7,698,577	14,323,380	6,472,755	29,407,484	53,316,714	86
National Population in Counties with $PM_{2.5}$ Monitors	16,365,270	3,835,792	11,435,112	124,583	15,088,287	51,343,463	34,641,698	69,123,521	29,256,648	104,469,732	228,178,923	645

People at Risk from Year-Round Particle Pollution (Annual $PM_{2.5}$)

	Chronic Diseases					Age Groups						
In Counties Where the Grades Were:	**Adult Asthma**	**Pediatric Asthma**	**COPD**	**Lung Cancer**	**CV Disease**	**Under 18**	**65 and Over**	**Ever Smoked**	**Poverty**	**People of Color**	**Total Population**	**Number of Counties**
Pass	13,797,857	3,247,886	9,842,855	106,862	12,901,183	42,746,567	29,184,251	58,662,062	24,290,620	84,732,794	191,137,371	519
Fail	1,399,442	323,798	767,735	8,595	1,098,607	5,048,346	2,913,516	5,499,833	3,112,327	14,329,923	21,224,804	19
National Population in Counties with $PM_{2.5}$ Monitors	16,365,270	3,835,792	11,435,112	124,583	15,088,287	51,343,463	34,641,698	69,123,521	29,256,648	104,469,732	228,178,923	645

People at Risk from Ozone[1]

	Chronic Diseases				Age Groups					
In Counties Where the Grades Were:	**Adult Asthma**	**Pediatric Asthma**	**COPD**	**CV Disease**	**Under 18**	**65 and Over**	**Poverty**	**People of Color**	**Total Population**	**Number of Counties**
Grade A (0.0)	1,485,752	361,796	1,149,162	1,520,167	4,612,771	3,484,440	2,872,939	7,809,825	20,784,760	170
Grade B (0.3-0.9)	1,949,843	446,903	1,580,840	2,067,129	5,690,920	4,802,293	3,020,587	8,174,133	26,703,636	156
Grade C (1.0-2.0)	2,646,783	609,876	2,023,691	2,615,173	7,893,302	5,762,978	4,256,792	12,510,496	35,749,159	162
Grade D (2.1-3.2)	1,548,364	344,073	1,093,194	1,439,274	4,628,217	3,330,503	2,336,936	9,669,752	21,124,073	71
Grade F (3.3+)	9,684,568	2,320,597	6,462,926	8,607,973	31,417,262	19,906,283	17,458,838	68,018,031	137,058,693	205
National Population in Counties with Ozone Monitors	17,448,325	4,115,709	12,413,590	16,386,810	54,651,603	37,598,655	30,170,408	106,556,189	243,244,612	803

Note:

1. "State of the Air" 2020 covers the period 2016-2018. The Appendix provides a full discussion of the methodology.

People at Risk In 25 U.S. Cities Most Polluted by Short-Term Particle Pollution (24-hour $PM_{2.5}$)

2020 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[9]	Ever Smoked[10]	People of Color[11]	Poverty[12]
1	Fresno-Madera-Hanford, CA	1,303,438	366,122	159,680	22,603	79,423	41,465	505	59,329	307,787	913,514	264,309
2	Bakersfield, CA	896,764	259,180	98,347	16,001	53,894	27,503	348	39,003	208,055	596,328	177,021
3	San Jose-San Francisco-Oakland, CA	9,666,055	2,083,848	1,441,150	128,651	647,292	353,447	3,744	513,313	2,532,824	5,940,594	910,851
4	Fairbanks, AK	98,971	23,861	10,204	1,708	6,791	4,061	55	4,617	31,974	30,429	8,104
5	Yakima, WA	251,446	74,480	34,524	5,444	16,911	8,764	135	13,490	66,527	144,155	40,961
6	Los Angeles-Long Beach, CA	18,764,814	4,270,638	2,583,214	263,657	1,234,623	662,425	7,264	956,017	4,815,313	13,006,958	2,440,945
7	Missoula, MT	118,791	22,315	18,506	1,189	9,790	5,034	62	7,707	41,975	12,853	14,719
7	Redding-Red Bluff, CA	243,956	53,947	49,942	3,331	16,467	9,990	94	15,013	65,808	57,523	37,668
7	Salt Lake City-Provo-Orem, UT	2,606,548	775,252	263,814	42,545	170,894	75,292	664	104,041	457,968	603,254	217,929
10	Phoenix-Mesa, AZ	4,911,851	1,164,393	775,920	93,868	379,311	261,519	2,194	337,858	1,505,840	2,203,881	600,386
11	Sacramento-Roseville, CA	2,619,754	599,091	414,668	36,986	173,009	96,594	1,013	141,372	679,845	1,234,160	338,884
12	Visalia, CA	465,861	142,848	53,292	8,819	27,348	14,170	181	20,216	105,845	335,036	102,451
13	Logan, UT-ID	140,794	42,891	13,952	2,427	8,983	3,916	39	5,308	25,208	22,401	17,024
14	Spokane-Spokane Valley-Coeur d'Alene, WA-ID	721,396	160,636	124,491	11,686	52,584	30,239	379	46,302	215,142	102,458	87,827
14	Seattle-Tacoma, WA	4,853,364	1,036,349	704,616	75,755	365,436	187,900	2,611	286,299	1,434,277	1,687,561	424,549
16	Pittsburgh-New Castle-Weirton, PA-OH-WV	2,612,492	493,652	526,956	47,773	214,077	160,936	1,678	219,828	920,378	363,815	291,201
17	Chico, CA	231,256	46,213	42,992	2,853	15,844	9,018	90	13,309	62,372	65,598	42,016
18	Medford-Grants Pass, OR	306,957	62,363	70,945	4,521	28,323	18,493	155	26,297	108,610	54,567	46,792
19	Salinas, CA	435,594	113,834	59,201	7,028	27,378	14,688	169	21,215	106,690	306,813	55,614
20	El Centro, CA	181,827	51,765	23,580	3,196	11,043	5,862	71	8,440	42,925	162,999	37,014
21	Santa Maria-Santa Barbara, CA	446,527	98,787	68,465	6,099	29,547	15,916	173	23,056	115,063	249,761	54,029
22	Eugene-Springfield, OR	379,611	69,868	73,392	5,065	36,150	21,366	192	29,676	133,980	70,215	67,217
23	Reno-Carson City-Fernley, NV	629,453	132,368	114,311	9,214	39,394	37,442	319	47,976	208,837	216,972	63,145
24	Portland-Vancouver-Salem, OR-WA	3,239,335	704,918	498,715	51,192	288,636	159,742	1,659	222,293	1,060,542	870,251	340,971
25	Las Vegas-Henderson, NV	2,276,993	525,247	342,326	36,562	139,723	124,078	1,152	156,491	722,232	1,300,943	314,702

Notes:

1. Cities are ranked using the highest weighted average for any county within that Combined Metropolitan Statistical Area or Metropolitan Statistical Area.
2. **Total population** represents the at-risk populations for all counties within the respective Combined Metropolitan Statistical Area or Metropolitan Statistical Area.
3. Those **under 18** and **65 and over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **Lung cancer** estimates are the number of new cases diagnosed in 2016.
9. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **Ever smoked** estimates are for adults 18 and over who have ever smoked 100 or more cigarettes in their life, based on state rates (BRFSS) applied to population estimates (U.S. Census).
11. **People of color** are anyone of Hispanic ethnicity or a race other than white.
12. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk In 25 U.S. Cities Most Polluted by Year-Round Particle Pollution (Annual $PM_{2.5}$)

2020 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[9]	Ever Smoked[10]	People of Color[11]	Poverty[12]
1	Bakersfield, CA	896,764	259,180	98,347	16,001	53,894	27,503	348	39,003	208,055	596,328	177,021
2	Fresno-Madera-Hanford, CA	1,303,438	366,122	159,680	22,603	79,423	41,465	505	59,329	307,787	913,514	264,309
3	Visalia, CA	465,861	142,848	53,292	8,819	27,348	14,170	181	20,216	105,845	335,036	102,451
4	Los Angeles-Long Beach, CA	18,764,814	4,270,638	2,583,214	263,657	1,234,623	662,425	7,264	956,017	4,815,313	13,006,958	2,440,945
5	San Jose-San Francisco-Oakland, CA	9,666,055	2,083,848	1,441,150	128,651	647,292	353,447	3,744	513,313	2,532,824	5,940,594	910,851
6	Fairbanks, AK	98,971	23,861	10,204	1,708	6,791	4,061	55	4,617	31,974	30,429	8,104
7	Phoenix-Mesa, AZ	4,911,851	1,164,393	775,920	93,868	379,311	261,519	2,194	337,858	1,505,840	2,203,881	600,386
8	El Centro, CA	181,827	51,765	23,580	3,196	11,043	5,862	71	8,440	42,925	162,999	37,014
8	Pittsburgh-New Castle-Weirton, PA-OH-WV	2,612,492	493,652	526,956	47,773	214,077	160,936	1,678	219,828	920,378	363,815	291,201
10	Detroit-Warren-Ann Arbor, MI	5,353,002	1,167,571	878,042	100,227	467,545	361,975	3,258	405,383	1,903,919	1,711,850	766,528
11	Cleveland-Akron-Canton, OH	3,599,264	762,709	665,627	59,285	266,809	248,192	2,369	303,425	1,308,507	862,428	482,828
12	McAllen-Edinburg, TX	930,464	303,179	103,338	23,991	46,626	37,355	460	54,456	221,989	875,994	278,136
12	Philadelphia-Reading-Camden, PA-NJ-DE-MD	7,204,035	1,563,815	1,172,273	137,782	546,942	367,327	4,448	505,159	2,313,363	2,755,807	863,095
14	Birmingham-Hoover-Talladega, AL	1,315,071	299,130	216,148	39,477	107,332	104,605	863	131,219	445,278	458,703	188,402
14	Cincinnati-Wilmington-Maysville, OH-KY-IN	2,272,152	531,476	347,135	39,399	171,496	158,664	1,608	181,756	812,130	462,928	262,757
16	Indianapolis-Carmel-Muncie, IN	2,431,361	587,696	347,061	51,145	182,624	164,004	1,743	195,671	830,603	618,582	297,292
16	Missoula, MT	118,791	22,315	18,506	1,189	9,790	5,034	62	7,707	41,975	12,853	14,719
16	Sacramento-Roseville, CA	2,619,754	599,091	414,668	36,986	173,009	96,594	1,013	141,372	679,845	1,234,160	338,884
16	Shreveport-Bossier City-Minden, LA	436,341	104,477	72,410	9,142	29,706	33,398	282	39,553	144,433	203,797	85,607
20	Chicago-Naperville, IL-IN-WI	9,866,910	2,241,630	1,451,741	140,534	673,886	510,490	6,298	633,418	2,960,335	4,578,321	1,110,613
20	Medford-Grants Pass, OR	306,957	62,363	70,945	4,521	28,323	18,493	155	26,297	108,610	54,567	46,792
22	Houston-The Woodlands, TX	7,183,143	1,897,159	809,495	150,125	395,360	317,983	3,559	462,780	1,889,107	4,591,549	1,018,964
23	Atlanta-Athens-Clarke County-Sandy Springs, GA-AL	6,775,511	1,642,659	855,689	124,911	461,612	374,851	4,240	461,776	1,931,461	3,450,999	803,621
23	Chico, CA	231,256	46,213	42,992	2,853	15,844	9,018	90	13,309	62,372	65,598	42,016
25	Brownsville-Harlingen-Raymondville, TX	445,423	133,641	60,430	10,575	23,290	19,934	220	29,290	112,466	406,442	123,562
25	St. Louis-St. Charles-Farmington, MO-IL	2,909,777	643,945	483,131	50,287	208,874	193,154	1,965	220,425	969,825	748,141	337,275

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9. **Ever smoked** estimates are for adults 18 and over who have ever smoked 100 or more cigarettes in their life, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **People of color** are anyone of Hispanic ethnicity or a race other than white.
11. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk In 25 Most Ozone-Polluted Cities

2020 Rank[1]	Metropolitan Statistical Areas	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	CV Disease[8]	People of Color[9]	Poverty[10]
1	Los Angeles-Long Beach, CA	18,764,814	4,270,638	2,583,214	263,657	1,234,623	662,425	956,017	13,006,958	2,440,945
2	Visalia, CA	465,861	142,848	53,292	8,819	27,348	14,170	20,216	335,036	102,451
3	Bakersfield, CA	896,764	259,180	98,347	16,001	53,894	27,503	39,003	596,328	177,021
4	Fresno-Madera-Hanford, CA	1,303,438	366,122	159,680	22,603	79,423	41,465	59,329	913,514	264,309
5	Sacramento-Roseville, CA	2,619,754	599,091	414,668	36,986	173,009	96,594	141,372	1,234,160	338,884
6	San Diego-Chula Vista-Carlsbad, CA	3,343,364	722,408	469,454	44,599	222,727	118,450	170,564	1,832,022	372,148
7	Phoenix-Mesa, AZ	4,911,851	1,164,393	775,920	93,868	379,311	261,519	337,858	2,203,881	600,386
8	San Jose-San Francisco-Oakland, CA	9,666,055	2,083,848	1,441,150	128,651	647,292	353,447	513,313	5,940,594	910,851
9	Las Vegas-Henderson, NV	2,276,993	525,247	342,326	36,562	139,723	124,078	156,491	1,300,943	314,702
10	Denver-Aurora, CO	3,572,798	803,973	464,674	57,540	250,127	117,348	156,017	1,239,843	300,335
11	Salt Lake City-Provo-Orem, UT	2,606,548	775,252	263,814	42,545	170,894	75,292	104,041	603,254	217,929
12	New York-Newark, NY-NJ-CT-PA	22,679,948	4,852,039	3,601,621	332,013	1,727,257	999,220	1,399,513	11,714,237	2,699,912
13	Redding-Red Bluff, CA	243,956	53,947	49,942	3,331	16,467	9,990	15,013	57,523	37,668
14	Houston-The Woodlands, TX	7,183,143	1,897,159	809,495	150,125	395,360	317,983	462,780	4,591,549	1,018,964
15	El Centro, CA	181,827	51,765	23,580	3,196	11,043	5,862	8,440	162,999	37,014
16	Chicago-Naperville, IL-IN-WI	9,866,910	2,241,630	1,451,741	140,534	673,886	510,490	633,418	4,578,321	1,110,613
17	El Paso-Las Cruces, TX-NM	1,063,075	282,247	138,167	22,128	61,919	47,098	67,360	905,812	222,872
18	Chico, CA	231,256	46,213	42,992	2,853	15,844	9,018	13,309	65,598	42,016
19	Fort Collins, CO	350,518	68,703	54,938	4,917	25,460	12,323	16,693	61,373	36,054
20	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA	9,796,147	2,213,754	1,378,591	170,198	715,068	458,462	617,799	4,798,740	829,272
21	Dallas-Fort Worth, TX-OK	7,948,477	2,051,630	931,511	162,557	442,787	361,074	526,069	4,201,204	896,752
22	Sheboygan, WI	115,456	25,431	20,789	2,146	8,211	4,980	7,138	18,681	8,432
23	Philadelphia-Reading-Camden, PA-NJ-DE-MD	7,204,035	1,563,815	1,172,273	137,782	546,942	367,327	505,159	2,755,807	863,095
24	Milwaukee-Racine-Waukesha, WI	2,049,391	464,985	326,928	39,235	145,433	83,225	116,927	619,356	255,115
25	Hartford-East Hartford, CT	1,473,084	293,974	258,397	28,550	121,927	63,740	89,946	467,678	143,411

Notes:

1. Cities are ranked using the highest weighted average for any county within that Combined Metropolitan Statistical Area or Metropolitan Statistical Area.
2. **Total population** represents the at-risk populations for all counties within the respective Combined Metropolitan Statistical Area or Metropolitan Statistical Area.
3. Those **under 18** and **65 and over** are vulnerable to ozone and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
9. **People of color** are anyone of Hispanic ethnicity or a race other than white.
10. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.

People at Risk in 25 Counties Most Polluted by Short-Term Particle Pollution (24-hour $PM_{2.5}$)

2020 Rank[1]	County	State	Total Population[2]	At-Risk Groups										High $PM_{2.5}$ Days in Unhealthy Ranges, 2016–2018	
				Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[9]	Ever Smoked[10]	People of Color[11]	Poverty[12]	Weighted Avg.[13]	Grade[14]
1	Fresno	CA	994,400	281,819	122,113	17,399	60,395	31,587	385	45,226	234,129	705,643	208,627	37.8	F
2	Kings	CA	151,366	40,964	15,516	2,529	9,283	4,580	59	6,416	35,590	103,277	25,481	36.2	F
3	Kern	CA	896,764	259,180	98,347	16,001	53,894	27,503	348	39,003	208,055	596,328	177,021	35.8	F
4	Stanislaus	CA	549,815	148,801	72,319	9,187	34,134	18,290	213	26,395	133,042	323,635	84,744	26.7	F
5	Fairbanks North Star Borough	AK	98,971	23,861	10,204	1,708	6,791	4,061	55	4,617	31,974	30,429	8,104	26.5	F
6	San Joaquin	CA	752,660	204,316	95,916	12,614	46,649	24,840	292	35,760	181,645	519,021	105,351	21.5	F
7	Ravalli	MT	43,172	8,246	11,138	439	3,398	2,415	23	3,745	15,880	3,154	6,628	19.8	F
8	Merced	CA	274,765	80,588	30,845	4,975	16,418	8,420	107	11,965	63,423	200,196	56,863	19.7	F
9	Yakima	WA	251,446	74,480	34,524	5,444	16,911	8,764	135	13,490	66,527	144,155	40,961	17.8	F
9	Lewis and Clark	MT	68,700	14,770	12,903	787	5,395	3,278	36	4,971	24,014	6,059	7,061	17.8	F
11	Madera	CA	157,672	43,339	22,051	2,676	9,745	5,298	61	7,688	38,068	104,594	30,201	17.2	F
11	Siskiyou	CA	43,724	8,802	11,160	543	3,062	1,998	17	3,066	12,428	10,636	7,396	17.2	F
13	Plumas	CA	18,804	3,173	5,345	196	1,378	927	7	1,435	5,635	3,123	2,317	16.2	F
14	Okanogan	WA	42,132	9,769	9,094	714	3,150	1,916	23	3,087	12,841	14,878	7,049	14.8	F
15	Lincoln	MT	19,794	3,609	5,670	192	1,557	1,182	10	1,840	7,431	1,491	3,964	14.3	F
16	Los Angeles	CA	10,105,518	2,188,893	1,375,957	135,136	673,459	358,245	3,911	515,500	2,622,021	7,466,160	1,409,155	13.8	F
17	Shoshone	ID	12,796	2,630	2,923	188	866	662	6	988	4,079	1,140	2,371	13.3	F
18	Missoula	MT	118,791	22,315	18,506	1,189	9,790	5,034	62	7,707	41,975	12,853	14,719	12.3	F
18	Utah	UT	622,213	207,710	48,050	11,399	38,230	15,362	159	20,064	100,766	111,686	57,136	12.3	F
18	Tehama	CA	63,916	15,363	12,389	948	4,205	2,533	25	3,797	16,786	20,718	10,749	12.3	F
21	Colusa	CA	21,627	5,907	3,163	365	1,344	745	8	1,087	5,273	14,202	2,350	12.0	F
22	Pinal	AZ	447,138	100,778	91,129	8,124	34,832	26,058	201	34,552	142,549	194,203	54,399	11.5	F
22	Salt Lake	UT	1,152,633	312,889	125,157	17,171	78,549	35,187	294	49,059	211,172	338,240	102,660	11.5	F
24	Sacramento	CA	1,540,975	363,909	217,601	22,467	100,345	54,282	596	78,584	391,898	859,537	217,138	11.3	F
24	Mendocino	CA	87,606	18,713	19,366	1,155	5,988	3,712	34	5,617	24,035	30,951	15,140	11.3	F

Notes:

1. Counties are ranked by weighted average. See note 13 below.
2. **Total population** represents the at-risk populations in counties with $PM_{2.5}$ monitors.
3. Those **under 18** and **65 and over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. Adult asthma estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **Lung cancer** estimates are the number of new cases diagnosed in 2016.
9. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **Ever smoked** estimates are for adults 18 and over who have ever smoked 100 or more cigarettes in their life, based on state rates (BRFSS) applied to population estimates (U.S. Census).
11. **People of color** are anyone of Hispanic ethnicity or a race other than white.
12. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.
13. The **weighted average** was derived by counting the number of days in each unhealthful range (orange, red, purple, maroon) in each year (2016-2018), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple, 2.5 for maroon), and calculating the average.
14. **Grade** is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

People at Risk in 25 Counties Most Polluted by Year-Round Particle Pollution (Annual $PM_{2.5}$)

				At-Risk Groups										$PM_{2.5}$ Annual, 2016–2018	
2020 Rank[1]	County	State	Total Population[2]	Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	Lung Cancer[8]	CV Disease[9]	Ever Smoked[10]	People of Color[11]	Poverty[12]	Design Value[13]	Pass/ Fail[14]
1	Kern	CA	896,764	259,180	98,347	16,001	53,894	27,503	348	39,003	208,055	596,328	177,021	17.8	Fail
2	Kings	CA	151,366	40,964	15,516	2,529	9,283	4,580	59	6,416	35,590	103,277	25,481	16.8	Fail
3	Tulare	CA	465,861	142,848	53,292	8,819	27,348	14,170	181	20,216	105,845	335,036	102,451	16.1	Fail
4	Fresno	CA	994,400	281,819	122,113	17,399	60,395	31,587	385	45,226	234,129	705,643	208,627	15.0	Fail
5	Plumas	CA	18,804	3,173	5,345	196	1,378	927	7	1,435	5,635	3,123	2,317	14.7	Fail
5	San Bernardino	CA	2,171,603	572,278	251,361	35,331	135,544	70,099	841	99,838	524,916	1,564,843	317,514	14.7	Fail
7	Stanislaus	CA	549,815	148,801	72,319	9,187	34,134	18,290	213	26,395	133,042	323,635	84,744	14.2	Fail
8	Riverside	CA	2,450,758	616,126	353,122	38,038	156,550	85,478	949	124,180	612,354	1,600,121	307,511	13.9	Fail
9	San Joaquin	CA	752,660	204,316	95,916	12,614	46,649	24,840	292	35,760	181,645	519,021	105,351	13.8	Fail
10	Merced	CA	274,765	80,588	30,845	4,975	16,418	8,420	107	11,965	63,423	200,196	56,863	13.4	Fail
11	Fairbanks North Star Borough	AK	98,971	23,861	10,204	1,708	6,791	4,061	55	4,617	31,974	30,429	8,104	13.1	Fail
12	Pinal	AZ	447,138	100,778	91,129	8,124	34,832	26,058	201	34,552	142,549	194,203	54,399	13.0	Fail
13	Lincoln	MT	19,794	3,609	5,670	192	1,557	1,182	10	1,840	7,431	1,491	3,964	12.9	Fail
14	Madera	CA	157,672	43,339	22,051	2,676	9,745	5,298	61	7,688	38,068	104,594	30,201	12.8	Fail
15	Los Angeles	CA	10,105,518	2,188,893	1,375,957	135,136	673,459	358,245	3,911	515,500	2,622,021	7,466,160	1,409,155	12.7	Fail
16	Allegheny	PA	1,218,452	227,749	230,377	22,168	99,742	70,310	778	96,971	424,109	263,512	138,397	12.6	Fail
16	Imperial	CA	181,827	51,765	23,580	3,196	11,043	5,862	71	8,440	42,925	162,999	37,014	12.6	Fail
18	Klamath	OR	67,653	14,706	14,340	1,066	6,153	3,903	34	5,512	23,338	15,294	12,310	12.4	Fail
19	Hawaii	HI	200,983	43,553	42,032	4,444	14,524	6,922	92	13,054	62,784	140,018	30,903	12.3	Fail
20	Alameda	CA	1,666,753	342,510	230,510	21,146	112,623	59,859	645	86,118	438,363	1,148,783	147,394	12.0	Pass
21	Lemhi	ID	7,961	1,488	2,409	106	544	458	4	726	2,679	533	1,154	11.4	Pass
22	Wayne	MI	1,753,893	414,221	270,554	35,558	150,021	113,859	1,066	126,753	607,144	886,177	376,649	11.3	Pass
23	Shoshone	ID	12,796	2,630	2,923	188	866	662	6	988	4,079	1,140	2,371	11.2	Pass
24	Ventura	CA	850,967	194,553	132,387	12,011	56,290	31,535	329	46,171	221,522	468,345	76,206	11.0	Pass
24	Cuyahoga	OH	1,243,857	257,882	225,983	20,045	92,829	84,905	817	103,312	453,134	512,719	217,166	11.0	Pass

Notes:

1. Counties are ranked by design value. See note 13 below.
2. **Total population** represents the at-risk populations in counties with $PM_{2.5}$ monitors.
3. Those **under 18** and **65 and over** are vulnerable to $PM_{2.5}$ and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **Lung cancer** estimates are the number of new cases diagnosed in 2016.
9. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
10. **Ever smoked** estimates are for adults 18 and over who have ever smoked 100 or more cigarettes in their life, based on state rates (BRFSS) applied to population estimates (U.S. Census).
11. **People of color** are anyone of Hispanic ethnicity or a race other than white.
12. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.
13. The **design value** is the calculated concentration of a pollutant based on the form of the Annual $PM_{2.5}$ National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the current (2012) standard (U.S. EPA).
14. **Grades** are based on EPA's determination of meeting or failure to meet the NAAQS for annual $PM_{2.5}$ levels during 2015-2017. Counties meeting the NAAQS received grades of Pass; counties not meeting the NAAQS received grades of Fail.

People at Risk in 25 Most Ozone-Polluted Counties

2020 Rank[1]	County	State	Total Population[2]	At-Risk Groups								High Ozone Days in Unhealthy Ranges, 2016–2018	
				Under 18[3]	65 and Over[3]	Pediatric Asthma[4,6]	Adult Asthma[5,6]	COPD[7]	CV Disease[8]	People of Color[9]	Poverty[10]	Weighted Avg.[11]	Grade[12]
1	San Bernardino	CA	2,171,603	572,278	251,361	35,331	135,544	70,099	99,838	1,564,843	317,514	174.3	F
2	Riverside	CA	2,450,758	616,126	353,122	38,038	156,550	85,478	124,180	1,600,121	307,511	138.8	F
3	Los Angeles	CA	10,105,518	2,188,893	1,375,957	135,136	673,459	358,245	515,500	7,466,160	1,409,155	111.0	F
4	Tulare	CA	465,861	142,848	53,292	8,819	27,348	14,170	20,216	335,036	102,451	105.2	F
5	Kern	CA	896,764	259,180	98,347	16,001	53,894	27,503	39,003	596,328	177,021	103.2	F
6	Fresno	CA	994,400	281,819	122,113	17,399	60,395	31,587	45,226	705,643	208,627	85.8	F
7	Nevada	CA	99,696	17,071	27,380	1,054	7,266	4,821	7,432	15,030	10,171	51.2	F
8	San Diego	CA	3,343,364	722,408	469,454	44,599	222,727	118,450	170,564	1,832,022	372,148	43.3	F
9	Placer	CA	393,149	87,441	76,906	5,398	26,478	15,911	23,831	109,849	27,596	40.7	F
10	El Dorado	CA	190,678	37,821	40,389	2,335	13,335	8,279	12,506	42,700	15,401	40.2	F
11	Maricopa	AZ	4,410,824	1,052,788	669,285	84,871	340,115	231,647	298,086	1,989,191	535,183	39.8	F
12	Kings	CA	151,366	40,964	15,516	2,529	9,283	4,580	6,416	103,277	25,481	39.5	F
13	Stanislaus	CA	549,815	148,801	72,319	9,187	34,134	18,290	26,395	323,635	84,744	31.8	F
14	Tuolumne	CA	54,539	9,158	14,279	565	3,969	2,562	3,923	11,026	6,417	31.7	F
15	Madera	CA	157,672	43,339	22,051	2,676	9,745	5,298	7,688	104,594	30,201	31.0	F
16	Clark	NV	2,231,647	517,629	328,692	36,032	136,812	120,615	151,858	1,289,911	307,977	30.2	F
17	Jefferson	CO	580,233	114,515	95,477	8,196	41,776	21,576	29,476	127,678	39,799	29.2	F
18	Salt Lake	UT	1,152,633	312,889	125,157	17,171	78,549	35,187	49,059	338,240	102,660	25.7	F
19	Sacramento	CA	1,540,975	363,909	217,601	22,467	100,345	54,282	78,584	859,537	217,138	25.0	F
20	Fairfield	CT	943,823	212,038	149,918	20,593	76,126	39,383	54,861	363,243	92,971	23.0	F
21	Tehama	CA	63,916	15,363	12,389	948	4,205	2,533	3,797	20,718	10,749	22.5	F
21	Mariposa	CA	17,471	2,828	4,882	175	1,289	859	1,325	3,551	2,569	22.5	F
23	Harris	TX	4,698,619	1,251,684	494,264	99,047	257,086	201,143	291,795	3,331,840	767,367	22.3	F
24	Merced	CA	274,765	80,588	30,845	4,975	16,418	8,420	11,965	200,196	56,863	22.0	F
25	Imperial	CA	181,827	51,765	23,580	3,196	11,043	5,862	8,440	162,999	37,014	19.7	F
25	Douglas	CO	342,776	88,978	40,935	6,368	22,775	11,168	14,826	61,999	8,975	19.7	F

Notes:

1. Counties are ranked by weighted average. See note 11 below.
2. **Total population** represents the at-risk populations in counties with $PM_{2.5}$ monitors.
3. Those **under 18** and **65 and over** are vulnerable to ozone and are, therefore, included. They should not be used as population denominators for disease estimates.
4. **Pediatric asthma** estimates are for those under 18 years of age and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
5. **Adult asthma** estimates are for those 18 years and older and represent the **estimated** number of people who had asthma in 2018 based on state rates (BRFSS) applied to population estimates (U.S. Census).
6. Adding across rows does not produce valid estimates. Adding the disease categories (asthma, COPD, etc.) will double-count people who have been diagnosed with more than one disease.
7. **COPD** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
8. **CV disease** is cardiovascular disease and estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to population estimates (U.S. Census).
9. **People of color** are anyone of Hispanic ethnicity or a race other than white.
10. **Poverty** estimates come from the U.S. Census Bureau and are for all ages.
11. The **weighted average** was derived by counting the number of days in each unhealthful range (orange, red, purple) in each year (2016-2018), multiplying the total in each range by the assigned standard weights (i.e., 1 for orange, 1.5 for red, 2.0 for purple), and calculating the average.
12. **Grade** is assigned by weighted average as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.

Cleanest U.S. Cities for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1]

Metropolitan Statistical Area	Population
Albany-Schenectady, NY	1,171,593
Albuquerque-Santa Fe-Las Vegas, NM	1,156,187
Alexandria, LA	153,044
Appleton-Oshkosh-Neenah, WI	408,544
Bangor, ME	151,096
Birmingham-Hoover-Talladega, AL	1,315,071
Bloomington-Bedford, IN	213,430
Bloomington-Pontiac, IL	208,589
Boston-Worcester-Providence, MA-RI-NH-CT	8,285,407
Bowling Green-Glasgow, KY	231,638
Buffalo-Cheektowaga-Olean, NY	1,206,992
Burlington-Fort Madison-Keokuk, IA-IL-MO	104,588
Burlington-South Burlington-Barre, VT	279,223
Champaign-Urbana, IL	226,379
Charlotte-Concord, NC-SC	2,753,810
Charlottesville, VA	218,233
Cincinnati-Wilmington-Maysville, OH-KY-IN	2,272,152
Clarksville, TN-KY	305,825
Cleveland-Akron-Canton, OH	3,599,264
Corpus Christi-Kingsville-Alice, TX	536,555
Davenport-Moline, IA-IL	470,898
Dayton-Springfield-Kettering, OH	1,079,837
Decatur, IL	104,712
Eau Claire-Menomonie, WI	213,800
Edwards-Glenwood Springs, CO	132,713
Elmira-Corning, NY	180,050
Erie-Meadville, PA	357,124
Fayetteville-Sanford-Lumberton, NC	848,083
Fayetteville-Springdale-Rogers, AR	526,050
Florence, SC	204,961
Florence-Muscle Shoals, AL	147,149
Fort Smith, AR-OK	250,148
Fort Wayne-Huntington-Auburn, IN	606,645
Gadsden, AL	102,501
Gainesville-Lake City, FL	399,485
Grand Island, NE	75,808
Grand Rapids-Kentwood-Muskegon, MI	1,406,918
Green Bay-Shawano, WI	367,045
Greenville-Kinston-Washington, NC	282,969
Harrisonburg-Staunton, VA	258,284
Hartford-East Hartford, CT	1,473,084
Hot Springs-Malvern, AR	132,855
Houma-Thibodaux, LA	209,136
Huntsville-Decatur, AL	614,739
Jackson-Brownsville, TN	195,589
Johnstown-Somerset, PA	205,682
Kalamazoo-Battle Creek-Portage, MI	504,022
Kokomo-Peru, IN	117,933
La Crosse-Onalaska, WI-MN	136,808
Lafayette-Opelousas-Morgan City, LA	621,902
Lafayette-West Lafayette-Frankfort, IN	262,341
Lansing-East Lansing, MI	550,085
Lawton, OK	126,198
Lexington-Fayette-Richmond-Frankfort, KY	743,778
Lima-Van Wert-Celina, OH	217,707
Lincoln-Beatrice, NE	356,083
Little Rock-North Little Rock, AR	909,346
Louisville/Jefferson County-Elizabethtown-Bardstown, KY-IN	1,488,015
Lynchburg, VA	263,353
Memphis-Forrest City, TN-MS-AR	1,367,788
Mobile-Daphne-Fairhope, AL	648,157
Monroe-Ruston, LA	249,399
Montgomery-Selma-Alexander City, AL	462,747
Morgantown-Fairmont, WV	196,356
New Orleans-Metairie-Hammond, LA-MS	1,506,145
North Port-Sarasota, FL	1,044,060
Orlando-Lakeland-Deltona, FL	4,096,575
Owensboro, KY	119,114
Palm Bay-Melbourne-Titusville, FL	596,849
Parkersburg-Marietta-Vienna, WV-OH	150,188
Pensacola-Ferry Pass, FL-AL	531,631
Peoria, IL	403,217
Portland-Lewiston-South Portland, ME	643,099
Richmond, VA	1,282,442
Roanoke, VA	314,172
Rochester-Batavia-Seneca Falls, NY	1,162,893
Rockford-Freeport-Rochelle, IL	433,334
Saginaw-Midland-Bay City, MI	377,932
Salisbury-Cambridge, MD-DE	441,977
Scranton—Wilkes-Barre, PA	555,485
Sierra Vista-Douglas, AZ	126,770
Sioux Falls, SD	265,653
Springfield, MA	702,724
Springfield, MO	466,978
Springfield-Jacksonville-Lincoln, IL	308,124
St. George, UT	171,700
Syracuse-Auburn, NY	727,647
Tallahassee, FL	385,145
Tampa-St. Petersburg-Clearwater, FL	3,142,663
Terre Haute, IN	186,652
Topeka, KS	232,594
Tuscaloosa, AL	251,808
Urban Honolulu, HI	980,080
Virginia Beach-Norfolk, VA-NC	1,854,604
Waterloo-Cedar Falls, IA	169,659
Wheeling, WV-OH	140,045
Wichita-Winfield, KS	672,796
Wilmington, NC	294,436

Note:

1. Monitors in these cities reported no days when PM2.5 levels reached the unhealthful range using the Air Quality Index based on the 2006 NAAQS.

Top 25 Cleanest U.S. Cities for Year-Round Particle Pollution (Annual $PM_{2.5}$)[1]

2020 Rank[2]	Design Value[3]	Metropolitan Statistical Area	Population
1	3.6	Urban Honolulu, HI	980,080
2	4.1	Kahului-Wailuku-Lahaina, HI	167,207
3	4.4	Cheyenne, WY	98,976
4	4.7	Elmira-Corning, NY	180,050
5	4.9	Wilmington, NC	294,436
6	5.0	Casper, WY	79,115
7	5.1	Syracuse-Auburn, NY	727,647
7	5.1	Bellingham, WA	225,685
9	5.2	Springfield, MA	702,724
9	5.2	St. George, UT	171,700
9	5.2	Duluth, MN-WI	289,457
12	5.3	Bismarck, ND	128,320
13	5.5	Pueblo-Cañon City, CO	215,550
14	5.7	Palm Bay-Melbourne-Titusville, FL	596,849
14	5.7	Burlington-South Burlington-Barre, VT	279,223
16	5.8	Bangor, ME	151,096
16	5.8	Anchorage, AK	399,148
18	5.9	Grand Junction, CO	153,207
18	5.9	Sioux Falls, SD	265,653
18	5.9	Pittsfield, MA	126,348
18	5.9	Grand Island, NE	75,808
22	6.0	Colorado Springs, CO	738,939
23	6.3	Appleton-Oshkosh-Neenah, WI	408,544
23	6.3	Gainesville-Lake City, FL	399,485
23	6.3	Salinas, CA	435,594

Notes:

1. This list represents cities with the lowest levels of annual $PM_{2.5}$ air pollution.
2. Cities are ranked by using the highest design value for any county within that metropolitan area.
3. The design value is the calculated concentration of a pollutant based on the form of the Annual $PM_{2.5}$ National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the current (2012) standard (U.S. EPA).

Cleanest U.S. Cities for Ozone Air Pollution[1]

Metropolitan Statistical Area	Population
Anchorage, AK	399,148
Bangor, ME	151,096
Bismarck, ND	128,320
Bowling Green-Glasgow, KY	231,638
Brownsville-Harlingen-Raymondville, TX	445,423
Brunswick, GA	118,456
Burlington-South Burlington-Barre, VT	279,223
Casper, WY	79,115
Clarksville, TN-KY	305,825
Corpus Christi-Kingsville-Alice, TX	536,555
Crestview-Fort Walton Beach-Destin, FL	278,644
Dothan-Ozark, AL	197,201
Duluth, MN-WI	289,457
Fairbanks, AK	98,971
Fargo-Wahpeton, ND-MN	267,964
Fayetteville-Sanford-Lumberton, NC	848,083
Fayetteville-Springdale-Rogers, AR	526,050
Florence, SC	204,961
Fort Smith, AR-OK	250,148
Gadsden, AL	102,501
Hickory-Lenoir-Morganton, NC	368,416
Houma-Thibodaux, LA	209,136
Jackson-Vicksburg-Brookhaven, MS	678,169
Joplin-Miami, MO-OK	210,077
La Crosse-Onalaska, WI-MN	136,808
Laredo, TX	275,910
Lincoln-Beatrice, NE	356,083
Longview, TX	286,143
McAllen-Edinburg, TX	930,464
Missoula, MT	118,791
Monroe-Ruston, LA	249,399
Morgantown-Fairmont, WV	196,356
Myrtle Beach-Conway, SC-NC	543,140
New Bern-Morehead City, NC	194,743
Panama City, FL	185,287
Rapid City-Spearfish, SD	165,764
Roanoke, VA	314,172
Rochester-Austin, MN	259,813
Rocky Mount-Wilson-Roanoke Rapids, NC	297,726
Salinas, CA	435,594
Savannah-Hinesville-Statesboro, GA	577,093
Scottsboro-Fort Payne, AL	123,121
Shreveport-Bossier City-Minden, LA	436,341
Springfield, MO	466,978
Tallahassee, FL	385,145
Topeka, KS	232,594
Tupelo-Corinth, MS	202,792
Urban Honolulu, HI	980,080
Wausau-Stevens Point-Wisconsin Rapids, WI	307,114
Wilmington, NC	294,436

Notes:

1. This list represents cities with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2015 NAAQS.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1]

County	State	MSAs and Respective CSA[2]
Baldwin	AL	Mobile-Daphne-Fairhope, AL
Clay	AL	
Colbert	AL	Florence-Muscle Shoals, AL
Etowah	AL	Gadsden, AL
Jefferson	AL	Birmingham-Hoover-Talladega, AL
Madison	AL	Huntsville-Decatur, AL
Mobile	AL	Mobile-Daphne-Fairhope, AL
Montgomery	AL	Montgomery-Selma-Alexander City, AL
Morgan	AL	Huntsville-Decatur, AL
Russell	AL	Columbus-Auburn-Opelika, GA-AL
Tuscaloosa	AL	Tuscaloosa, AL
Arkansas	AR	
Crittenden	AR	Memphis-Forrest City, TN-MS-AR
Garland	AR	Hot Springs-Malvern, AR
Jackson	AR	
Polk	AR	
Pulaski	AR	Little Rock-North Little Rock, AR
Washington	AR	Fayetteville-Springdale-Rogers, AR
Apache	AZ	
Cochise	AZ	Sierra Vista-Douglas, AZ
La Paz	AZ	
Del Norte	CA	
Garfield	CO	Edwards-Glenwood Springs, CO
Rio Blanco	CO	
Fairfield	CT	New York-Newark, NY-NJ-CT-PA
Hartford	CT	Hartford-East Hartford, CT
New Haven	CT	New York-Newark, NY-NJ-CT-PA
New London	CT	Hartford-East Hartford, CT
Kent	DE	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Sussex	DE	Salisbury-Cambridge, MD-DE
Alachua	FL	Gainesville-Lake City, FL
Brevard	FL	Palm Bay-Melbourne-Titusville, FL
Broward	FL	Miami-Port St. Lucie-Fort Lauderdale, FL
Escambia	FL	Pensacola-Ferry Pass, FL-AL
Hillsborough	FL	Tampa-St. Petersburg-Clearwater, FL
Leon	FL	Tallahassee, FL
Orange	FL	Orlando-Lakeland-Deltona, FL
Palm Beach	FL	Miami-Port St. Lucie-Fort Lauderdale, FL
Pinellas	FL	Tampa-St. Petersburg-Clearwater, FL
Polk	FL	Orlando-Lakeland-Deltona, FL
Sarasota	FL	North Port-Sarasota, FL
Seminole	FL	Orlando-Lakeland-Deltona, FL
Volusia	FL	Orlando-Lakeland-Deltona, FL
Honolulu	HI	Urban Honolulu, HI
Kauai	HI	
Black Hawk	IA	Waterloo-Cedar Falls, IA
Clinton	IA	Davenport-Moline, IA-IL
Johnson	IA	Cedar Rapids-Iowa City, IA
Lee	IA	Burlington-Fort Madison-Keokuk, IA-IL-MO
Montgomery	IA	
Muscatine	IA	Davenport-Moline, IA-IL
Palo Alto	IA	
Scott	IA	Davenport-Moline, IA-IL
Van Buren	IA	
Woodbury	IA	Sioux City, IA-NE-SD
Champaign	IL	Champaign-Urbana, IL
DuPage	IL	Chicago-Naperville, IL-IN-WI
Hamilton	IL	
Jersey	IL	St. Louis-St. Charles-Farmington, MO-IL
Kane	IL	Chicago-Naperville, IL-IN-WI
Macon	IL	Decatur, IL
McHenry	IL	Chicago-Naperville, IL-IN-WI
McLean	IL	Bloomington-Pontiac, IL
Peoria	IL	Peoria, IL
Randolph	IL	
Rock Island	IL	Davenport-Moline, IA-IL
Sangamon	IL	Springfield-Jacksonville-Lincoln, IL
St. Clair	IL	St. Louis-St. Charles-Farmington, MO-IL
Will	IL	Chicago-Naperville, IL-IN-WI
Winnebago	IL	Rockford-Freeport-Rochelle, IL
Allen	IN	Fort Wayne-Huntington-Auburn, IN
Clark	IN	Louisville/Jefferson County--Elizabethtown--Bardstown, KY-IN
Dubois	IN	
Floyd	IN	Louisville/Jefferson County--Elizabethtown--Bardstown, KY-IN
Greene	IN	
Howard	IN	Kokomo-Peru, IN
LaPorte	IN	Chicago-Naperville, IL-IN-WI
Monroe	IN	Bloomington-Bedford, IN
Spencer	IN	
St. Joseph	IN	South Bend-Elkhart-Mishawaka, IN-MI
Tippecanoe	IN	Lafayette-West Lafayette-Frankfort, IN
Vanderburgh	IN	Evansville, IN-KY
Vigo	IN	Terre Haute, IN
Whitley	IN	Fort Wayne-Huntington-Auburn, IN
Johnson	KS	Kansas City-Overland Park-Kansas City, MO-KS
Neosho	KS	
Sedgwick	KS	Wichita-Winfield, KS

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the 2006 NAAQS.
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statistical Area. CSA stands for Combined Statistical Area, which may include multiples and individual counties.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1] (cont.)

County	State	MSAs and Respective CSA[2]
Shawnee	KS	Topeka, KS
Sumner	KS	Wichita-Winfield, KS
Trego	KS	
Boyd	KY	Charleston-Huntington-Ashland, WV-OH-KY
Campbell	KY	Cincinnati-Wilmington-Maysville, OH-KY-IN
Christian	KY	Clarksville, TN-KY
Daviess	KY	Owensboro, KY
Fayette	KY	Lexington-Fayette--Richmond--Frankfort, KY
Hardin	KY	Louisville/Jefferson County--Elizabethtown--Bardstown, KY-IN
Jefferson	KY	Louisville/Jefferson County--Elizabethtown--Bardstown, KY-IN
Pulaski	KY	
Warren	KY	Bowling Green-Glasgow, KY
Jefferson Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Lafayette Parish	LA	Lafayette-Opelousas-Morgan City, LA
Orleans Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Ouachita Parish	LA	Monroe-Ruston, LA
Rapides Parish	LA	Alexandria, LA
St. Bernard Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Tangipahoa Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Terrebonne Parish	LA	Houma-Thibodaux, LA
West Baton Rouge Parish	LA	Baton Rouge, LA
Bristol	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Essex	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Franklin	MA	Springfield, MA
Hampden	MA	Springfield, MA
Hampshire	MA	Springfield, MA
Plymouth	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Suffolk	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Worcester	MA	Boston-Worcester-Providence, MA-RI-NH-CT
Baltimore	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Cecil	MD	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Dorchester	MD	Salisbury-Cambridge, MD-DE
Garrett	MD	
Howard	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Kent	MD	
Montgomery	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Prince George's	MD	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Androscoggin	ME	Portland-Lewiston-South Portland, ME
Cumberland	ME	Portland-Lewiston-South Portland, ME
Hancock	ME	
Kennebec	ME	
Oxford	ME	
Penobscot	ME	Bangor, ME
Allegan	MI	Grand Rapids-Kentwood-Muskegon, MI
Bay	MI	Saginaw-Midland-Bay City, MI
Chippewa	MI	
Genesee	MI	Detroit-Warren-Ann Arbor, MI
Ingham	MI	Lansing-East Lansing, MI
Kalamazoo	MI	Kalamazoo-Battle Creek-Portage, MI
Kent	MI	Grand Rapids-Kentwood-Muskegon, MI
Lenawee	MI	Detroit-Warren-Ann Arbor, MI
Macomb	MI	Detroit-Warren-Ann Arbor, MI
Manistee	MI	
Missaukee	MI	
Oakland	MI	Detroit-Warren-Ann Arbor, MI
St. Clair	MI	Detroit-Warren-Ann Arbor, MI
Washtenaw	MI	Detroit-Warren-Ann Arbor, MI
Becker	MN	
Cook	MN	
Lake	MN	Duluth, MN-WI
Scott	MN	Minneapolis-St. Paul, MN-WI
Stearns	MN	Minneapolis-St. Paul, MN-WI
Washington	MN	Minneapolis-St. Paul, MN-WI
Cass	MO	Kansas City-Overland Park-Kansas City, MO-KS
Cedar	MO	
Greene	MO	Springfield, MO
St. Louis	MO	St. Louis-St. Charles-Farmington, MO-IL
DeSoto	MS	Memphis-Forrest City, TN-MS-AR
Grenada	MS	
Harrison	MS	Gulfport-Biloxi, MS
Jackson	MS	Gulfport-Biloxi, MS
Cumberland	NC	Fayetteville-Sanford-Lumberton, NC
Davidson	NC	Greensboro--Winston-Salem--High Point, NC
Forsyth	NC	Greensboro--Winston-Salem--High Point, NC
Mecklenburg	NC	Charlotte-Concord, NC-SC
Montgomery	NC	
New Hanover	NC	Wilmington, NC
Pitt	NC	Greenville-Kinston-Washington, NC
Hall	NE	Grand Island, NE
Lancaster	NE	Lincoln-Beatrice, NE
Washington	NE	Omaha-Council Bluffs-Fremont, NE-IA
Belknap	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Cheshire	NH	
Grafton	NH	

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the 2006 NAAQS.
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statistical Area. CSA stands for Combined Statistical Area, which may include multiples and individual counties.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1] (cont.)

County	State	MSAs and Respective CSA[2]
Hillsborough	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Rockingham	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Atlantic	NJ	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Cumberland	NJ	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Essex	NJ	New York-Newark, NY-NJ-CT-PA
Gloucester	NJ	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Hudson	NJ	New York-Newark, NY-NJ-CT-PA
Hunterdon	NJ	New York-Newark, NY-NJ-CT-PA
Mercer	NJ	New York-Newark, NY-NJ-CT-PA
Middlesex	NJ	New York-Newark, NY-NJ-CT-PA
Morris	NJ	New York-Newark, NY-NJ-CT-PA
Ocean	NJ	New York-Newark, NY-NJ-CT-PA
Passaic	NJ	New York-Newark, NY-NJ-CT-PA
Warren	NJ	Allentown-Bethlehem-Easton, PA-NJ
Bernalillo	NM	Albuquerque-Santa Fe-Las Vegas, NM
Albany	NY	Albany-Schenectady, NY
Bronx	NY	New York-Newark, NY-NJ-CT-PA
Chautauqua	NY	
Erie	NY	Buffalo-Cheektowaga-Olean, NY
Essex	NY	
Kings	NY	New York-Newark, NY-NJ-CT-PA
Monroe	NY	Rochester-Batavia-Seneca Falls, NY
Onondaga	NY	Syracuse-Auburn, NY
Orange	NY	New York-Newark, NY-NJ-CT-PA
Queens	NY	New York-Newark, NY-NJ-CT-PA
Richmond	NY	New York-Newark, NY-NJ-CT-PA
Steuben	NY	Elmira-Corning, NY
Suffolk	NY	New York-Newark, NY-NJ-CT-PA
Allen	OH	Lima-Van Wert-Celina, OH
Athens	OH	
Belmont	OH	Wheeling, WV-OH
Butler	OH	Cincinnati-Wilmington-Maysville, OH-KY-IN
Clark	OH	Dayton-Springfield-Kettering, OH
Cuyahoga	OH	Cleveland-Akron-Canton, OH
Greene	OH	Dayton-Springfield-Kettering, OH
Hamilton	OH	Cincinnati-Wilmington-Maysville, OH-KY-IN
Lake	OH	Cleveland-Akron-Canton, OH
Lorain	OH	Cleveland-Akron-Canton, OH
Mahoning	OH	Youngstown-Warren, OH-PA
Medina	OH	Cleveland-Akron-Canton, OH
Montgomery	OH	Dayton-Springfield-Kettering, OH
Portage	OH	Cleveland-Akron-Canton, OH
Stark	OH	Cleveland-Akron-Canton, OH
Summit	OH	Cleveland-Akron-Canton, OH
Comanche	OK	Lawton, OK
Oklahoma	OK	Oklahoma City-Shawnee, OK
Pittsburg	OK	
Sequoyah	OK	Fort Smith, AR-OK
Armstrong	PA	Pittsburgh-New Castle-Weirton, PA-OH-WV
Bradford	PA	
Cambria	PA	Johnstown-Somerset, PA
Chester	PA	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Erie	PA	Erie-Meadville, PA
Greene	PA	
Lackawanna	PA	Scranton--Wilkes-Barre, PA
Mercer	PA	Youngstown-Warren, OH-PA
Monroe	PA	New York-Newark, NY-NJ-CT-PA
Philadelphia	PA	Philadelphia-Reading-Camden, PA-NJ-DE-MD
Tioga	PA	
Washington	PA	Pittsburgh-New Castle-Weirton, PA-OH-WV
Westmoreland	PA	Pittsburgh-New Castle-Weirton, PA-OH-WV
York	PA	Harrisburg-York-Lebanon, PA
Kent	RI	Boston-Worcester-Providence, MA-RI-NH-CT
Providence	RI	Boston-Worcester-Providence, MA-RI-NH-CT
Washington	RI	Boston-Worcester-Providence, MA-RI-NH-CT
Chesterfield	SC	
Florence	SC	Florence, SC
Oconee	SC	Greenville-Spartanburg-Anderson, SC
Spartanburg	SC	Greenville-Spartanburg-Anderson, SC
Brookings	SD	
Minnehaha	SD	Sioux Falls, SD
Dyer	TN	
Lawrence	TN	Nashville-Davidson--Murfreesboro, TN
Madison	TN	Jackson-Brownsville, TN
Maury	TN	Nashville-Davidson--Murfreesboro, TN
Montgomery	TN	Clarksville, TN-KY
Putnam	TN	
Shelby	TN	Memphis-Forrest City, TN-MS-AR
Sumner	TN	Nashville-Davidson--Murfreesboro, TN
Nueces	TX	Corpus Christi-Kingsville-Alice, TX
Tarrant	TX	Dallas-Fort Worth, TX-OK
Uintah	UT	
Washington	UT	St. George, UT
Albemarle	VA	Charlottesville, VA
Charles City	VA	Richmond, VA
Chesterfield	VA	Richmond, VA
Frederick	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the 2006 NAAQS.
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statistical Area. CSA stands for Combined Statistical Area, which may include multiples and individual counties.

Cleanest Counties for Short-Term Particle Pollution (24-hour $PM_{2.5}$)[1] (cont.)

County	State	MSAs and Respective CSA[2]
Hampton City	VA	Virginia Beach-Norfolk, VA-NC
Henrico	VA	Richmond, VA
Loudoun	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Lynchburg City	VA	Lynchburg, VA
Norfolk City	VA	Virginia Beach-Norfolk, VA-NC
Richmond City	VA	Richmond, VA
Roanoke	VA	Roanoke, VA
Rockingham	VA	Harrisonburg-Staunton, VA
Salem City	VA	Roanoke, VA
Virginia Beach City	VA	Virginia Beach-Norfolk, VA-NC
Bennington	VT	
Chittenden	VT	Burlington-South Burlington-Barre, VT
Rutland	VT	
Ashland	WI	
Brown	WI	Green Bay-Shawano, WI
Eau Claire	WI	Eau Claire-Menomonie, WI
Forest	WI	
Grant	WI	
Kenosha	WI	Chicago-Naperville, IL-IN-WI
La Crosse	WI	La Crosse-Onalaska, WI-MN
Milwaukee	WI	Milwaukee-Racine-Waukesha, WI
Outagamie	WI	Appleton-Oshkosh-Neenah, WI
Ozaukee	WI	Milwaukee-Racine-Waukesha, WI
Sauk	WI	Madison-Janesville-Beloit, WI
Taylor	WI	
Vilas	WI	
Waukesha	WI	Milwaukee-Racine-Waukesha, WI
Berkeley	WV	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Brooke	WV	Pittsburgh-New Castle-Weirton, PA-OH-WV
Cabell	WV	Charleston-Huntington-Ashland, WV-OH-KY
Hancock	WV	Pittsburgh-New Castle-Weirton, PA-OH-WV
Harrison	WV	
Kanawha	WV	Charleston-Huntington-Ashland, WV-OH-KY
Marion	WV	Morgantown-Fairmont, WV
Marshall	WV	Wheeling, WV-OH
Monongalia	WV	Morgantown-Fairmont, WV
Ohio	WV	Wheeling, WV-OH
Wood	WV	Parkersburg-Marietta-Vienna, WV-OH
Sweetwater	WY	

Notes:

1. Monitors in these counties reported no days when $PM_{2.5}$ levels reached the unhealthful range using the Air Quality Index based on the 2006 NAAQS.
2. MSA and CSA are terms used by the U.S. Office of Management and Budget for statistical purposes. MSA stands for Metropolitan Statistical Area. CSA stands for Combined Statistical Area, which may include multiples and individual counties.

Top 25 Cleanest Counties for Year-Round Particle Pollution (Annual $PM_{2.5}$)[1]

2020 Rank[2]	County	State	Design Value[3]
1	Burke	ND	2.9
1	Kauai	HI	2.9
3	Hillsborough	NH	3.4
3	Lake	MN	3.4
5	Essex	NY	3.6
5	Custer	SD	3.6
5	Honolulu	HI	3.6
8	Hancock	ME	3.7
8	Jackson	SD	3.7
10	Mercer	ND	3.8
10	Billings	ND	3.8
12	Gallatin	MT	4.0
12	Hughes	SD	4.0
14	Maui	HI	4.1
15	Litchfield	CT	4.2
15	McKenzie	ND	4.2
15	Ashland	WI	4.2
15	Forest	WI	4.2
19	La Paz	AZ	4.3
19	Park	WY	4.3
21	Laramie	WY	4.4
21	Cook	MN	4.4
23	Campbell	WY	4.5
23	Williams	ND	4.5
23	Belknap	NH	4.5
23	Vilas	WI	4.5

Notes:

1. This list represents counties with the lowest levels of monitored long-term $PM_{2.5}$ air pollution.
2. Counties are ranked by design value.
3. The design value is the calculated concentration of a pollutant based on the form of the Annual $PM_{2.5}$ National Ambient Air Quality Standard, and is used by EPA to determine whether the air quality in a county meets the current (2012) standard (U.S. EPA).

Cleanest Counties for Ozone Air Pollution[1]

County	State	Metropolitan Statistical Area
Denali Borough	AK	
Fairbanks North Star Borough	AK	Fairbanks, AK
Matanuska-Susitna Borough	AK	Anchorage, AK
DeKalb	AL	Scottsboro-Fort Payne, AL
Elmore	AL	Montgomery-Selma-Alexander City, AL
Etowah	AL	Gadsden, AL
Houston	AL	Dothan-Ozark, AL
Morgan	AL	Huntsville-Decatur, AL
Russell	AL	Columbus-Auburn-Opelika, GA-AL
Sumter	AL	
Clark	AR	
Newton	AR	
Polk	AR	
Washington	AR	Fayetteville-Springdale-Rogers, AR
Colusa	CA	
Glenn	CA	
Lake	CA	
Marin	CA	San Jose-San Francisco-Oakland, CA
Mendocino	CA	
Monterey	CA	Salinas, CA
San Francisco	CA	San Jose-San Francisco-Oakland, CA
Baker	FL	Jacksonville-St. Marys-Palatka, FL-GA
Bay	FL	Panama City, FL
Collier	FL	Cape Coral-Fort Myers-Naples, FL
Columbia	FL	Gainesville-Lake City, FL
Flagler	FL	Orlando-Lakeland-Deltona, FL
Holmes	FL	
Leon	FL	Tallahassee, FL
Liberty	FL	
Okaloosa	FL	Crestview-Fort Walton Beach-Destin, FL
Santa Rosa	FL	Pensacola-Ferry Pass, FL-AL
Volusia	FL	Orlando-Lakeland-Deltona, FL
Wakulla	FL	Tallahassee, FL
Chatham	GA	Savannah-Hinesville-Statesboro, GA
Chattooga	GA	Chattanooga-Cleveland-Dalton, TN-GA
Glynn	GA	Brunswick, GA
Honolulu	HI	Urban Honolulu, HI
Montgomery	IA	
Van Buren	IA	
Johnson	KS	Kansas City-Overland Park-Kansas City, MO-KS
Leavenworth	KS	Kansas City-Overland Park-Kansas City, MO-KS
Neosho	KS	
Shawnee	KS	Topeka, KS
Sumner	KS	Wichita-Winfield, KS
Trego	KS	
Bell	KY	
Carter	KY	Charleston-Huntington-Ashland, WV-OH-KY
Christian	KY	Clarksville, TN-KY
Edmonson	KY	Bowling Green-Glasgow, KY
Fayette	KY	Lexington-Fayette--Richmond--Frankfort, KY
Perry	KY	
Pike	KY	
Pulaski	KY	
Trigg	KY	Clarksville, TN-KY
Warren	KY	Bowling Green-Glasgow, KY
Bossier Parish	LA	Shreveport-Bossier City-Minden, LA
Caddo Parish	LA	Shreveport-Bossier City-Minden, LA
Lafourche Parish	LA	Houma-Thibodaux, LA
Ouachita Parish	LA	Monroe-Ruston, LA
St. James Parish	LA	New Orleans-Metairie-Hammond, LA-MS
Garrett	MD	
Androscoggin	ME	Portland-Lewiston-South Portland, ME
Aroostook	ME	
Kennebec	ME	
Oxford	ME	
Penobscot	ME	Bangor, ME
Becker	MN	
Carlton	MN	Duluth, MN-WI
Crow Wing	MN	
Hennepin	MN	Minneapolis-St. Paul, MN-WI
Lake	MN	Duluth, MN-WI
Lyon	MN	
Mille Lacs	MN	Minneapolis-St. Paul, MN-WI
Olmsted	MN	Rochester-Austin, MN
St. Louis	MN	Duluth, MN-WI
Washington	MN	Minneapolis-St. Paul, MN-WI
Cedar	MO	
Greene	MO	Springfield, MO
Jasper	MO	Joplin-Miami, MO-OK
Hancock	MS	Gulfport-Biloxi, MS
Hinds	MS	Jackson-Vicksburg-Brookhaven, MS
Lauderdale	MS	
Lee	MS	Tupelo-Corinth, MS
Yalobusha	MS	
Flathead	MT	
Lewis and Clark	MT	
Missoula	MT	Missoula, MT
Phillips	MT	
Richland	MT	
Rosebud	MT	
Alexander	NC	Hickory-Lenoir-Morganton, NC
Caldwell	NC	Hickory-Lenoir-Morganton, NC
Carteret	NC	New Bern-Morehead City, NC

Notes:

1. This list represents counties with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2008 NAAQS.

Cleanest Counties for Ozone Air Pollution[1] (cont.)

County	State	Metropolitan Statistical Area
Caswell	NC	
Cumberland	NC	Fayetteville-Sanford-Lumberton, NC
Durham	NC	Raleigh-Durham-Cary, NC
Edgecombe	NC	Rocky Mount-Wilson-Roanoke Rapids, NC
Granville	NC	Raleigh-Durham-Cary, NC
Johnston	NC	Raleigh-Durham-Cary, NC
Lee	NC	Fayetteville-Sanford-Lumberton, NC
Martin	NC	
Montgomery	NC	
New Hanover	NC	Wilmington, NC
Pitt	NC	Greenville-Kinston-Washington, NC
Rowan	NC	Charlotte-Concord, NC-SC
Swain	NC	
Billings	ND	
Burke	ND	
Burleigh	ND	Bismarck, ND
Cass	ND	Fargo-Wahpeton, ND-MN
Dunn	ND	
McKenzie	ND	
Mercer	ND	
Oliver	ND	Bismarck, ND
Williams	ND	
Lancaster	NE	Lincoln-Beatrice, NE
Belknap	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Grafton	NH	
Merrimack	NH	Boston-Worcester-Providence, MA-RI-NH-CT
Mahoning	OH	Youngstown-Warren, OH-PA
Portage	OH	Cleveland-Akron-Canton, OH
Adair	OK	
Ottawa	OK	Joplin-Miami, MO-OK
Sequoyah	OK	Fort Smith, AR-OK
Bradford	PA	
Cambria	PA	Johnstown-Somerset, PA
Franklin	PA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Aiken	SC	Augusta-Richmond County, GA-SC
Anderson	SC	Greenville-Spartanburg-Anderson, SC
Berkeley	SC	Charleston-North Charleston, SC
Colleton	SC	
Darlington	SC	Florence, SC
Horry	SC	Myrtle Beach-Conway, SC-NC
Custer	SD	
Jackson	SD	
Meade	SD	Rapid City-Spearfish, SD
Anderson	TN	Knoxville-Morristown-Sevierville, TN
DeKalb	TN	
Brewster	TX	
Cameron	TX	Brownsville-Harlingen-Raymondville, TX
Gregg	TX	Longview, TX
Harrison	TX	Longview, TX
Hidalgo	TX	McAllen-Edinburg, TX
Nueces	TX	Corpus Christi-Kingsville-Alice, TX
Polk	TX	
Webb	TX	Laredo, TX
San Juan	UT	
Fauquier	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Frederick	VA	Washington-Baltimore-Arlington, DC-MD-VA-WV-PA
Roanoke	VA	Roanoke, VA
Rockbridge	VA	
Wythe	VA	
Chittenden	VT	Burlington-South Burlington-Barre, VT
Rutland	VT	
Clallam	WA	
Skagit	WA	Seattle-Tacoma, WA
Ashland	WI	
Forest	WI	
La Crosse	WI	La Crosse-Onalaska, WI-MN
Marathon	WI	Wausau-Stevens Point-Wisconsin Rapids, WI
Taylor	WI	
Vilas	WI	
Greenbrier	WV	
Monongalia	WV	Morgantown-Fairmont, WV
Big Horn	WY	
Carbon	WY	
Converse	WY	
Fremont	WY	
Natrona	WY	Casper, WY
Teton	WY	Teton, WY
Weston	WY	

Notes:

1. This list represents counties with no monitored ozone air pollution in unhealthful ranges using the Air Quality Index based on 2008 NAAQS.

Health Effects of Ozone and Particle Pollution

Two types of air pollution dominate in the U.S.: ozone and particle pollution.[1] These two pollutants threaten the health and the lives of millions of Americans. Thanks to the Clean Air Act, the U.S. has far less of both pollutants now than in the past. Still, nearly 150 million people live in counties where monitors show unhealthy levels of one or both—meaning the air a family breathes could shorten life, cause lung cancer or have other harmful effects.

So what are particle pollution and ozone?

Particle Pollution

Ever look at dirty tailpipe exhaust?

The dirty, smoky part of that stream of exhaust is made of particle pollution. Overwhelming evidence shows that particle pollution—like that coming from that exhaust smoke—can kill. Particle pollution can increase the risk of heart disease, lung cancer and asthma attacks and can interfere with the growth and work of the lungs.

What Is Particle Pollution?

Particle pollution refers to a mix of tiny solid and liquid particles that are in the air we breathe. Many of the particles are so small as to be invisible, but when levels are high, the air becomes opaque. Nothing about particle pollution is simple. In fact, it is so dangerous that it can shorten your life.

Size matters. Particles themselves are different sizes. Some are one-tenth the diameter of a strand of hair. Many are even tinier; some are so small they can only be seen with an electron microscope. Because of their size, you cannot see the individual particles. You can only see the haze that forms when millions of particles blur the spread of sunlight.

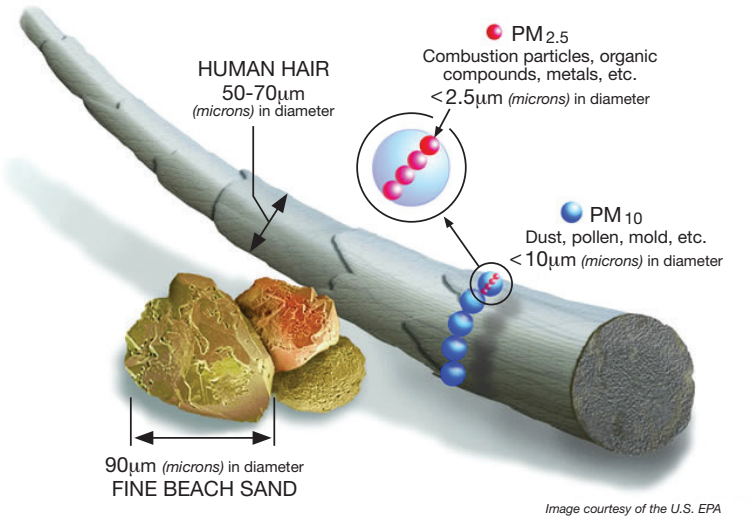


Image courtesy of the U.S. EPA

Researchers categorize particles according to size, grouping them as coarse, fine and ultrafine. Coarse particles (shown as blue dots in the illustration) fall between 2.5 microns and 10 microns in diameter and are called $PM_{10-2.5}$. Fine particles (shown as pink dots in the illustration) are 2.5 microns in diameter or smaller and are called $PM_{2.5}$. Ultrafine particles (not shown) are smaller than 0.1 micron in diameter[2] and are small enough to pass through the lung tissue into the blood stream, circulating like the oxygen molecules themselves. No matter what the size, particles can harm your health.

The differences in size make a big difference in where particles affect us. Our natural defenses help us to cough or sneeze some coarse particles out of our bodies. However, those defenses do not keep out smaller fine or ultrafine particles. These particles get trapped in the lungs, while the smallest are so minute that they can pass through the lungs into the bloodstream, just like the essential oxygen molecules we need to survive.

"A mixture of mixtures." Because particles form in so many ways, they can be composed of many different compounds. Although we often think of particles as solids, not all are. Some are liquid; some are solids suspended in liquids. As EPA put it, particles are really "a mixture of mixtures."[3]

The mixtures differ between different regions in the United States and in different times of the year. Much of that comes from the sources that produce the particles. For example, nitrate particles from motor vehicle exhaust form a larger proportion of the unhealthful mix in the winter in western states, especially California and portions of the Midwest. By contrast, eastern states have more sulfate particles than the West on average, largely due to the high levels of sulfur dioxide emitted by large, coal-fired power plants.[4]

Who Is at Risk?

Anyone who lives where particle pollution levels are high is at risk. Some people face higher risk, however. People at the greatest risk from particle pollution exposure include:

- Infants, children and teens;[5]
- People with lung disease, especially asthma, but also people with chronic obstructive pulmonary disease (COPD);[6]
- People with cardiovascular disease[7];
- People of color[8];
- Current or former smokers[9];
- People with low incomes;[10] and
- People who are obese.[11]

People with lung cancer also appear to be at higher risk from particle pollution, according to a 2016 study of more than 350,000 patients in California. Researchers looked at the exposure they experienced between 1988 and 2011 and found that where higher concentrations of particle pollution existed, people with lung cancer had poorer survival.[12]

EPA had concluded in the past that people with diabetes are also at higher risk of harm from particle pollution. In their most recent review of people at risk, they revised that decision. The evidence of increased risk remains strong, especially given the increased risk of cardiovascular disease from diabetes. Research has found evidence that long-term exposure to particle pollution may increase the risk of developing diabetes. Two independent reviews of published research found that particle pollution may increase the risk of developing type 2 diabetes mellitus.[13]

What Can Particles Do to Your Health?

Particle pollution can be very dangerous to breathe depending on the level. Breathing particle pollution may trigger illness, hospitalization and premature death, risks that are showing up in new studies that validate earlier research.

Thanks to steps taken to reduce particle pollution, good news is growing from researchers who study the drop in year-round levels of particle pollution.

- Looking at air quality in 545 counties in the U.S. between 2000 and 2007, researchers found that people had approximately four months added to their life expectancy on average due to cleaner air. Women and people who lived in urban and densely populated counties benefited the most.[14]
- Another long-term study of people in six U.S. cities tracked from 1974 to 2009 added more evidence of the benefits. The findings suggest that cleaning up particle pollution had almost immediate health benefits. The researchers estimated that the U.S. could prevent approximately 34,000 premature deaths a year if the nation could lower annual levels of particle pollution by 1 $\mu g/m^3$.[15]

These studies add to the growing research that cleaning up air pollution improves life and health.

Short-Term Exposure Can Be Deadly

First, short-term exposure to particle pollution can kill.[16] Peaks or spikes in particle pollution can last from hours to days. Premature deaths from breathing these particles can occur on the very day that particle levels are high, or within one to two months afterward. Particle pollution does not just make people die a few days earlier than they might otherwise—these deaths would not have occurred so early if the air were cleaner.

Even low levels of particles can be deadly. A 2016 study found that people aged 65 and older in New England faced a higher risk of premature death from particle pollution, even in places that met current standards for short-term particle pollution.[17] Another study in 2017 looked more closely at Boston and found a similar higher risk of premature death from particle pollution in a city that meets current limits on short-term particle pollution.[18] Looking nationwide in a 2017 study, researchers found more evidence that older adults faced a higher risk of premature death even when levels of short-term particle pollution remained well below the current national standards. This was consistent whether the older adults lived in cities, suburbs or rural areas.[19] Some of the strongest research has documented that short-term exposure to particle pollution causes premature death from respiratory and cardiovascular causes.[20]

Particle pollution also has many other harmful effects, ranging from decreased lung function to heart attacks. Extensive research has linked short-term increases in particle pollution to:

- increased mortality in infants;[21]
- increased hospital admissions for cardiovascular disease, including heart attacks and ischemic heart disease;[22]
- increased hospital admissions and emergency department visits for COPD;[23]
- increased hospitalization for asthma among children;[24] and
- increased severity of asthma attacks in children.[25]

A 2008 study of lifeguards in Galveston, TX, provided evidence of the impact of short-term exposure to particle pollution on healthy, active adults. Testing the breathing capacity of these outdoor workers several times a day, researchers found that many lifeguards had reduced lung volume when fine particle levels were high. Because of this research, Galveston became the first city in the nation to install an air quality warning flag system on the beach.[26]

Year-Round Exposure

Breathing high levels of particle pollution day in and day out can also be deadly, as landmark studies in the 1990s conclusively showed[27] and as later studies verified.[28] Recent research has confirmed that long-term exposure to particle pollution still kills, even with the declining levels in the U.S. since 2000[29] and even in areas, such as New England, that currently meet the official limit, or standard, for year-round particle pollution.[30]

In 2013, the International Agency for Research on Cancer (known as IARC), part of the World Health Organization, concluded that particle pollution causes lung cancer. The IARC based its decision on the review of multiple studies from the U.S., Europe, and Asia and the presence of carcinogens on the particles.[31]

Research has also linked year-round exposure to particle pollution to:

- development of asthma in children;[32]
- worsening of COPD in adults;[33]
- slowed lung function growth in children and teenagers;[34]

- increased risk of death from cardiovascular disease;[35] and
- increased risk of heart attacks and strokes.[36]

Studies examining the impact on the nervous system of long-term exposure to particle pollution have found links to cognitive affects in adults including reduced brain volume, cognitive decrements and dementia.[37] Scientists have found evidence that particle pollution may impact pregnancy and birth outcomes, such as preterm birth, low birth weight and fetal and infant mortality.[38]

The EPA is conducting their new review of the current research on particle pollution. Their findings from the last review, completed in December 2019,[39] are highlighted in the box below.

EPA Concludes Fine Particle Pollution Poses Serious Health Threats (2019)

- Causes early death (both short-term and long-term exposure)
- Causes cardiovascular harm (e.g., heart attacks, strokes, heart disease, congestive heart failure)
- Likely to cause respiratory harm (e.g., worsened asthma, worsened COPD, inflammation)
- Likely to cause cancer
- Likely to cause harm to the nervous system (e.g. reduced brain volume, cognitive effects)
- May cause reproductive and developmental harm

—U.S. Environmental Protection Agency, Integrated Science Assessment for Particulate Matter, December 2019. EPA 600/R-19/188

Where Does Particle Pollution Come From?

Particle pollution forms through two separate processes—mechanical and chemical.

Mechanical processes break down bigger bits into smaller bits with the material remaining essentially the same, only becoming smaller. Dust storms, construction and demolition, mining operations, and agriculture are among the activities that produce particles. Tire, brake pad and road wear can also create particles.

Combustion of carbon-based fuels generates most of the fine particles in our atmosphere. Burning wood in residential fireplaces and wood stoves as well as wildfires, agricultural fires and prescribed fires are some of the largest sources. Wildfires are growing, particularly in the Mountain West because of climate change. These processes create about 36 percent of fine particles.[40] Burning fossil fuels in factories, power plants, diesel- and gasoline-powered motor vehicles (cars and trucks) and equipment emits a large part of the raw materials for fine particles.

Chemical processes in the atmosphere create most of the tiniest fine and ultrafine particles in the air. Burning fuels, other human activity and natural sources emit gases that form particles in the air. These gases can oxidize and then condense to become a particle of a simple chemical compound. Or they can react with other gases or particles in the atmosphere to form a particle of a different or of multiple chemical compounds. Particles formed by this latter process come from the reaction of elemental carbon (soot), heavy metals, sulfur dioxide (SO_2), nitrogen oxides (NO_x), ammonia (NH_3) and volatile organic compounds with water and other compounds in the atmosphere.[41]

Are Some Particles More Dangerous Than Others?

With so many sources of particles, researchers want to know if some particles pose greater risk than others. Researchers are exploring possible differences in health effects of the sizes of particles and particles from different sources, such as diesel particles from trucks and buses or sulfates from coal-fired power plants. Recent studies have tried to answer this question. So far, the answers are complicated.

Each particle may have many different components. The building blocks of each can include several biological and chemical components. Bacteria, pollen and other biological ingredients can combine in the particle with chemical agents, such as heavy metals, elemental carbon, dust and secondary species like sulfates and nitrates. These combinations mean that particles can have complex effects on the body.[42]

Some studies have found that different kinds of particles may have greater risk for different health outcomes.[43,44,45]

Other studies have identified the challenges of exploring all the kinds of particles and their health effects with the limited monitoring across the nation.[46,47] Some particles serve as carriers for other chemicals that are also toxic, and the combination may worsen the impact.[48,49]

The best evidence shows that having less of all types of particles in the air leads to better health and longer lives.

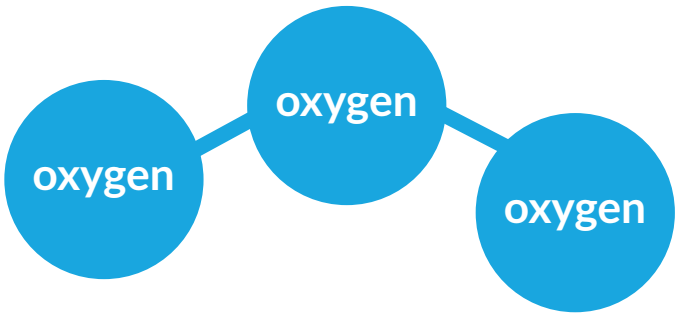
Ozone

It may be hard to imagine that pollution could be invisible, but ozone begins that way. As ozone concentrates and mixes with other pollutants, we often call it by its older, more common name—smog. It is currently one of the least well-controlled pollutants in the United States.[50] And it is also one of the most dangerous.

Scientists have studied the effects of ozone on health for decades. Hundreds of studies have confirmed that ozone harms people at levels currently found in the United States. In the last decade, we have learned that it can also be deadly.

What Is Ozone?

Ozone (O_3) is a gas molecule composed of three oxygen atoms. Often called "smog," ozone is harmful to breathe. Ozone aggressively attacks lung tissue by reacting chemically with it. When ozone is present, there are other harmful pollutants created by the same processes that make ozone.



The ozone layer found high in the upper atmosphere (the stratosphere) shields us from much of the sun's ultraviolet radiation. However, ozone air pollution at ground level where we can breathe it (in the troposphere) causes serious health problems.

Where Does Ozone Come From?

Ozone develops in the atmosphere from gases that come out of tailpipes, smokestacks and many other sources. When these gases come in contact with sunlight, they react and form ozone smog.

The essential raw ingredients for ozone are nitrogen oxides (NOx) and volatile organic compounds (VOCs). They are produced primarily when fossil fuels like gasoline, oil or coal are burned or when some chemicals, like solvents, evaporate. NOx is emitted from power plants, motor vehicles and other sources of high-heat combustion. VOCs are emitted from motor vehicles, chemical plants, refineries, factories, gas stations, paint and other sources.[51]

If the ingredients are present under the right conditions, they react to form ozone. Sunlight is key. And because the reaction takes place in the atmosphere, the ozone often shows up downwind of the sources of the original gases. In addition, winds can carry ozone far from where it formed, even internationally across borders and across the oceans.

You may have wondered why "ozone action day" warnings are sometimes followed by recommendations to avoid activities such as mowing your lawn or driving your car. Lawn mower exhaust and gasoline vapors contain nitrogen oxides (NOx) and volatile organic compounds (VOCs) that are key to the formation of ozone in the presence of heat and sunlight.

Who Is at Risk from Breathing Ozone?

Anyone who spends time outdoors where ozone pollution levels are high may be at risk. Four groups of people are especially vulnerable to the effects of breathing ozone:

- children and teens[52];
- anyone 65 and older[53];
- people with existing lung diseases, such as asthma and chronic obstructive pulmonary disease (also known as COPD, which includes emphysema and chronic bronchitis[54]; and
- people who work or exercise outdoors.[55]

In addition, some evidence suggests that other groups—including women, people who suffer from obesity and people with low incomes—may also face higher risk from ozone.[56] More research is needed to confirm these findings.

The impact on your health can depend on many factors, however. For example, the risks are greater if ozone levels are higher, if you are breathing faster because you're working or exercising outdoors or if you spend more time outdoors.

Again, the impact of even short-term exposure to ozone pollution on healthy adults was demonstrated in the Galveston lifeguard study. In addition to the harmful effects of particle pollution, lifeguards had greater obstruction of their airways at the end of the day when ozone levels were high.[57]

How Ozone Pollution Harms Your Health

Premature death. Breathing ozone can shorten your life. Strong evidence exists of the deadly impact of ozone from large studies conducted in cities across the U.S., in Europe and in Asia. Researchers repeatedly found that the risk of premature death increased with higher levels of ozone.[58] Newer research has confirmed that ozone increased the risk of premature death even when other pollutants also are present.[59]

Immediate breathing problems. Many areas in the United States produce enough ozone during the summer months to cause health problems that can be felt right away. Immediate problems—in addition to increased risk of premature death—include:

- shortness of breath, wheezing and coughing;
- asthma attacks;
- increased risk of respiratory infections;

- increased susceptibility to pulmonary inflammation; and
- increased need for people with lung diseases, like asthma or chronic obstructive pulmonary disease (COPD), to receive medical treatment and to go to the hospital.[60,61,62]

Long-term exposure risks. New studies warn of serious effects from breathing ozone over longer periods. With more long-term data, scientists are finding that long-term exposure—that is, for periods longer than eight hours, including days, months or years—may increase the risk of early death.

- Examining the records from a long-term national database, researchers found a higher risk of death from respiratory diseases associated with increases in ozone.[63]
- New York researchers looking at hospital records for children's asthma found that the risk of admission to hospitals for asthma increased with chronic exposure to ozone. Younger children and children from low-income families were more likely than other children to need hospital admissions even during the same time periods.[64]
- California researchers analyzing data from their long-term Southern California Children's Health Study found that some children with certain genes were more likely to develop asthma as adolescents in response to the variations in ozone levels in their communities.[65]
- Studies link lower birth weight and decreased lung function in newborns to ozone levels in their community.[66] This research provides increasing evidence that ozone may harm newborns.

Breathing other pollutants in the air may make your lungs more responsive to ozone—and breathing ozone may increase your body's response to other pollutants. For example, research warns that breathing sulfur dioxide and nitrogen oxide—two pollutants common in the eastern U.S.—can make the lungs react more strongly than just breathing ozone alone. Breathing ozone may also increase the response to allergens in people with allergies. A large study published in 2009 found that children were more likely to suffer from hay fever and respiratory allergies when ozone and $PM_{2.5}$ levels were high.[67]

Research shows lower levels of ozone cause harm. EPA released their latest complete review of the current research on ozone pollution in February 2013.[68] EPA had engaged a panel of expert scientists, the Clean Air Scientific Advisory Committee, to help them assess the evidence that was brought together by EPA; in particular, they examined research published between 2006 and 2012. The experts on the committee and EPA concluded that ozone pollution posed multiple, serious threats to health. Their findings are highlighted in the box below. Based on that review, EPA strengthened the official limit on ozone, called the National Ambient Air Quality Standard, in 2015.

However, new research provides evidence that ozone can cause serious harm even at much lower levels. In a 2017 scientific paper, researchers provided further evidence in a nationwide study that older adults faced a higher risk of premature death even when levels of ozone pollution remained well below the current national standard.[69]

EPA Concludes Ozone Pollution Poses Serious Health Threats (2013)

- Causes respiratory harm (e.g., worsened asthma, worsened COPD, inflammation)
- Likely to cause early death (both short-term and long-term exposure)
- Likely to cause cardiovascular harm (e.g., heart attacks, strokes, heart disease, congestive heart failure)
- May cause harm to the central nervous system
- May cause reproductive and developmental harm

—U.S. Environmental Protection Agency, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants*, 2013. EPA/600/R-10/076F.

Focusing on Children's Health

Children face special risks from air pollution because their lungs are growing and because they are so active and breathe in a great deal of air.

Just like the arms and legs, the largest portion of a child's lungs will grow long after he or she is born. Eighty percent of their tiny air sacs develop after birth. Those sacs, called the alveoli, are where the life-sustaining transfer of oxygen to the blood takes place. The lungs and their alveoli aren't fully grown until children become adults.[70] In addition, the body's defenses that help adults fight off infections are still developing in young bodies.[71] Children have more respiratory infections than adults, which also seems to increase their susceptibility to air pollution.[72]

Furthermore, children don't behave like adults, and their behavior also affects their vulnerability. They are outside for longer periods and are usually more active when outdoors. Consequently, they inhale more polluted outdoor air than adults typically do.[73]

Air Pollution Affects Children Before They Are Born

Several studies have found air pollution linked to harm to children while they are still in the womb. A large study in California found that higher particle pollution levels increased the risk of preterm birth.[74] Pregnant women exposed to even low levels of particle pollution had higher risk for preterm birth in a Boston study.[75] Preterm births occurred more frequently when particle pollution spiked, as an Australian study found, even when they controlled for other risk factors.[76]

Air Pollution Limits Lung Growth in Children

The Southern California Children's Health study looked at the long-term effects of air pollution on children and teenagers. Tracking 1,759 children who were between ages 10 and 18 from 1993 to 2001, researchers found that those who grew up in more polluted areas face the increased risk of having reduced lung growth, which may never recover to their full capacity. The average drop in lung function was similar to the impact of growing up in a home with parents who smoked.[77]

Community health studies are pointing to less obvious, but serious effects from year-round exposure to ozone, especially for children. Scientists followed 500 Yale University students and determined that living just four years in a region with high levels of ozone and related co-pollutants was associated with diminished lung function and frequent reports of respiratory symptoms.[78] Another earlier report from the Children's Health study of 3,300 schoolchildren in Southern California found reduced lung function in girls with asthma and boys who spent more time outdoors in areas with high levels of ozone.[79]

Cleaning Up Pollution Can Reduce Risk to Children

There is also real-world evidence that reducing air pollution can help protect children.

A 2015 follow-up to the Southern California Children's Health study showed that reducing pollution could improve children's health. They compared the children who had been part of their earlier studies to a new group of 863 children living in the same area, but growing up between 2007 and 2011, when the air in Southern California was much cleaner. Children growing up in the cleaner air had much greater lung function growth, a benefit that may help them throughout their lives. As the researchers noted, their study suggested that "all children have the potential to benefit from improvements in air quality."[80]

Further evidence that cleaner air provides real benefits to children's health came in a 2016 report from the same study exploring changes to 4,602 children's respiratory symptoms such as coughing, congestion and phlegm. The study looked at the changes in these symptoms in three groups of children living in Southern California over different periods of time when air quality also differed (1993-2001, 1996-2004, and 2003-2012). As air quality improved, the children in the study suffered fewer bronchial symptoms

whether they had asthma or not. In communities where the air quality improved the most, the children experienced even fewer symptoms.[81]

So, does cleaning up the air really improve children's health? In 2017, the researchers reviewed these long-term studies of children in Southern California and the impact of improvements in air quality on their health. They concluded that the 20 years of collected data provided strong evidence of the potential to improve children's health by reducing some of the most common outdoor air pollutants.[82]

The U.S. is not alone in this finding. In Switzerland, particle pollution dropped during a period in the 1990s. Researchers there tracked 9,000 children over a nine-year period, following their respiratory symptoms. After taking other factors such as family characteristics and indoor air pollution into account, the researchers noted that during the years with less pollution, the children had fewer episodes of chronic cough, bronchitis, common cold and conjunctivitis symptoms.[83]

Disparities in the Impact of Air Pollution

The burden of air pollution is not evenly shared. Poorer people and some racial and ethnic groups are among those who often face higher exposure to pollutants and who may experience greater responses to such pollution. Many studies have explored the differences in harm from air pollution to racial or ethnic groups and people who are in a low socioeconomic position, have less education, or live nearer to major sources of pollution,[84] including a workshop the American Lung Association held in 2001 that focused on urban air pollution and health inequities.[85] The most recent EPA review of the research on the health effects of particle pollution concluded that nonwhite populations, especially blacks, faced higher risk from particle pollution.[86]

Many studies have looked at differences in the impact of air pollution on premature death. Recent studies have looked at the mortality in the Medicaid population and found that those who live in predominately black or African American communities suffered greater risk of premature death from particle pollution than those who live in communities that are predominately white.[87] Another large study found that Hispanics and Asians, but especially blacks, had a higher risk of premature death from particle pollution than whites did. This study found that income did not drive the differences. Higher-income blacks who had higher income than many whites still faced greater risk than those whites, suggesting that the impact of other factors such as chronic stress as a result of discrimination may be playing a role.[88] Other researchers have found greater risk for African Americans from hazardous air pollutants, including those pollutants that also come from traffic sources.[89] Due to decades of residential segregation, African Americans tend to live where there is greater exposure to air pollution.[90]

Socioeconomic position also appears tied to greater harm from air pollution. Multiple large studies show evidence of that link. Low socioeconomic status consistently increased the risk of premature death from fine particle pollution among 13.2 million Medicare recipients studied in the largest examination of particle pollution-related mortality nationwide.[91] In a 2008 study that found greater risk for premature death for communities with higher African American populations, researchers also found greater risk for people living in areas with higher unemployment or higher use of public transportation.[92] A 2008 study of Washington, DC, found that while poor air quality and worsened asthma went hand in hand in areas where Medicaid enrollment was high, the areas with the highest Medicaid enrollment did not always have the strongest association of high air pollution and asthma attacks.[93] A 2016 study of New Jersey residents found that the risk of dying early from long-term exposure to particle pollution was higher in communities with larger African American populations, lower home values and lower median income.[94] Studies of Atlanta, GA, found that particle pollution increased the risk of asthma attacks for zip codes where poverty was high and among people eligible for Medicaid.[95]

Scientists have speculated that there are three broad reasons why disparities may exist. First, groups may face greater exposure to pollution because of factors ranging from racism to class bias to housing market dynamics and land costs. For example, pollution sources tend to be located near disadvantaged communities, increasing exposure to harmful pollutants. Second, low social position may make some groups more susceptible to health threats because of factors related to their disadvantage. Lack of access to health care, grocery stores and good jobs; poorer job opportunities; dirtier workplaces; and higher traffic exposure are among the factors that could handicap groups and increase the risk of harm. Finally, existing health conditions, behaviors or traits may predispose some groups to greater risk. For example, people of color are among the groups most at risk from air pollutants, and the elderly, African Americans, Mexican Americans and people living near a central city have higher incidence of diabetes.

People of color also may be more likely to live in counties with higher levels of pollution. Non-Hispanic blacks and Hispanics were more likely to live in counties that had worse problems with particle pollution, researchers found in a 2011 analysis. Non-Hispanic blacks were also more likely to live in counties with worse ozone pollution. Income groups, by contrast, differed little in these exposures. However, since few rural counties have monitors, the primarily older, non-Hispanic white residents of those counties lack information about the air quality in their communities.[96]

Unemployed people, those with low income or low education and non-Hispanic blacks were found to be more likely to live in areas with higher exposures to particle pollution in a 2012 study. However, the different racial/ethnic and income groups were often breathing very different kinds of particles; the different composition and structure of these particles may have different health impacts.[97]

Highways May Be Especially Dangerous for Breathing

Being in heavy traffic or living near a road with heavy traffic may be risky compared with being in other places in a community. Growing evidence shows that many different pollutants along busy highways may be higher than in the community as a whole, increasing the risk of harm to people who live or work near busy roads.

The number of people living "next to a busy road" may include 30 to 45 percent of the urban population in North America, according to the most recent comprehensive review of the evidence. In January 2010, the Health Effects Institute published a major review of the evidence put together by a panel of expert scientists. The panel looked at over 700 studies from around the world, examining the health effects of traffic pollution. They concluded that traffic pollution causes asthma attacks in children, and may cause a wide range of other effects including the onset of childhood asthma, impaired lung function, premature death and death from cardiovascular diseases, and cardiovascular morbidity. The area most affected, they concluded, was roughly the band within 0.2 to 0.3 miles (300 to 500 meters) of the highway.[98]

Children and teenagers are among the most vulnerable—though not the only ones at risk. A Danish study found that long-term exposure to traffic air pollution may increase the risk of developing chronic obstructive pulmonary disease (COPD). They found that those most at risk were people who already had asthma or diabetes.[99] Studies have found increased risk of premature death from living near a major highway or an urban road.[100] Another study found an increase in risk of heart attacks from being in traffic, whether driving or taking public transportation.[101] Urban women in a Boston study experienced decreased lung function associated with traffic-related pollution.[102]

Adults living closer to the road—within 300 meters—may risk dementia. In 2017, a study of residents of Ontario, Canada, found that those who lived close to heavy traffic had a higher risk of dementia, although not for Parkinson's disease or multiple sclerosis. Researchers found the strongest association among those who lived closest to the

roads (less than 50 meters), who had never moved and who lived in major cities.[103] A study of older men in 2011 also found that long-term exposure to traffic pollution increased their risk of having poor cognition.[104]

How to Protect Yourself from Ozone and Particle Pollution

To minimize your exposure to ozone and particle pollution:

- Pay attention to forecasts for high air pollution days to know when to take precautions;
- Avoid exercising near high-traffic areas;
- Avoid exercising outdoors when pollution levels are high, or substitute an activity that requires less exertion;
- Do not let anyone smoke indoors and support measures to make all places smoke-free;
- Reduce the use of fireplaces and wood-burning stoves; and
- Consider getting a portable air cleaner with a HEPA filter if you live in an area prone to wildfire smoke (do not get an air cleaner that generates ozone).

Bottom line: Help yourself and everyone else breathe easier. Support national, state and local efforts to clean up sources of pollution. Your life and the life of someone you love may depend on it.

Endnotes

1 Ozone and particle pollution are the most widespread, but they aren't the only serious air pollutants. Others include carbon monoxide, lead, nitrogen dioxide and sulfur dioxide, as well as scores of toxins such as mercury, arsenic, benzene, formaldehyde and acid gases. However, the monitoring networks are not as widespread nationwide for these other pollutants.

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Statistical Methodology: The Air Quality Data

Data Sources

Ozone and short-term particle pollution. The data on air quality throughout the United States were obtained from the U.S. Environmental Protection Agency's Air Quality System (AQS), formerly called the Aerometric Information Retrieval System (AIRS) database. The American Lung Association contracted with Dr. Allen S. Lefohn, A.S.L. & Associates, Helena, MT, to characterize the hourly averaged ozone concentration information and the 24-hour averaged $PM_{2.5}$ concentration information for the three-year period for 2016-2018 for each monitoring site.

Year-round particle pollution. Design values for the annual $PM_{2.5}$ concentrations by county for the period 2016-2018 were retrieved from data posted on **December 3, 2019**, at the U.S. Environmental Protection Agency's website at https://www.epa.gov/sites/production/files/2019-12/pm25_designvalues_20162018_final_12_03_19.xlsx. One exception is the design value for Whatcom County, WA, where that the value is based on the combined design value determined by the state and EPA using data from two monitors. That design value was provided by the State of Washington in email communication.

Ozone Data Analysis

The 2016, 2017 and 2018 AQS hourly ozone data were used to calculate the daily 8-hour maximum concentration for each ozone-monitoring site. The hourly averaged ozone data were downloaded on June 26, 2019, following the close of the authorized period for quality review and assurance certification of data. Only the hourly average ozone concentrations derived from FRM and FEM monitors were used in the analysis. The data were considered for a three-year period for the same reason that the EPA uses three years of data to determine compliance with the ozone standard: to prevent a situation in any single year, where anomalies of weather or other factors create air pollution levels that inaccurately reflect the normal conditions. The highest 8-hour daily maximum concentration in each county for 2016, 2017 and 2018, based on the EPA-defined ozone season, was identified.

The current national ambient air quality standard for ozone is 70 parts per billion (ppb) measured over eight hours. EPA's Air Quality Index reflects the 70 ppb standard. A.S.L. & Associates prepared a table by county that summarized, for each of the three years, the number of days the ozone level was within the ranges identified by EPA based on the EPA Air Quality Index:

8-hour Ozone Concentration	Air Quality Index Levels
0-54 ppb	Good (Green)
55-70 ppb	Moderate (Yellow)
71-85 ppb	Unhealthy for Sensitive Groups (Orange)
86-105 ppb	Unhealthy (Red)
106-200 ppb	Very Unhealthy (Purple)
>200 ppb	Hazardous (Maroon)

The goal of this report was to identify the number of days that 8-hour daily maximum concentrations in each county occurred within the defined ranges. This approach provided an indication of the level of pollution for all monitored days, not just those days that fell under the requirements for attaining the national ambient air quality standards. Therefore, no data capture criteria were applied to eliminate monitoring sites or to require a number of valid days for the ozone season.

The daily maximum 8-hour average concentration for a given day is derived from the highest of the 17 consecutive 8-hour averages beginning with the 8-hour period from 7:00 a.m. to 3:00 p.m. and ending with the 8-hour period from 11:00 p.m. to 7:00 a.m. the following day. This follows the process EPA uses for the current ozone standard adopted in 2015, but differs from the form used under the previous 0.075 ppm 8-hour average ozone standard that was established in 2008. All valid days of data within the ozone season were used in the analysis. However, for computing an 8-hour average, at least 75 percent of the hourly concentrations (i.e., six to eight hours) had to be available for the 8-hour period. In addition, an 8-hour daily maximum average was identified if valid 8-hour averages were available for at least 75 percent of possible hours in the day (i.e., at least 13 of the possible 17 8-hour averages). Because the EPA includes days with inadequate data (i.e., not 75 percent complete) if the standard value is exceeded, our data capture methodology also included the site's 8-hour value if at least one valid 8-hour period was available and it was 71 ppb or higher.

As instructed by the Lung Association, A.S.L. & Associates included the exceptional and natural events that were identified in the database and identified for the Lung Association the dates and monitoring sites that experienced such events. Some data have been flagged by the state or local air pollution control agency to indicate that they had raised issues with EPA about those data. For each day across all sites within a specific county, the highest daily maximum 8-hour average ozone concentration was recorded and then the results were summarized by county for the number of days the ozone levels were within the ranges identified above.

Following receipt of the above information, the American Lung Association identified the number of days each county with at least one ozone monitor experienced air quality designated as orange (Unhealthy for Sensitive Groups), red (Unhealthy), or purple (Very Unhealthy).

Short-Term Particle Pollution Data Analysis

A.S.L. & Associates identified the maximum daily 24-hour AQS $PM_{2.5}$ concentration for each county in 2016, 2017 and 2018 with monitoring information. The 24-hour $PM_{2.5}$ data were downloaded on August 7, 2019, following the close of the authorized period for quality review and assurance certification of data. In addition, on August 7, 2019, hourly averaged $PM_{2.5}$ concentration data were characterized into 24-hour average $PM_{2.5}$ values by EPA and provided to A.S.L. & Associates. Using these results, A.S.L. & Associates prepared a table by county that summarized, for each of the three years, the number of days the maximum of the daily $PM_{2.5}$ concentration was within the ranges identified by EPA based on the EPA Air Quality Index, as adopted by EPA on December 14, 2012:

24-hour $PM_{2.5}$ Concentration	Air Quality Index Levels
0.0 µg/m^3 to 12.0 µg/m^3	Good (Green)
12.1 µg/m^3 to 35.4 µg/m^3	Moderate (Yellow)
35.5 µg/m^3 to 55.4 µg/m^3	Unhealthy for Sensitive Groups (Orange)
55.5 µg/m^3 to 150.4 µg/m^3	Unhealthy (Red)
150.5 µg/m^3 to 250.4 µg/m^3	Very Unhealthy (Purple)
equal to or greater than 250.5 µg/m^3	Hazardous (Maroon)

All previous data collected for 24-hour average $PM_{2.5}$ were characterized using the AQI thresholds listed above.

The goal of this report was to identify the number of days that the maximum in each county of the *daily* $PM_{2.5}$ concentration occurred within the defined ranges. This approach provided an indication of the level of pollution for all monitored days, not just those days that fell under the requirements for attaining the national ambient air quality standards. Therefore, no data capture criteria were used to eliminate monitoring sites. Both 24-hour averaged PM data and hourly averaged PM data averaged over 24 hours were used. Included in the analysis are data collected using only FRM and FEM methods, which reported hourly and 24-hour averaged data. As instructed by the Lung Association, A.S.L. & Associates included the exceptional and natural events that were identified in the database and identified for the Lung Association the dates and monitoring sites that experienced such events. Some data have been flagged by the state or local air pollution control agency to indicate that they had raised issues with EPA about those data. For each day across all sites within a specific county, the highest daily maximum 24-hour $PM_{2.5}$ concentration was recorded and then the results were summarized by county for the number of days the concentration levels were within the ranges identified above.

Following receipt of the above information, the American Lung Association identified the number of days each county with at least one $PM_{2.5}$ monitor experienced air quality designated as orange (Unhealthy for Sensitive Groups), red (Unhealthy), purple (Very Unhealthy) or maroon (Hazardous).

Description of County Grading System

Ozone and Short-Term Particle Pollution (24-hour $PM_{2.5}$)

The grades for ozone and short-term particle pollution (24-hour $PM_{2.5}$) were based on a weighted average for each county. To determine the weighted average, the Lung Association followed these steps:

1. First, assigned weighting factors to each category of the Air Quality Index. The number of orange days experienced by each county received a factor of 1; red days, a factor of 1.5; purple days, a factor of 2; and maroon days, a factor of 2.5. This allowed days where the air pollution levels were higher to receive greater weight.
2. Next, multiplied the total number of days within each category by their assigned factor, and then summed all the categories to calculate a total.
3. Finally, divided the total by 3 to determine the weighted average, since the monitoring data were collected over a three-year period.

The weighted average determined each county's grades for ozone and 24-hour $PM_{2.5}$.

- All counties with a weighted average of zero (corresponding to no exceedances of the standard over the three-year period) were given a grade of "A."
- For ozone, an "F" grade was set to generally correlate with the number of unhealthy air days that would place a county in nonattainment for the ozone standard.
- For short-term particle pollution, fewer unhealthy air days are required for an F than for nonattainment under the $PM_{2.5}$ standard. The national air quality standard is set to allow two percent of the days during the three years to exceed 35 $\mu g/m^3$ (called a "98th percentile" form) before violating the standard. That would be roughly 21 unhealthy days in three years. The grading used in this report would allow only about one percent of the days to be over 35 $\mu g/m^3$ (called a "99th percentile" form) of the $PM_{2.5}$. The American Lung Association supports using the tighter limits in a 99th percentile form as a more appropriate standard that is intended to protect the public from short-term episodes or spikes in pollution.

Grading System		
Grade	**Weighted Average**	**Approximate Number of Allowable Orange/Red/Purple/Maroon days**
A	0.0	None
B	0.3 to 0.9	1 to 2 orange days with no red
C	1.0 to 2.0	3 to 6 days over the standard: 3 to 5 orange with no more than 1 red OR 6 orange with no red
D	2.1 to 3.2	7 to 9 days over the standard: 7 total (including up to 2 red) to 9 orange with no red
F	3.3 or higher	9 days or more over the standard: 10 orange days or 9 total including at least 1 or more red, purple or maroon

Weighted averages allow comparisons to be drawn based on severity of air pollution. For example, if one county had nine orange days and no red days, it would earn a weighted average of 3.0 and a D grade. However, another county that had only eight orange days but also two red days, which signify days with more serious air pollution, would receive an F. That second county would have a weighted average of 3.7.

Note that this system differs significantly from the methodology EPA uses to determine violations of both the ozone and the 24-hour $PM_{2.5}$ standards. EPA determines whether a county violates the standard based on the fourth maximum daily 8-hour ozone reading each year averaged over three years. Multiple days of unhealthy air beyond the highest four in each year are not considered. By contrast, the system used in this report recognizes when a community's air quality repeatedly results in unhealthy air throughout the three years. Consequently, some counties will receive grades of F in this report, showing repeated instances of unhealthy air, while still meeting the EPA's 2015 ozone standard. The American Lung Association's position is that the evidence shows that the 2015 ozone standard, although stronger than the 2008 standard, still fails to adequately protect public health.

The Lung Association calculates the county population at risk from these pollutants based on the population from the entire county where the monitor is located. The Lung Association then calculates the metropolitan population at risk based upon the largest metropolitan area that contains that county. Not only do people from that county or metropolitan area circulate within the county and the metropolitan area, the air pollution circulates to that monitor through the county and metropolitan area.

Counties were ranked by weighted average. Metropolitan areas were ranked by the highest weighted average among the counties within a given Metropolitan Statistical Area as of 2019 as defined by the White House Office of Management and Budget (OMB).

Year-Round Particle Pollution (Annual $PM_{2.5}$)

Since no comparable Air Quality Index exists for year-round particle pollution (annual $PM_{2.5}$), the grading was based on the 2012 National Ambient Air Quality Standard for annual $PM_{2.5}$ of 12 $\mu g/m^3$. Counties that EPA listed as being at or below 12 $\mu g/m^3$ were given grades of "Pass." Counties EPA listed as being at or above 12.1 $\mu g/m^3$ were given grades of "Fail." Where insufficient data existed for EPA to determine a design value, those counties received a grade of "Incomplete."

Design value is the calculated concentration of a pollutant based on the form of the national ambient air quality standard and is used by EPA to determine whether the air quality in a county meets the standard. Counties were ranked by design value. Metropolitan areas were ranked by the highest design value among the counties within a given Metropolitan Statistical Area as of 2019 as defined by the OMB.

The Lung Association received critical assistance from members of the National Association of Clean Air Agencies and the Association of Air Pollution Control Agencies. With their assistance, all state and local agencies were provided the opportunity to review and comment on the data in draft tabular form. The Lung Association reviewed all discrepancies with the agencies and, if needed, with Dr. Lefohn at A.S.L. & Associates. The American Lung Association wishes to express its continued appreciation to the state and local air directors for their willingness to assist in ensuring that the characterized data used in this report are correct.

Calculations of Populations at Risk

Presently county-specific measurements of the number of persons with chronic conditions are not generally available. To assess the magnitude of chronic conditions at the state and county levels, we have employed a synthetic estimation technique originally developed by the U.S. Census Bureau. This method uses age-specific national and state estimates of self-reported conditions to project disease prevalence to the county level. The exception to this is poverty, for which estimates are available at the county level.

Population Estimates

The Lung Association includes the total county population in discussions of populations at risk from exposure to pollution in each county. The Lung Association uses that conservative count based on several factors: the recognized limited number and locations of monitors in most counties and metropolitan areas; the movement of the population both in daily activities, including outdoor activities, such as exercise or work; and the transport of emission from sources into and across the county to reach the monitor.

Not only do people from that county or metropolitan area circulate within the county and the metropolitan area, the air pollution circulates to that monitor through the county and metropolitan area. For that reason, the Lung Association calculates the county population at risk from these pollutants based on the population from the entire county where the monitor is located. The Lung Association then calculates the metropolitan population at risk based upon the largest metropolitan area that contains that county.

The counties assigned to a metropolitan area follow the groupings determined by the White House Office of Management and Budget (OMB) and used by the U.S. Census Bureau. The Lung Association uses the largest definition of a metropolitan area for these groupings where at least one urban core of 50,000 people or more is present. The Metropolitan Statistical Areas and Combined Statistical Areas are used as the basis for considering populations at risk in these urban areas because they reflect the "high degree of social and economic interaction as measured by commuting ties," as OMB describes them.[1] The definitions of these areas reflect review and analysis of such patterns by these agencies.

The U.S. Census Bureau estimated data on the total population of each county in the United States for 2018. The Census Bureau also estimated the age- and race/ethnicity-specific breakdown of the population and the number of individuals living in poverty by county. These estimates are the best information on population demographics available between decennial censuses.

People of color are defined as anyone Hispanic or non-Hispanic black, Asian, American Indian/Alaska Native, Native Hawaiian and Other Pacific Islander, or two or more races.

Poverty estimates came from the Census Bureau's Small Area Income and Poverty Estimates (SAIPE) program. The program does not use direct counts or estimates from sample surveys, as these methods would not provide sufficient data for all counties.

1 Executive Office of the President, Office of Management and Budget Bulletin No. 18-04. September 14, 2018.

Instead, a model based on estimates of income or poverty from the Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS) is used to develop estimates for all states and counties.

Prevalence Estimates

Chronic Obstructive Pulmonary Disease, Cardiovascular Disease, Asthma and Ever Smoked. In 2018, the Behavioral Risk Factor Surveillance System (BRFSS) survey found that approximately 23.1 million (9.3 percent) of adults residing in the United States and 7.2 percent of children from 30 states and Washington, DC, reported currently having asthma. Among adults in the United States in 2018, 17.2 million (6.9 percent) had ever been diagnosed with chronic obstructive pulmonary disease (COPD), 22.5 million (9.1 percent) had ever been diagnosed with cardiovascular disease, and 37.5 million (40.0 percent) had ever smoked at least 100 cigarettes.

The prevalence estimate for pediatric asthma is calculated for those younger than 18 years. Local area prevalence of pediatric asthma is estimated by applying 2018 state prevalence rates, or, if not available, the national rate from the BRFSS to pediatric county-level resident populations obtained from the U.S. Census Bureau website. Pediatric asthma data from the 2018 BRFSS were available for 30 states and Washington, DC, from the 2016 BRFSS for three states, from the 2015 BRFSS for three states, from the 2014 BRFSS for five states, from the 2012 BRFSS for two states, from the 2011 BRFSS for one state, and national data were used for the eight states[2] that had no data available. Data from earlier years were not used due to changes in the 2011 survey methodology.

The prevalence estimates for COPD, cardiovascular disease, adult asthma and ever smoked are calculated for those aged 18-44 years, 45-64 years and 65 years and older. Local area prevalence is estimated by applying age-specific state prevalence rates from the 2018 BRFSS to age-specific county-level resident populations obtained from the U.S. Census Bureau website. Cardiovascular disease included ever having been diagnosed with a heart attack, angina or coronary heart disease, or stroke.

Incidence Estimates

Lung Cancer. State- and gender-specific lung cancer incidence rates for 2016 were obtained from StateCancerProfiles.gov, a system that provides access to statistics from both the NCI's Surveillance, Epidemiology and End Results (SEER) program and the CDC's National Program of Cancer Registries.

Local area incidence of lung cancer is estimated by applying 2016 age-adjusted and sex-specific incidence rates to 2018 county populations obtained from the U.S. Census Bureau. Thereafter, the incidence estimates for each county within a state are summed to determine overall incidence.

Limitations of Estimates. Since the statistics presented by the BRFSS and SAIPE are based on a sample, they will differ (due to random sampling variability) from figures that would be derived from a complete census or case registry of people in the U.S. with these diseases. The results are also subject to reporting, non-response and processing errors. These types of errors are kept to a minimum by methods built into the survey.

Additionally, a major limitation of the BRFSS is that the information collected represents self-reports of medically diagnosed conditions, which may underestimate disease prevalence since not all individuals with these conditions have been properly diagnosed. However, the BRFSS is the best available source for information on the magnitude of chronic disease at the state level. The conditions covered in the survey may vary considerably in the accuracy and completeness with which they are reported.

2 *2016:* Arizona, Oklahoma, and Washington. *2015:* Louisiana and Texas. *2014:* Alabama, North Carolina, Tennessee, and West Virginia. *2012:* North Dakota and Wyoming. *2011:* Iowa. *National:* Alaska, Arkansas, Colorado, Delaware, Idaho, South Carolina, South Dakota, and Virginia.

Local estimates of chronic diseases and smoking are scaled in direct proportion to the base population of the county and its age distribution. No adjustments are made for other factors that may affect local prevalence (e.g., local prevalence of cigarette smokers or occupational exposures) since the health surveys that obtain such data are rarely conducted on the county level. Because the estimates do not account for geographic differences in the prevalence of chronic and acute diseases, the sum of the estimates for each of the counties in the United States may not exactly reflect the national or state estimates derived from the BRFSS.

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Irwin, R. Guide to Local Area Populations. U.S. Bureau of the Census, Technical Paper Number 39 (1972).

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StateCancerProfile.gov, 2019. Cancer Incidence by State and Gender, 2016.

Population Estimates Branch, U.S. Census Bureau. Annual Estimates of the Resident Population by Selected Age Groups and Sex for Counties: April 1, 2010 to July 1, 2018.

Office of Management and Budget. Revised Delineations of Metropolitan Statistical Areas, Micropolitan Statistical Areas, and Combined Statistical Areas, and Guidance on Uses of the Delineations of These Areas. OMB Bulletin 18-04 September 14, 2018.

U.S. Census Bureau. Small Area Income and Poverty Estimates. State and County Data, 2018.

State Table Notes

A full explanation of the sources of data and methodology is in **Methodology**.

Notes for all state data tables

1. **Total population** is based on 2018 U.S. Census and represents the at-risk populations in counties with ozone or $PM_{2.5}$ pollution monitors; it does not represent the entire state's sensitive populations.
2. Those **18 & under** and **65 & over** are vulnerable to ozone and $PM_{2.5}$. Do not use them as population denominators for disease estimates—that will lead to incorrect estimates.
3. **Pediatric asthma** estimates are for those under 18 years of age and represent the estimated number of people who had asthma in 2018 based on the state rates when available or national rates when not (Behavioral Risk Factor Surveillance System, or BRFSS), applied to county population estimates (U.S. Census).
4. **Adult asthma** estimates are for those 18 years and older and represent the estimated number of people who had asthma during 2018 based on state rates (BRFSS) applied to county population estimates (U.S. Census).
5. **COPD** estimates are for adults 18 and over who had ever been diagnosed with chronic obstructive pulmonary disease, which includes chronic bronchitis and emphysema, based on state rates (BRFSS) applied to county population estimates (U.S. Census).
6. **Lung cance**r estimates are for all ages and represent the estimated number of people diagnosed with lung cancer in 2016 based on state rates (StateCancerProfiles.gov) applied to county population estimates (U.S. Census).
7. **Cardiovascular disease** estimates are for adults 18 and over who have been diagnosed within their lifetime, based on state rates (BRFSS) applied to county population estimates (U.S. Census). CV disease includes coronary heart disease, stroke and heart attack.
8. **Ever smoked** estimates are for adults 18 and over who have ever smoked 100 or more cigarettes based on state rates (BRFSS) applied to county population estimates (U.S. Census).
9. **Poverty estimates** include all ages and come from the U.S. Census Bureau's Small Area Income and Poverty Estimates program. The estimates are derived from a model using estimates of income or poverty from the Annual Social and Economic Supplement and the Current Population Survey, 2018.
10. **People of color** are defined as anyone Hispanic or non-Hispanic black, Asian, American Indian/Alaska Native, Native Hawaiian and Other Pacific Islander, or two or more races and are based on 2018 county population estimates (U.S Census).
11. Adding across rows does not produce valid estimates. Adding the at-risk categories (asthma, COPD, poverty, etc.) will double-count people who fall into more than one category.

Notes for all state grades tables

1. Not all counties have monitors for either ozone or particle pollution. If a county does not have a monitor, that county's name is not on the list in these tables. The decision about monitors in the county is made by the state and the U.S. Environmental Protection Agency, not by the American Lung Association.
2. **INC** (Incomplete) indicates that monitoring is underway for that pollutant in that county, but that the data are incomplete for all three years. For particle pollution, some states collected data, but experienced laboratory quality issues that meant the data could not be used for assessing pollution levels.
3. **DNC** (Data Not Collected) indicates that data on that particular pollutant are not collected in that county.
4. The **Weighted Average (Wgt. Avg)** was derived by adding the three years of individual level data (2016-2018), multiplying the sums of each level by the assigned standard weights (i.e. 1=orange, 1.5=red, 2.0=purple and 2.5=maroon) and calculating the average. Grades are assigned based on the weighted averages as follows: A=0.0, B=0.3-0.9, C=1.0-2.0, D=2.1-3.2, F=3.3+.
5. The **design value** is the calculated concentration of a pollutant based on the form of the National Ambient Air Quality Standard. EPA uses the design values to determine whether the air quality in a county meets the standard. The numbers refer to micrograms per cubic meter, or $\mu g/m^3$. Design values for the annual $PM_{2.5}$ concentrations by county for the period 2016-2018 were retrieved from data posted on **December 3, 2019**, at the U.S. Environmental Protection Agency's website at https://www.epa.gov/sites/production/files/2019-12/pm25_designvalues_20162018_final_12_03_19.xlsx. One exception is the design value for Whatcom County, WA, where that value is based on the combined design value determined by the state and EPA using data from two monitors. That design value was provided by the State of Washington in email communication.
6. The annual average National Ambient Air Quality Standard for $PM_{2.5}$ is 12 $\mu g/m^3$ as of December 14, 2012. Counties with design values of 12 or lower received a grade of "Pass." Counties with design values of 12.1 or higher received a grade of "Fail."

ALABAMA

American Lung Association in Alabama

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Baldwin	218,022	47,110	44,571	6,217	18,036	18,817	143	24,290	75,937	21,069	36,821
Clay	13,275	2,688	2,751	355	1,118	1,173	9	1,512	4,711	2,285	2,585
Colbert	54,762	11,370	10,914	1,501	4,577	4,692	36	6,030	19,204	7,459	11,830
DeKalb	71,385	17,188	12,322	2,268	5,726	5,719	47	7,237	23,873	14,975	14,186
Elmore	81,887	18,211	12,400	2,403	6,739	6,460	54	7,997	27,836	8,559	22,116
Etowah	102,501	21,997	19,487	2,903	8,499	8,637	67	11,032	35,577	17,509	22,872
Houston	104,722	24,120	18,639	3,183	8,507	8,480	69	10,767	35,475	17,032	35,272
Jefferson	659,300	150,071	104,547	19,805	53,749	51,356	431	64,175	222,224	103,604	331,629
Madison	366,519	79,966	55,125	10,553	30,350	29,165	241	36,026	125,369	42,667	129,763
Mobile	413,757	96,711	67,041	12,763	33,472	32,375	271	40,606	138,707	84,539	179,067
Montgomery	225,763	52,774	34,173	6,965	18,255	17,182	147	21,366	75,260	43,567	150,610
Morgan	119,089	27,168	20,803	3,585	9,722	9,770	79	12,344	40,560	15,419	29,373
Russell	57,781	13,968	8,280	1,843	4,633	4,369	38	5,392	19,085	12,384	31,211
Shelby	215,707	50,645	33,087	6,684	17,480	17,010	142	21,125	72,395	16,916	48,467
Sumter	12,691	2,407	2,286	318	1,081	1,030	8	1,306	4,478	4,076	9,575
Talladega	79,828	16,918	14,370	2,233	6,651	6,682	52	8,456	27,752	14,825	29,938
Tuscaloosa	208,911	43,761	27,743	5,775	17,384	15,192	137	18,537	70,772	33,330	81,015
Totals	**3,005,900**	**677,073**	**488,539**	**89,354**	**245,979**	**238,108**	**1,972**	**298,197**	**1,019,215**	**460,215**	**1,166,330**

ALABAMA

American Lung Association in Alabama

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Baldwin	1	0	0	0.3	B	0	0	0	0	0.0	A	7.3	PASS
Clay	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.4	PASS
Colbert	1	0	0	0.3	B	0	0	0	0	0.0	A	7.5	PASS
DeKalb	0	0	0	0.0	A	1	0	0	0	0.3	B	7.6	PASS
Elmore	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Etowah	0	0	0	0.0	A	0	0	0	0	0.0	A	8.3	PASS
Houston	0	0	0	0.0	A	1	0	0	0	0.3	B	7.8	PASS
Jefferson	12	2	0	5.0	F	0	0	0	0	0.0	A	10.5	PASS
Madison	2	0	0	0.7	B	0	0	0	0	0.0	A	7.5	PASS
Mobile	5	0	0	1.7	C	0	0	0	0	0.0	A	8.1	PASS
Montgomery	1	0	0	0.3	B	0	0	0	0	0.0	A	8.6	PASS
Morgan	0	0	0	0.0	A	0	0	0	0	0.0	A	7.5	PASS
Russell	0	0	0	0.0	A	0	0	0	0	0.0	A	INC	INC
Shelby	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sumter	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Talladega	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Tuscaloosa	1	0	0	0.3	B	0	0	0	0	0.0	A	7.8	PASS

ALASKA

American Lung Association in Alaska

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Anchorage Municipality	291,538	71,339	32,333	5,106	20,168	12,616	161	14,639	95,199	27,075	124,439
Denali Borough	2,059	384	245	27	158	104	1	122	742	135	412
Fairbanks North Star Borough	98,971	23,861	10,204	1,708	6,791	4,061	55	4,617	31,974	8,104	30,429
Juneau City and Borough	32,113	6,830	4,298	489	2,338	1,552	18	1,850	11,130	2,299	11,476
Matanuska-Susitna Borough	107,610	28,860	12,814	2,065	7,272	4,753	60	5,625	34,516	10,937	22,649
Totals	**532,291**	**131,274**	**59,894**	**9,395**	**36,727**	**23,086**	**295**	**26,854**	**173,561**	**48,550**	**189,405**

ALASKA

American Lung Association in Alaska

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anchorage Municipality	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	5.8	PASS
Denali Borough	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fairbanks North Star Borough	0	0	0	0.0	A	51	19	0	0	26.5	F	13.1	FAIL
Juneau City and Borough	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	6.2	PASS
Matanuska-Susitna Borough	0	0	0	0.0	A	6	1	0	0	2.5	D	5.3	PASS

ARIZONA

American Lung Association in Arizona

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Apache	71,818	19,518	10,986	1,573	5,322	3,728	32	4,820	21,136	26,435	58,801
Cochise	126,770	27,312	28,326	2,202	10,015	7,771	57	10,389	41,425	18,273	57,227
Coconino	142,854	29,454	17,855	2,374	11,338	6,940	64	8,729	43,956	20,964	65,726
Gila	53,889	10,827	15,506	873	4,363	3,814	24	5,220	18,698	10,804	20,487
La Paz	21,098	3,540	8,287	285	1,733	1,698	9	2,405	7,893	4,921	9,141
Maricopa	4,410,824	1,052,788	669,285	84,871	340,115	231,647	1,970	298,086	1,344,593	535,183	1,989,191
Mohave	209,550	35,739	63,526	2,881	17,610	15,506	94	21,258	75,665	34,411	48,373
Navajo	110,445	29,472	20,010	2,376	8,223	6,101	49	8,024	33,302	30,876	64,394
Pima	1,039,073	216,736	205,255	17,472	82,678	60,474	464	79,742	336,049	164,927	504,663
Pinal	447,138	100,778	91,129	8,124	34,832	26,058	201	34,552	142,549	54,399	194,203
Santa Cruz	46,511	12,435	8,421	1,002	3,455	2,555	21	3,361	13,995	11,287	39,600
Yavapai	231,993	37,687	73,278	3,038	19,703	17,642	103	24,260	85,109	30,060	45,569
Yuma	212,128	53,494	39,828	4,312	15,802	11,389	95	15,050	64,422	39,648	147,604
Totals	**7,124,091**	**1,629,780**	**1,251,692**	**131,385**	**555,189**	**395,322**	**3,183**	**515,896**	**2,228,791**	**982,188**	**3,244,979**

ARIZONA

American Lung Association in Arizona

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Apache	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	INC	INC
Cochise	2	0	0	0.7	B	0	0	0	0	0.0	A	INC	INC
Coconino	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gila	30	1	0	10.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Paz	6	0	0	2.0	C	0	0	0	0	0.0	A	4.3	PASS
Maricopa	112	5	0	39.8	F	13	2	2	0	6.7	F	9.9	PASS
Mohave	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Navajo	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pima	14	0	0	4.7	F	1	0	0	0	0.3	B	6.5	PASS
Pinal	44	1	0	15.2	F	30	3	0	0	11.5	F	13.0	FAIL
Santa Cruz	DNC	DNC	DNC	DNC	DNC	3	4	0	0	3.0	D	9.1	PASS
Yavapai	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Yuma	18	0	0	6.0	F	5	0	0	0	1.7	C	8.5	PASS

ARKANSAS

American Lung Association in Arkansas

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Arkansas	17,769	4,074	3,484	292	1,344	1,446	14	1,943	6,521	3,120	5,427
Ashley	20,046	4,582	4,081	328	1,514	1,653	16	2,230	7,378	3,876	6,354
Clark	22,061	4,184	3,687	299	1,765	1,641	17	2,206	8,328	3,838	6,963
Craighead	108,558	27,090	15,030	1,939	8,093	7,489	85	9,854	37,974	18,768	26,491
Crittenden	48,342	13,076	6,838	936	3,503	3,436	38	4,484	16,586	9,056	28,292
Garland	99,154	19,941	23,632	1,427	7,693	8,653	77	11,919	37,920	19,844	18,046
Jackson	16,811	3,381	3,051	242	1,324	1,349	13	1,798	6,344	3,732	3,934
Newton	7,805	1,502	2,069	107	609	719	6	999	3,040	1,340	506
Polk	20,049	4,567	4,611	327	1,504	1,705	16	2,342	7,422	3,962	2,477
Pulaski	392,680	91,009	61,075	6,513	29,892	29,262	305	38,546	141,761	64,312	188,759
Union	39,126	9,419	7,017	674	2,926	3,083	31	4,101	14,109	7,000	15,358
Washington	236,961	57,728	27,809	4,132	17,895	15,419	186	20,080	82,763	34,741	69,366
Totals	**1,029,362**	**240,553**	**162,384**	**17,216**	**78,062**	**75,854**	**802**	**100,501**	**370,147**	**173,589**	**371,973**

ARKANSAS

American Lung Association in Arkansas

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Arkansas	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.1	PASS
Ashley	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	8.2	PASS
Clark	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Craighead	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Crittenden	6	1	0	2.5	D	0	0	0	0	0.0	A	8.4	PASS
Garland	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.4	PASS
Jackson	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.1	PASS
Newton	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Polk	0	0	0	0.0	A	0	0	0	0	0.0	A	8.3	PASS
Pulaski	3	0	0	1.0	C	0	0	0	0	0.0	A	9.7	PASS
Union	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	8.9	PASS
Washington	0	0	0	0.0	A	0	0	0	0	0.0	A	8.1	PASS

CALIFORNIA

American Lung Association in California

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Alameda	1,666,753	342,510	230,510	21,146	112,623	59,859	645	86,118	438,363	147,394	1,148,783
Amador	39,383	5,914	10,633	365	2,936	1,919	15	2,945	11,929	4,130	8,898
Butte	231,256	46,213	42,992	2,853	15,844	9,018	90	13,309	62,372	42,016	65,598
Calaveras	45,602	7,721	12,553	477	3,340	2,233	18	3,448	13,649	5,454	8,802
Colusa	21,627	5,907	3,163	365	1,344	745	8	1,087	5,273	2,350	14,202
Contra Costa	1,150,215	259,791	181,443	16,039	76,494	43,209	445	63,410	301,667	88,980	652,755
Del Norte	27,828	5,854	5,018	361	1,890	1,092	11	1,616	7,478	5,065	10,472
El Dorado	190,678	37,821	40,389	2,335	13,335	8,279	74	12,506	53,670	15,401	42,700
Fresno	994,400	281,819	122,113	17,399	60,395	31,587	385	45,226	234,129	208,627	705,643
Glenn	28,047	7,453	4,453	460	1,767	1,003	11	1,476	6,967	4,271	13,812
Humboldt	136,373	26,184	24,380	1,617	9,423	5,297	53	7,783	37,018	27,002	35,274
Imperial	181,827	51,765	23,580	3,196	11,043	5,862	71	8,440	42,925	37,014	162,999
Inyo	17,987	3,681	4,210	227	1,249	792	7	1,206	5,040	2,172	6,877
Kern	896,764	259,180	98,347	16,001	53,894	27,503	348	39,003	208,055	177,021	596,328
Kings	151,366	40,964	15,516	2,529	9,283	4,580	59	6,416	35,590	25,481	103,277
Lake	64,382	13,490	14,635	833	4,442	2,804	25	4,261	17,916	11,689	19,519
Los Angeles	10,105,518	2,188,893	1,375,957	135,136	673,459	358,245	3,911	515,500	2,622,021	1,409,155	7,466,160
Madera	157,672	43,339	22,051	2,676	9,745	5,298	61	7,688	38,068	30,201	104,594
Marin	259,666	51,925	57,943	3,206	18,183	11,518	100	17,499	73,506	16,742	74,122
Mariposa	17,471	2,828	4,882	175	1,289	859	7	1,325	5,259	2,569	3,551
Mendocino	87,606	18,713	19,366	1,155	5,988	3,712	34	5,617	24,035	15,140	30,951
Merced	274,765	80,588	30,845	4,975	16,418	8,420	107	11,965	63,423	56,863	200,196
Mono	14,250	2,608	2,253	161	999	558	6	815	3,932	1,312	4,944
Monterey	435,594	113,834	59,201	7,028	27,378	14,688	169	21,215	106,690	55,614	306,813
Napa	139,417	28,800	26,665	1,778	9,552	5,640	54	8,403	37,970	11,829	66,865
Nevada	99,696	17,071	27,380	1,054	7,266	4,821	39	7,432	29,614	10,171	15,030
Orange	3,185,968	698,788	470,387	43,141	212,780	117,068	1,233	170,329	834,500	330,559	1,907,489
Placer	393,149	87,441	76,906	5,398	26,478	15,911	152	23,831	105,669	27,596	109,849
Plumas	18,804	3,173	5,345	196	1,378	927	7	1,435	5,635	2,317	3,123
Riverside	2,450,758	616,126	353,122	38,038	156,550	85,478	949	124,180	612,354	307,511	1,600,121
Sacramento	1,540,975	363,909	217,601	22,467	100,345	54,282	596	78,584	391,898	217,138	859,537
San Benito	61,537	15,827	7,937	977	3,896	2,089	24	3,013	15,205	5,294	40,928
San Bernardino	2,171,603	572,278	251,361	35,331	135,544	70,099	841	99,838	524,916	317,514	1,564,843
San Diego	3,343,364	722,408	469,454	44,599	222,727	118,450	1,296	170,564	866,445	372,148	1,832,022
San Francisco	883,305	118,692	138,249	7,328	64,765	34,033	343	48,859	251,054	87,596	527,131
San Joaquin	752,660	204,316	95,916	12,614	46,649	24,840	292	35,760	181,645	105,351	519,021
San Luis Obispo	284,010	50,000	57,040	3,087	20,105	11,680	110	17,346	79,503	34,200	89,147
San Mateo	769,545	158,383	123,921	9,778	52,381	29,308	298	42,903	206,033	51,830	470,051
Santa Barbara	446,527	98,787	68,465	6,099	29,547	15,916	173	23,056	115,063	54,029	249,761
Santa Clara	1,937,570	424,427	261,131	26,203	128,742	68,463	752	98,491	501,284	139,074	1,335,966

CALIFORNIA (cont.)

American Lung Association in California

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Santa Cruz	274,255	52,852	45,127	3,263	18,926	10,493	106	15,327	74,236	32,027	118,323
Shasta	180,040	38,584	37,553	2,382	12,262	7,457	70	11,216	49,022	26,919	36,805
Siskiyou	43,724	8,802	11,160	543	3,062	1,998	17	3,066	12,428	7,396	10,636
Solano	446,610	98,740	70,430	6,096	29,805	16,651	173	24,365	117,186	34,281	278,552
Sonoma	499,942	98,196	98,714	6,062	34,723	20,633	193	30,806	138,211	48,846	184,266
Stanislaus	549,815	148,801	72,319	9,187	34,134	18,290	213	26,395	133,042	84,744	323,635
Sutter	96,807	25,059	14,902	1,547	6,142	3,434	37	5,029	24,137	13,011	52,946
Tehama	63,916	15,363	12,389	948	4,205	2,533	25	3,797	16,786	10,749	20,718
Tulare	465,861	142,848	53,292	8,819	27,348	14,170	181	20,216	105,845	102,451	335,036
Tuolumne	54,539	9,158	14,279	565	3,969	2,562	21	3,923	16,064	6,417	11,026
Ventura	850,967	194,553	132,387	12,011	56,290	31,535	329	46,171	221,522	76,206	468,345
Yolo	220,408	46,233	27,535	2,854	14,649	7,339	85	10,357	56,245	42,311	118,464
Totals	**39,422,802**	**8,958,610**	**5,647,400**	**553,079**	**2,596,984**	**1,405,179**	**15,267**	**2,034,564**	**10,142,484**	**4,951,178**	**24,936,906**

CALIFORNIA

American Lung Association in California

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alameda	20	3	1	8.8	F	10	13	2	0	11.2	F	12.0	PASS
Amador	15	0	0	5.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Butte	48	3	0	17.5	F	13	4	2	2	9.3	F	10.1	PASS
Calaveras	41	3	0	15.2	F	15	5	0	0	7.5	F	INC	INC
Colusa	0	0	0	0.0	A	12	16	0	0	12.0	F	8.5	PASS
Contra Costa	8	0	0	2.7	D	11	12	2	0	11.0	F	10.5	PASS
Del Norte	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	INC	INC
El Dorado	87	21	1	40.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fresno	191	43	1	85.8	F	73	27	0	0	37.8	F	15.0	FAIL
Glenn	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Humboldt	1	0	0	0.3	B	4	0	0	0	1.3	C	7.4	PASS
Imperial	56	2	0	19.7	F	19	2	0	0	7.3	F	12.6	FAIL
Inyo	32	0	0	10.7	F	10	9	3	0	9.8	F	7.2	PASS
Kern	257	35	0	103.2	F	64	29	0	0	35.8	F	17.8	FAIL
Kings	111	5	0	39.5	F	68	27	0	0	36.2	F	16.8	FAIL
Lake	0	0	0	0.0	A	2	2	1	0	2.3	D	6.1	PASS
Los Angeles	207	68	12	111.0	F	31	7	0	0	13.8	F	12.7	FAIL
Madera	84	6	0	31.0	F	41	7	0	0	17.2	F	12.8	FAIL
Marin	0	0	0	0.0	A	8	12	1	0	9.3	F	9.1	PASS
Mariposa	60	5	0	22.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mendocino	0	0	0	0.0	A	19	7	1	1	11.3	F	9.1	PASS
Merced	63	2	0	22.0	F	41	12	0	0	19.7	F	13.4	FAIL
Mono	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Monterey	0	0	0	0.0	A	9	10	0	0	8.0	F	6.3	PASS
Napa	2	0	0	0.7	B	10	13	2	0	11.2	F	INC	INC
Nevada	110	29	0	51.2	F	8	5	0	0	5.2	F	6.5	PASS
Orange	45	4	0	17.0	F	14	1	0	0	5.2	F	8.0	PASS
Placer	95	14	3	40.7	F	9	4	1	0	5.7	F	8.7	PASS
Plumas	DNC	DNC	DNC	DNC	DNC	32	11	0	0	16.2	F	14.7	FAIL
Riverside	244	99	12	138.8	F	21	4	0	0	9.0	F	13.9	FAIL
Sacramento	60	10	0	25.0	F	18	4	5	0	11.3	F	10.4	PASS
San Benito	7	0	0	2.3	D	11	0	0	0	3.7	F	5.5	PASS
San Bernardino	220	146	42	174.3	F	22	5	0	0	9.8	F	14.7	FAIL
San Diego	118	8	0	43.3	F	6	0	0	0	2.0	C	9.3	PASS
San Francisco	0	0	0	0.0	A	9	11	1	0	9.2	F	9.6	PASS
San Joaquin	32	1	0	11.2	F	45	9	3	0	21.5	F	13.8	FAIL
San Luis Obispo	19	1	0	6.8	F	2	0	0	0	0.7	B	8.9	PASS
San Mateo	1	1	0	0.8	B	7	12	0	0	8.3	F	9.3	PASS
Santa Barbara	5	0	0	1.7	C	6	8	1	0	6.7	F	8.1	PASS
Santa Clara	4	3	0	2.8	D	14	11	0	0	10.2	F	10.7	PASS

CALIFORNIA (cont.)

American Lung Association in California

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Santa Cruz	1	0	0	0.3	B	8	5	0	0	5.2	F	6.9	PASS
Shasta	42	2	0	15.0	F	1	5	0	0	2.8	D	9.6	PASS
Siskiyou	4	0	0	1.3	C	17	23	0	0	17.2	F	10.1	PASS
Solano	5	1	0	2.2	D	7	14	1	0	10.0	F	10.8	PASS
Sonoma	1	0	0	0.3	B	4	11	2	0	8.2	F	7.0	PASS
Stanislaus	82	9	0	31.8	F	54	16	1	0	26.7	F	14.2	FAIL
Sutter	50	0	0	16.7	F	11	0	0	0	3.7	F	9.2	PASS
Tehama	57	7	0	22.5	F	13	16	0	0	12.3	F	INC	INC
Tulare	242	49	0	105.2	F	19	9	0	0	10.8	F	16.1	FAIL
Tuolumne	83	8	0	31.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ventura	39	3	0	14.5	F	4	4	3	2	7.0	F	11.0	PASS
Yolo	8	0	0	2.7	D	1	2	1	0	2.0	C	9.3	PASS

COLORADO

American Lung Association in Colorado

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Adams	511,868	135,776	53,587	9,717	34,100	15,049	208	19,585	150,229	46,711	257,963
Arapahoe	651,215	153,397	85,065	10,979	44,914	21,361	264	28,479	200,921	52,474	261,137
Archuleta	13,765	2,485	3,585	178	995	642	6	929	4,781	1,525	3,193
Boulder	326,078	61,951	46,486	4,434	23,860	11,305	132	15,118	106,582	30,699	73,061
Chaffee	20,027	3,009	5,084	215	1,510	924	8	1,327	7,151	2,023	2,962
Clear Creek	9,605	1,448	1,953	104	723	420	4	586	3,391	686	1,130
Delta	30,953	6,197	8,024	444	2,188	1,401	13	2,034	10,484	4,429	5,839
Denver	716,492	139,926	84,216	10,014	52,557	22,264	291	28,952	229,276	82,104	326,156
Douglas	342,776	88,978	40,935	6,368	22,775	11,168	139	14,826	102,766	8,975	61,999
El Paso	713,856	172,064	91,063	12,315	49,015	22,736	290	30,212	217,978	68,538	222,362
Garfield	59,770	15,072	7,858	1,079	4,023	1,962	24	2,628	18,101	4,946	19,175
Grand	15,525	2,609	2,732	187	1,152	623	6	856	5,310	1,219	2,000
Gunnison	17,246	2,931	2,236	210	1,299	578	7	760	5,727	1,678	2,220
Jefferson	580,233	114,515	95,477	8,196	41,776	21,576	235	29,476	190,255	39,799	127,678
La Plata	56,310	10,684	9,668	765	4,090	2,139	23	2,935	18,677	5,005	12,182
Larimer	350,518	68,703	54,938	4,917	25,460	12,323	142	16,693	114,131	36,054	61,373
Mesa	153,207	33,045	29,238	2,365	10,759	5,864	62	8,192	49,537	21,463	28,885
Moffat	13,188	3,418	2,020	245	875	457	5	625	3,997	1,614	2,590
Montezuma	26,158	5,756	5,785	412	1,811	1,087	11	1,550	8,541	4,235	7,318
Montrose	42,214	9,120	9,836	653	2,935	1,796	17	2,578	13,903	4,854	10,177
Park	18,556	2,810	3,793	201	1,389	835	8	1,167	6,578	1,487	2,052
Pueblo	167,529	37,623	30,988	2,693	11,628	6,320	68	8,807	53,520	28,127	80,496
Rio Blanco	6,336	1,506	985	108	433	224	3	306	1,974	653	977
San Miguel	8,191	1,438	1,201	103	605	305	3	410	2,746	702	1,152
Weld	314,305	82,497	38,224	5,904	20,952	9,752	127	12,935	93,286	32,314	108,618
Totals	**5,165,921**	**1,156,958**	**714,977**	**82,803**	**361,827**	**173,114**	**2,095**	**231,967**	**1,619,841**	**482,314**	**1,682,695**

COLORADO

American Lung Association in Colorado

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	3	0	0	1.0	C	2	0	0	0	0.7	B	INC	INC
Arapahoe	27	1	0	9.5	F	1	0	0	0	0.3	B	6.0	PASS
Archuleta	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Boulder	38	1	0	13.2	F	3	0	0	0	1.0	C	7.0	PASS
Chaffee	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clear Creek	21	2	0	8.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Delta	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Denver	10	0	0	3.3	F	5	0	0	0	1.7	C	9.2	PASS
Douglas	53	4	0	19.7	F	3	1	0	0	1.5	C	6.2	PASS
El Paso	11	0	0	3.7	F	2	0	0	0	0.7	B	6.0	PASS
Garfield	2	1	0	1.2	C	0	0	0	0	0.0	A	INC	INC
Grand	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Gunnison	2	1	0	1.2	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	80	5	0	29.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Plata	16	0	0	5.3	F	5	9	1	0	6.8	F	8.4	PASS
Larimer	42	4	0	16.0	F	1	1	0	0	0.8	B	7.3	PASS
Mesa	4	0	0	1.3	C	1	0	0	0	0.3	B	5.9	PASS
Moffat	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montezuma	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montrose	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Park	4	0	0	1.3	C	2	0	0	0	0.7	B	INC	INC
Pueblo	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	5.5	PASS
Rio Blanco	2	0	0	0.7	B	0	0	0	0	0.0	A	7.9	PASS
San Miguel	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Weld	14	0	0	4.7	F	6	1	0	0	2.5	D	9.1	PASS

CONNECTICUT

American Lung Association in Connecticut

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Fairfield	943,823	212,038	149,918	20,593	76,126	39,383	560	54,861	291,103	92,971	363,243
Hartford	892,697	187,304	152,874	18,191	72,903	37,913	530	53,407	280,026	96,957	351,528
Litchfield	181,111	32,933	38,502	3,198	15,522	8,888	108	12,862	61,124	12,441	21,609
Middlesex	162,682	28,777	33,067	2,795	13,956	7,758	97	11,147	54,545	10,556	26,484
New Haven	857,620	173,046	148,886	16,806	70,700	36,755	509	51,816	271,621	96,563	322,987
New London	266,784	51,733	48,611	5,024	22,251	11,781	159	16,711	85,901	25,063	65,967
Tolland	150,921	26,160	23,845	2,541	12,817	6,287	90	8,681	48,503	10,835	23,699
Windham	117,027	23,202	19,418	2,253	9,739	5,032	70	7,025	37,262	13,135	20,797
Totals	**3,572,665**	**735,193**	**615,121**	**71,401**	**294,014**	**153,797**	**2,120**	**216,509**	**1,130,084**	**358,521**	**1,196,314**

CONNECTICUT

American Lung Association in Connecticut

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Fairfield	42	18	0	23.0	F
Hartford	10	1	0	3.8	F
Litchfield	12	1	0	4.5	F
Middlesex	26	3	0	10.2	F
New Haven	31	9	0	14.8	F
New London	21	3	0	8.5	F
Tolland	12	0	0	4.0	F
Windham	13	1	0	4.8	F

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Fairfield	0	0	0	0	0.0	A	8.1	PASS
Hartford	0	0	0	0	0.0	A	7.5	PASS
Litchfield	1	0	0	0	0.3	B	4.2	PASS
Middlesex	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
New Haven	0	0	0	0	0.0	A	6.8	PASS
New London	0	0	0	0	0.0	A	INC	INC
Tolland	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Windham	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

DELAWARE

American Lung Association in Delaware

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Kent	178,550	40,805	30,483	2,920	14,080	9,420	121	11,922	57,685	23,966	69,754
New Castle	559,335	120,227	87,028	8,605	45,228	29,593	380	36,633	183,147	62,976	241,696
Sussex	229,286	42,584	63,575	3,048	18,083	15,036	156	20,944	82,503	27,750	56,660
Totals	**967,171**	**203,616**	**181,086**	**14,573**	**77,392**	**54,049**	**656**	**69,499**	**323,336**	**114,692**	**368,110**

DELAWARE

American Lung Association in Delaware

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Kent	5	0	0	1.7	C
New Castle	22	1	0	7.8	F
Sussex	8	0	0	2.7	D

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Kent	0	0	0	0	0.0	A	INC	INC
New Castle	3	0	0	0	1.0	C	INC	INC
Sussex	0	0	0	0	0.0	A	6.7	PASS

DISTRICT OF COLUMBIA

American Lung Association in the District of Columbia

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
District of Columbia	702,455	127,494	85,303	13,885	67,121	30,357	275	36,404	199,495	107,806	442,187
Totals	**702,455**	**127,494**	**85,303**	**13,885**	**67,121**	**30,357**	**275**	**36,404**	**199,495**	**107,806**	**442,187**

DISTRICT OF COLUMBIA

American Lung Association in the District of Columbia

	HIGH OZONE DAYS 2016–2018				
County	Orange	Red	Purple	Wgt. Avg.	Grade
District of Columbia	14	1	0	5.2	F

	HIGH PARTICLE POLLUTION DAYS 2016–2018							
	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
District of Columbia	2	0	0	0	0.7	B	9.0	PASS

FLORIDA

American Lung Association in Florida

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Alachua	269,956	48,541	37,836	3,616	19,164	15,388	151	18,802	86,310	50,922	105,796
Baker	28,355	6,715	4,015	500	1,908	1,641	16	2,082	8,806	3,944	5,448
Bay	185,287	39,761	31,678	2,962	12,837	11,548	104	15,034	60,251	24,276	44,216
Brevard	596,849	108,913	141,345	8,114	43,092	42,603	334	58,240	209,867	64,854	154,762
Broward	1,951,260	412,789	324,313	30,754	135,830	121,311	1,090	157,257	635,762	244,310	1,256,553
Citrus	147,929	22,036	53,705	1,642	11,016	12,524	83	18,233	56,902	22,082	18,173
Collier	378,488	64,794	121,935	4,827	27,352	29,654	212	42,379	138,432	39,689	141,797
Columbia	70,503	15,312	13,314	1,141	4,853	4,472	40	5,904	22,990	11,340	19,550
Duval	950,181	214,676	133,483	15,994	64,667	54,910	530	69,179	297,059	134,476	450,723
Escambia	315,534	65,784	53,148	4,901	21,910	19,334	177	24,935	102,101	43,832	113,022
Flagler	112,067	18,884	34,428	1,407	8,183	8,789	62	12,492	41,244	11,450	28,218
Highlands	105,424	17,970	37,222	1,339	7,586	8,495	59	12,315	38,936	21,577	35,445
Hillsborough	1,436,888	323,986	205,315	24,138	97,850	83,443	803	105,402	450,198	207,358	743,667
Holmes	19,477	3,938	3,871	293	1,369	1,279	11	1,701	6,519	4,232	2,638
Indian River	157,413	25,219	52,019	1,879	11,568	12,687	88	18,204	58,831	16,775	39,052
Lake	356,495	68,268	95,109	5,086	25,249	25,793	199	35,876	124,638	40,582	109,098
Lee	754,610	132,623	215,894	9,881	54,399	56,536	422	79,279	270,457	90,400	250,391
Leon	292,502	54,472	39,155	4,058	20,635	16,477	163	20,048	92,747	57,656	127,693
Liberty	8,457	1,512	1,229	113	611	515	5	646	2,798	1,523	2,436
Manatee	394,855	72,121	108,173	5,373	28,333	29,240	220	40,840	140,444	40,662	114,856
Marion	359,977	66,922	104,178	4,986	25,605	26,824	201	37,756	127,728	52,818	107,688
Martin	160,912	26,388	49,690	1,966	11,817	12,698	90	18,050	59,572	16,824	35,430
Miami-Dade	2,761,581	558,250	448,112	41,591	194,215	171,072	1,542	220,114	904,339	436,103	2,401,789
Okaloosa	207,269	46,083	33,189	3,433	14,141	12,360	116	15,854	65,662	25,612	55,655
Orange	1,380,645	305,917	164,820	22,791	94,243	76,289	772	93,319	425,534	211,307	831,907
Osceola	367,990	89,835	48,605	6,693	24,413	20,439	206	25,540	111,571	48,711	254,727
Palm Beach	1,485,941	283,456	355,266	21,118	105,463	103,565	830	141,344	512,309	179,359	682,305
Pasco	539,630	109,651	122,105	8,169	37,833	36,867	301	50,087	183,202	67,164	141,208
Pinellas	975,280	157,672	241,641	11,747	72,125	71,655	544	98,212	351,963	112,593	255,246
Polk	708,009	156,487	143,142	11,659	48,289	45,154	396	60,146	230,084	109,018	297,726
St. Lucie	321,128	63,294	77,503	4,716	22,646	22,443	179	30,756	110,409	38,398	139,092
Santa Rosa	179,349	39,352	28,645	2,932	12,372	10,983	101	14,184	57,775	16,404	31,748
Sarasota	426,718	60,616	156,509	4,516	31,975	36,276	238	52,791	165,020	43,389	72,475
Seminole	467,832	98,309	72,533	7,324	32,569	28,403	261	36,334	151,087	46,050	189,106
Volusia	547,538	96,836	133,733	7,214	39,636	39,194	306	53,638	193,067	70,499	157,810
Wakulla	32,461	6,945	5,086	517	2,260	2,002	18	2,581	10,546	3,543	6,473
Totals	**19,454,790**	**3,884,327**	**3,891,944**	**289,390**	**1,368,014**	**1,272,860**	**10,867**	**1,689,555**	**6,505,159**	**2,609,732**	**9,423,919**

FLORIDA

American Lung Association in Florida

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alachua	1	0	0	0.3	B	0	0	0	0	0.0	A	6.3	PASS
Baker	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bay	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brevard	1	0	0	0.3	B	0	0	0	0	0.0	A	5.7	PASS
Broward	5	0	0	1.7	C	0	0	0	0	0.0	A	6.6	PASS
Citrus	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Collier	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Columbia	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Duval	1	0	0	0.3	B	1	0	0	0	0.3	B	INC	INC
Escambia	3	0	0	1.0	C	0	0	0	0	0.0	A	7.4	PASS
Flagler	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Highlands	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hillsborough	9	1	0	3.5	F	0	0	0	0	0.0	A	7.9	PASS
Holmes	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Indian River	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lee	1	0	0	0.3	B	1	0	0	0	0.3	B	6.6	PASS
Leon	0	0	0	0.0	A	0	0	0	0	0.0	A	7.3	PASS
Liberty	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Manatee	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Marion	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Martin	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Miami-Dade	7	0	0	2.3	D	1	0	0	0	0.3	B	8.0	PASS
Okaloosa	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Orange	3	1	0	1.5	C	0	0	0	0	0.0	A	7.2	PASS
Osceola	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Palm Beach	2	0	0	0.7	B	0	0	0	0	0.0	A	6.4	PASS
Pasco	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pinellas	1	0	0	0.3	B	0	0	0	0	0.0	A	7.3	PASS
Polk	6	0	0	2.0	C	0	0	0	0	0.0	A	6.9	PASS
St. Lucie	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Santa Rosa	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sarasota	2	0	0	0.7	B	0	0	0	0	0.0	A	6.7	PASS
Seminole	4	0	0	1.3	C	0	0	0	0	0.0	A	6.2	PASS
Volusia	0	0	0	0.0	A	0	0	0	0	0.0	A	6.6	PASS
Wakulla	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

GEORGIA

American Lung Association in Georgia

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Bibb	153,095	37,623	23,876	2,852	10,333	8,813	95	11,232	43,798	36,326	95,172
Chatham	289,195	61,279	44,478	4,645	20,274	16,743	181	21,065	85,672	39,488	149,834
Chattooga	24,790	5,555	4,354	421	1,731	1,540	16	1,998	7,379	4,575	4,353
Clarke	127,330	21,989	13,959	1,667	9,179	6,433	79	7,441	38,080	31,645	57,196
Clayton	289,615	80,559	26,997	6,107	18,739	14,223	180	16,817	77,506	50,072	261,809
Cobb	756,865	178,546	92,777	13,534	52,002	41,860	474	51,282	217,167	67,585	367,250
Coffee	43,093	10,534	5,930	799	2,914	2,395	27	2,987	12,256	9,505	18,230
Columbia	154,291	39,147	20,833	2,967	10,335	8,547	97	10,665	43,446	10,858	49,193
Coweta	145,864	35,765	20,242	2,711	9,959	8,433	91	10,593	41,875	14,844	42,590
Dawson	25,083	5,186	5,045	393	1,797	1,672	16	2,214	7,720	2,168	2,016
DeKalb	756,558	174,942	94,120	13,261	52,017	41,366	471	50,572	217,418	106,598	535,786
Dougherty	91,243	21,222	14,027	1,609	6,229	5,187	56	6,556	26,366	25,104	68,944
Douglas	145,331	37,605	16,774	2,851	9,725	7,854	91	9,601	40,542	18,113	88,809
Floyd	97,927	22,702	16,390	1,721	6,739	5,857	61	7,536	28,659	19,427	28,490
Fulton	1,050,114	229,407	122,730	17,390	73,347	57,077	657	68,864	305,399	137,929	633,490
Glynn	85,219	18,521	17,247	1,404	5,993	5,553	53	7,372	25,802	13,913	31,187
Gwinnett	927,781	249,129	93,264	18,885	61,212	47,918	582	57,458	253,730	84,763	590,670
Hall	202,148	51,265	30,106	3,886	13,547	11,528	127	14,625	57,279	26,249	80,340
Henry	230,220	58,952	26,816	4,469	15,487	12,578	144	15,405	64,571	17,086	134,022
Houston	155,469	39,714	19,762	3,010	10,388	8,453	97	10,447	43,529	18,519	69,011
Lowndes	116,321	27,869	14,366	2,113	7,807	5,993	73	7,267	32,673	28,539	54,131
Murray	39,921	9,891	5,931	750	2,710	2,329	25	2,956	11,447	5,987	7,194
Muscogee	194,160	48,112	26,004	3,647	13,016	10,521	122	13,041	54,699	37,759	116,402
Paulding	164,044	42,844	17,394	3,248	10,946	8,682	103	10,487	45,455	12,654	49,499
Pike	18,634	4,359	2,969	330	1,291	1,131	12	1,450	5,469	1,947	2,410
Richmond	201,554	46,063	28,342	3,492	13,849	11,249	126	13,995	58,280	41,554	132,321
Rockdale	90,594	22,370	13,059	1,696	6,175	5,294	56	6,695	26,023	11,803	63,255
Sumter	29,733	6,728	4,979	510	2,051	1,760	18	2,258	8,724	7,208	18,073
Walker	69,410	15,094	12,876	1,144	4,893	4,428	44	5,794	20,924	10,542	6,459
Washington	20,386	4,398	3,540	333	1,440	1,273	13	1,646	6,126	4,787	11,732
Wilkinson	9,036	2,053	1,751	156	632	588	6	778	2,712	2,062	3,908
Totals	**6,705,024**	**1,609,423**	**840,938**	**121,999**	**456,759**	**367,277**	**4,192**	**451,097**	**1,910,727**	**899,609**	**3,773,776**

GEORGIA

American Lung Association in Georgia

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bibb	3	0	0	1.0	C	3	0	0	0	1.0	C	9.3	PASS
Chatham	0	0	0	0.0	A	1	0	0	0	0.3	B	7.8	PASS
Chattooga	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clarke	3	0	0	1.0	C	0	1	0	0	0.5	B	8.1	PASS
Clayton	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	9.1	PASS
Cobb	2	1	0	1.2	C	1	0	0	0	0.3	B	8.7	PASS
Coffee	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Columbia	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Coweta	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dawson	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
DeKalb	8	0	0	2.7	D	1	1	0	0	0.8	B	8.6	PASS
Dougherty	DNC	DNC	DNC	DNC	DNC	1	1	0	0	0.8	B	8.8	PASS
Douglas	6	2	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Floyd	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Fulton	21	1	0	7.5	F	1	0	0	0	0.3	B	10.1	PASS
Glynn	0	0	0	0.0	A	2	0	0	0	0.7	B	7.2	PASS
Gwinnett	6	0	0	2.0	C	1	0	0	0	0.3	B	9.0	PASS
Hall	DNC	DNC	DNC	DNC	DNC	1	1	0	0	0.8	B	7.9	PASS
Henry	13	1	0	4.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Houston	DNC	DNC	DNC	DNC	DNC	3	0	0	0	1.0	C	8.3	PASS
Lowndes	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	7.4	PASS
Murray	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Muscogee	1	0	0	0.3	B	2	0	0	0	0.7	B	9.2	PASS
Paulding	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Pike	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richmond	1	0	0	0.3	B	4	1	0	0	1.8	C	9.5	PASS
Rockdale	12	0	0	4.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sumter	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Walker	DNC	DNC	DNC	DNC	DNC	0	1	0	0	0.5	B	8.8	PASS
Washington	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	7.9	PASS
Wilkinson	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC

HAWAII

American Lung Association in Hawaii

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Hawaii	200,983	43,553	42,032	4,444	14,524	6,922	92	13,054	62,784	30,903	140,018
Honolulu	980,080	207,765	173,793	21,200	71,769	30,825	449	56,918	302,694	73,345	803,626
Kauai	72,133	15,749	14,539	1,607	5,211	2,448	33	4,599	22,446	6,021	50,931
Maui	167,207	36,347	30,566	3,709	12,147	5,506	76	10,237	51,886	14,130	116,808
Totals	**1,420,403**	**303,414**	**260,930**	**30,960**	**103,651**	**45,701**	**650**	**84,808**	**439,810**	**124,399**	**1,111,383**

HAWAII

American Lung Association in Hawaii

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Hawaii	DNC	DNC	DNC	DNC	DNC
Honolulu	0	0	0	0.0	A
Kauai	DNC	DNC	DNC	DNC	DNC
Maui	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Hawaii	16	2	0	0	6.3	F	12.3	FAIL
Honolulu	0	0	0	0	0.0	A	3.6	PASS
Kauai	0	0	0	0	0.0	A	2.9	PASS
Maui	1	0	0	0	0.3	B	4.1	PASS

IDAHO

American Lung Association in Idaho

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Ada	469,966	111,737	67,792	7,997	30,846	19,607	227	27,145	135,509	44,434	73,002
Bannock	87,138	22,849	12,400	1,635	5,520	3,423	42	4,789	24,104	11,768	14,350
Benewah	9,226	2,084	2,073	149	609	472	4	703	2,881	1,342	1,414
Butte	2,611	626	612	45	168	131	1	200	801	392	226
Canyon	223,499	63,627	30,762	4,554	13,744	8,652	108	12,057	60,254	25,416	66,818
Franklin	13,726	4,380	1,943	313	802	523	7	738	3,560	1,194	1,228
Idaho	16,513	3,259	4,606	233	1,118	917	8	1,429	5,439	2,587	1,538
Jerome	24,015	7,394	3,117	529	1,431	904	12	1,250	6,274	2,974	9,335
Lemhi	7,961	1,488	2,409	106	544	458	4	726	2,679	1,154	533
Shoshone	12,796	2,630	2,923	188	866	662	6	988	4,079	2,371	1,140
Totals	**867,451**	**220,074**	**128,637**	**15,751**	**55,647**	**35,748**	**419**	**50,025**	**245,580**	**93,632**	**169,584**

IDAHO

American Lung Association in Idaho

	HIGH OZONE DAYS 2016–2018				
County	Orange	Red	Purple	Wgt. Avg.	Grade
Ada	20	0	0	6.7	F
Bannock	DNC	DNC	DNC	DNC	DNC
Benewah	DNC	DNC	DNC	DNC	DNC
Butte	3	0	0	1.0	C
Canyon	DNC	DNC	DNC	DNC	DNC
Franklin	DNC	DNC	DNC	DNC	DNC
Idaho	INC	INC	INC	INC	INC
Jerome	DNC	DNC	DNC	DNC	DNC
Lemhi	DNC	DNC	DNC	DNC	DNC
Shoshone	DNC	DNC	DNC	DNC	DNC

	HIGH PARTICLE POLLUTION DAYS 2016–2018							
	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Ada	6	1	0	0	2.5	D	7.7	PASS
Bannock	2	3	0	0	2.2	D	INC	INC
Benewah	22	5	2	0	11.2	F	INC	INC
Butte	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Canyon	7	1	0	0	2.8	D	9.4	PASS
Franklin	7	2	0	0	3.3	F	INC	INC
Idaho	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jerome	10	1	0	0	3.8	F	INC	INC
Lemhi	11	4	0	0	5.7	F	11.4	PASS
Shoshone	29	6	1	0	13.3	F	11.2	PASS

ILLINOIS

American Lung Association in Illinois

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Adams	65,691	14,779	13,290	887	4,405	3,716	42	4,807	20,067	7,803	5,551
Champaign	209,983	39,434	26,930	2,368	14,952	9,930	133	11,800	62,828	37,121	69,623
Clark	15,596	3,540	3,097	213	1,044	883	10	1,144	4,766	1,702	562
Cook	5,180,493	1,129,672	758,167	67,835	353,721	259,528	3,271	321,077	1,538,653	701,869	3,000,419
DuPage	928,589	210,552	143,938	12,643	62,583	48,073	587	60,485	276,877	60,169	312,483
Effingham	34,208	8,104	6,043	487	2,267	1,829	22	2,336	10,181	3,277	1,520
Hamilton	8,163	1,794	1,783	108	550	481	5	628	2,537	990	321
Jersey	21,847	4,455	4,260	268	1,508	1,256	14	1,620	6,851	1,864	957
Jo Daviess	21,366	4,017	6,004	241	1,485	1,438	14	1,929	7,107	1,656	1,181
Kane	534,216	136,009	73,009	8,167	34,780	25,892	338	32,243	152,367	45,180	231,005
Lake	700,832	168,886	99,810	10,141	46,434	35,011	444	43,799	204,350	54,353	273,375
McHenry	308,570	72,396	45,024	4,347	20,605	15,817	195	19,921	91,332	18,136	59,799
McLean	172,828	37,136	22,860	2,230	11,878	8,277	109	10,040	50,773	23,366	35,797
Macon	104,712	23,150	20,960	1,390	7,061	5,902	66	7,612	32,055	17,557	24,937
Macoupin	45,313	9,644	9,006	579	3,089	2,600	29	3,363	14,083	5,740	1,834
Madison	264,461	57,756	45,485	3,468	17,974	14,239	167	18,086	80,268	35,925	40,298
Peoria	180,621	42,619	30,816	2,559	11,997	9,427	114	11,931	53,343	29,227	54,743
Randolph	32,106	6,203	5,972	372	2,250	1,806	21	2,302	10,083	3,834	4,881
Rock Island	143,477	31,963	27,672	1,919	9,665	7,949	91	10,203	43,632	19,754	41,412
St. Clair	261,059	61,073	41,261	3,667	17,419	13,467	165	16,975	77,184	38,065	100,558
Sangamon	195,348	43,347	34,887	2,603	13,202	10,622	123	13,556	59,249	25,172	38,619
Will	692,310	172,143	90,406	10,337	45,481	33,460	438	41,517	198,663	44,038	256,365
Winnebago	284,081	66,490	49,819	3,993	18,901	15,178	179	19,358	84,760	45,006	89,449
Totals	**10,405,870**	**2,345,162**	**1,560,499**	**140,823**	**703,250**	**526,778**	**6,576**	**656,731**	**3,082,010**	**1,221,804**	**4,645,689**

ILLINOIS

American Lung Association in Illinois

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Champaign	5	0	0	1.7	C	0	0	0	0	0.0	A	7.6	PASS
Clark	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cook	44	9	0	19.2	F	2	0	0	0	0.7	B	10.3	PASS
DuPage	15	0	0	5.0	F	0	0	0	0	0.0	A	8.8	PASS
Effingham	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	3	0	0	1.0	C	0	0	0	0	0.0	A	8.4	PASS
Jersey	11	0	0	3.7	F	0	0	0	0	0.0	A	INC	INC
Jo Daviess	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kane	14	0	0	4.7	F	0	0	0	0	0.0	A	8.4	PASS
Lake	21	2	0	8.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McHenry	17	0	0	5.7	F	0	0	0	0	0.0	A	7.6	PASS
McLean	2	0	0	0.7	B	0	0	0	0	0.0	A	8.7	PASS
Macon	6	0	0	2.0	C	0	0	0	0	0.0	A	9.0	PASS
Macoupin	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Madison	25	2	0	9.3	F	1	0	0	0	0.3	B	9.9	PASS
Peoria	8	0	0	2.7	D	0	0	0	0	0.0	A	8.5	PASS
Randolph	3	0	0	1.0	C	0	0	0	0	0.0	A	8.4	PASS
Rock Island	2	0	0	0.7	B	0	0	0	0	0.0	A	INC	INC
St. Clair	9	1	0	3.5	F	0	0	0	0	0.0	A	9.7	PASS
Sangamon	4	0	0	1.3	C	0	0	0	0	0.0	A	8.6	PASS
Will	5	0	0	1.7	C	0	0	0	0	0.0	A	INC	INC
Winnebago	5	1	0	2.2	D	0	0	0	0	0.0	A	INC	INC

INDIANA

American Lung Association in Indiana

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Allen	375,351	96,407	54,718	8,390	27,609	24,979	269	29,997	125,725	49,641	99,590
Bartholomew	82,753	19,689	13,487	1,713	6,239	5,773	60	7,019	28,495	8,238	15,386
Boone	66,999	17,718	8,954	1,542	4,909	4,486	48	5,290	22,323	3,585	6,615
Brown	15,234	2,732	3,668	238	1,252	1,352	11	1,691	5,810	1,519	687
Carroll	20,127	4,451	3,949	387	1,562	1,568	14	1,932	7,188	1,756	1,201
Clark	117,360	26,376	18,524	2,295	9,035	8,391	84	10,083	41,223	12,975	20,078
Delaware	114,772	21,074	19,672	1,834	9,194	8,142	82	9,986	41,911	23,799	15,212
Dubois	42,565	10,277	7,430	894	3,218	3,145	31	3,825	14,755	3,155	4,214
Elkhart	205,560	56,565	30,282	4,923	14,750	13,493	148	16,276	67,254	23,202	52,263
Floyd	77,781	17,609	12,549	1,532	5,989	5,657	56	6,800	27,357	7,231	9,564
Greene	32,006	7,019	6,248	611	2,493	2,512	23	3,087	11,473	4,423	1,103
Hamilton	330,086	89,053	40,862	7,750	23,994	21,480	236	25,130	108,861	13,797	54,838
Hendricks	167,009	41,780	23,141	3,636	12,442	11,279	120	13,373	56,582	9,657	27,120
Henry	48,271	9,877	9,134	860	3,818	3,734	35	4,576	17,525	6,434	3,149
Howard	82,366	18,680	16,056	1,626	6,321	6,250	59	7,740	29,080	9,942	12,346
Huntington	36,240	7,812	6,230	680	2,827	2,697	26	3,268	12,934	3,532	1,985
Jackson	44,111	10,835	7,218	943	3,306	3,134	32	3,796	15,120	5,183	5,343
Johnson	156,225	38,713	22,769	3,369	11,643	10,548	112	12,630	53,005	11,784	17,578
Knox	36,895	7,921	6,582	689	2,864	2,691	27	3,302	13,112	5,447	2,785
Lake	484,411	113,194	80,104	9,851	36,859	34,784	346	42,135	168,517	74,864	222,969
LaPorte	110,007	23,561	19,692	2,050	8,582	8,225	79	10,039	39,317	16,212	23,147
Madison	129,641	28,038	23,714	2,440	10,079	9,700	93	11,892	46,215	20,908	19,694
Marion	954,670	235,211	120,358	20,470	70,986	60,620	682	71,598	321,447	160,661	431,505
Monroe	146,917	22,966	19,249	1,999	12,037	9,253	106	11,071	54,238	28,177	24,381
Morgan	70,116	15,846	11,874	1,379	5,429	5,316	50	6,391	24,863	7,339	2,850
Perry	19,102	4,013	3,590	349	1,497	1,450	14	1,782	6,869	2,167	1,160
Porter	169,594	37,424	27,803	3,257	13,131	12,330	122	14,874	59,981	14,826	29,129
Posey	25,540	5,627	4,799	490	1,987	1,980	18	2,420	9,130	2,311	1,073
St. Joseph	270,771	64,005	42,783	5,570	20,430	18,618	194	22,570	93,183	35,068	75,154
Shelby	44,593	10,170	7,644	885	3,433	3,332	32	4,029	15,724	5,065	3,495
Spencer	20,327	4,440	3,932	386	1,587	1,600	15	1,961	7,300	1,839	1,066
Sullivan	20,690	3,979	3,718	346	1,656	1,561	15	1,905	7,576	2,513	1,724
Tippecanoe	193,048	39,983	22,471	3,480	14,884	11,360	139	13,470	66,978	32,114	47,441
Vanderburgh	180,974	39,047	30,573	3,398	14,042	13,032	129	15,856	64,158	26,349	29,780
Vigo	107,386	21,965	17,517	1,912	8,404	7,483	77	9,114	38,291	18,824	15,570
Wabash	31,280	6,512	6,526	567	2,455	2,451	22	3,060	11,316	3,631	1,767
Warrick	62,567	14,921	10,947	1,299	4,744	4,620	45	5,624	21,754	4,373	4,900
Whitley	34,074	7,899	6,124	687	2,607	2,554	24	3,116	11,961	2,377	1,604
Totals	**5,127,419**	**1,203,389**	**774,891**	**104,727**	**388,291**	**351,578**	**3,677**	**422,705**	**1,768,553**	**664,918**	**1,289,466**

INDIANA

American Lung Association in Indiana

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allen	10	0	0	3.3	F	0	0	0	0	0.0	A	8.6	PASS
Bartholomew	8	0	0	2.7	D	1	0	0	0	0.3	B	7.6	PASS
Boone	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brown	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	12	0	0	4.0	F	0	0	0	0	0.0	A	9.0	PASS
Delaware	5	0	0	1.7	C	1	0	0	0	0.3	B	7.9	PASS
Dubois	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.6	PASS
Elkhart	10	0	0	3.3	F	2	0	0	0	0.7	B	8.3	PASS
Floyd	16	0	0	5.3	F	0	0	0	0	0.0	A	INC	INC
Greene	7	0	0	2.3	D	0	0	0	0	0.0	A	7.9	PASS
Hamilton	10	0	0	3.3	F	1	0	0	0	0.3	B	8.1	PASS
Hendricks	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Henry	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	7.5	PASS
Howard	INC	INC	INC	INC	INC	0	0	0	0	0.0	A	8.3	PASS
Huntington	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jackson	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	12	1	0	4.5	F	2	1	1	0	1.8	C	9.4	PASS
LaPorte	16	1	0	5.8	F	0	0	0	0	0.0	A	INC	INC
Madison	7	0	0	2.3	D	1	0	0	0	0.3	B	8.3	PASS
Marion	18	0	0	6.0	F	7	1	0	0	2.8	D	10.4	PASS
Monroe	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.8	PASS
Morgan	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Porter	19	0	0	6.3	F	0	1	0	0	0.5	B	7.7	PASS
Posey	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Joseph	19	0	0	6.3	F	0	0	0	0	0.0	A	8.9	PASS
Shelby	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Spencer	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.4	PASS
Sullivan	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Tippecanoe	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.1	PASS
Vanderburgh	9	0	0	3.0	D	0	0	0	0	0.0	A	9.1	PASS
Vigo	6	0	0	2.0	C	0	0	0	0	0.0	A	9.0	PASS
Wabash	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Warrick	10	1	0	3.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Whitley	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.7	PASS

IOWA

American Lung Association in Iowa

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Black Hawk	132,408	28,810	21,719	1,658	8,216	5,752	79	7,803	42,284	20,811	25,446
Bremer	24,947	5,567	4,886	320	1,529	1,182	15	1,660	8,023	1,547	1,251
Clinton	46,518	10,602	9,160	610	2,839	2,303	28	3,224	14,995	5,727	4,059
Delaware	17,069	4,031	3,292	232	1,032	848	10	1,182	5,457	1,521	629
Harrison	14,134	3,278	2,785	189	858	706	8	988	4,543	1,347	569
Johnson	151,260	30,183	17,736	1,737	9,670	5,659	90	7,160	48,280	22,536	33,328
Lee	34,055	7,297	6,917	420	2,113	1,720	20	2,415	11,175	4,758	3,178
Linn	225,909	52,510	35,702	3,022	13,782	9,969	134	13,425	71,163	20,652	32,676
Montgomery	10,003	2,274	2,144	131	609	514	6	732	3,247	1,360	668
Muscatine	42,929	10,691	7,145	615	2,558	1,931	26	2,634	13,314	4,973	10,116
Palo Alto	8,929	2,037	1,958	117	542	449	5	645	2,884	834	638
Polk	487,204	121,315	63,631	6,983	29,203	19,715	289	25,704	148,762	47,499	111,152
Pottawattamie	93,533	22,030	16,335	1,268	5,669	4,343	56	5,959	29,594	10,760	11,737
Scott	173,283	41,080	28,142	2,365	10,501	7,756	103	10,506	54,424	21,030	35,262
Story	98,105	16,245	11,812	935	6,530	3,622	59	4,575	32,414	16,410	16,343
Van Buren	7,020	1,601	1,576	92	426	366	4	526	2,282	917	287
Warren	51,056	12,657	8,025	729	3,052	2,249	30	3,034	15,805	3,502	3,087
Woodbury	102,539	26,742	15,471	1,539	6,025	4,326	61	5,818	31,072	13,835	28,376
Totals	**1,720,901**	**398,950**	**258,436**	**22,963**	**105,155**	**73,411**	**1,023**	**97,992**	**539,718**	**200,019**	**318,802**

IOWA

American Lung Association in Iowa

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Black Hawk	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.8	PASS
Bremer	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clinton	1	0	0	0.3	B	0	0	0	0	0.0	A	8.3	PASS
Delaware	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Harrison	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnson	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.6	PASS
Lee	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.5	PASS
Linn	4	0	0	1.3	C	1	0	0	0	0.3	B	8.0	PASS
Montgomery	0	0	0	0.0	A	0	0	0	0	0.0	A	6.5	PASS
Muscatine	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.3	PASS
Palo Alto	2	0	0	0.7	B	0	0	0	0	0.0	A	6.7	PASS
Polk	2	0	0	0.7	B	2	0	0	0	0.7	B	7.4	PASS
Pottawattamie	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	7.9	PASS
Scott	6	0	0	2.0	C	0	0	0	0	0.0	A	8.4	PASS
Story	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Van Buren	0	0	0	0.0	A	0	0	0	0	0.0	A	6.9	PASS
Warren	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Woodbury	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.7	PASS

KANSAS

American Lung Association in Kansas

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Johnson	597,555	145,643	86,723	11,120	44,566	30,438	337	39,886	189,480	32,334	121,136
Leavenworth	81,352	19,284	11,779	1,472	6,125	4,159	46	5,441	25,996	7,925	17,116
Neosho	15,951	3,929	3,164	300	1,167	904	9	1,243	5,151	2,271	1,604
Sedgwick	513,607	131,919	74,487	10,072	37,686	25,503	290	33,529	159,665	67,722	165,169
Shawnee	177,499	41,950	32,296	3,203	13,238	9,780	100	13,250	57,584	24,062	46,674
Sumner	22,996	5,667	4,303	433	1,685	1,287	13	1,752	7,411	3,016	2,436
Trego	2,793	500	740	38	219	190	2	270	1,005	316	151
Wyandotte	165,324	46,051	20,281	3,516	11,844	7,635	93	9,834	49,497	30,035	98,310
Totals	**1,577,077**	**394,943**	**233,773**	**30,155**	**116,530**	**79,896**	**889**	**105,206**	**495,790**	**167,681**	**452,596**

KANSAS

American Lung Association in Kansas

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Johnson	0	0	0	0.0	A	0	0	0	0	0.0	A	7.4	PASS
Leavenworth	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Neosho	0	0	0	0.0	A	0	0	0	0	0.0	A	INC	INC
Sedgwick	0	1	0	0.5	B	0	0	0	0	0.0	A	7.8	PASS
Shawnee	0	0	0	0.0	A	0	0	0	0	0.0	A	8.5	PASS
Sumner	0	0	0	0.0	A	0	0	0	0	0.0	A	7.2	PASS
Trego	0	0	0	0.0	A	0	0	0	0	0.0	A	INC	INC
Wyandotte	4	1	0	1.8	C	1	0	0	0	0.3	B	9.1	PASS

KENTUCKY

American Lung Association in Kentucky

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Bell	26,569	5,646	5,105	333	2,390	2,703	24	2,861	10,625	7,998	1,588
Boone	131,533	34,210	17,804	2,017	11,121	11,720	117	11,883	49,163	8,371	16,417
Boyd	47,240	10,048	9,221	592	4,248	4,830	42	5,124	18,895	8,229	3,249
Bullitt	81,069	17,795	12,652	1,049	7,241	7,836	72	8,043	32,032	7,596	4,649
Campbell	93,152	19,395	14,549	1,143	8,391	8,846	82	9,076	37,236	11,741	7,249
Carter	27,004	6,077	5,065	358	2,389	2,693	24	2,847	10,624	8,154	920
Christian	71,671	19,263	8,791	1,136	5,839	5,419	64	5,452	26,155	11,906	24,824
Daviess	101,104	24,735	17,128	1,458	8,700	9,528	89	9,963	38,671	15,026	12,362
Edmonson	12,274	2,253	2,546	133	1,143	1,301	11	1,387	5,090	2,110	643
Fayette	323,780	67,639	43,214	3,987	28,861	28,195	287	28,335	128,453	45,485	94,095
Greenup	35,268	7,535	7,388	444	3,167	3,674	31	3,942	14,111	5,747	1,375
Hancock	8,758	2,238	1,486	132	746	836	8	874	3,309	1,038	414
Hardin	110,356	27,155	15,397	1,601	9,475	9,877	98	10,038	41,975	14,254	26,889
Henderson	45,591	10,568	8,012	623	4,002	4,456	40	4,668	17,765	7,235	6,219
Jefferson	770,517	170,791	124,503	10,068	68,156	72,482	680	74,957	302,915	115,810	254,471
Jessamine	53,920	12,999	8,087	766	4,662	4,946	48	5,074	20,673	6,562	6,149
Livingston	9,242	1,883	2,006	111	845	1,007	8	1,082	3,756	1,268	443
McCracken	65,346	14,650	12,940	864	5,778	6,573	58	7,011	25,748	9,423	10,949
Madison	92,368	19,144	12,737	1,129	8,258	8,154	82	8,229	36,752	14,065	9,613
Morgan	13,345	2,438	2,235	144	1,243	1,331	12	1,373	5,514	3,102	994
Oldham	66,470	16,937	8,777	998	5,688	6,064	59	6,115	25,060	3,463	7,813
Perry	26,092	5,984	4,429	353	2,302	2,557	23	2,662	10,200	7,355	1,217
Pike	58,402	12,021	10,962	709	5,310	6,004	52	6,318	23,560	13,499	1,833
Pulaski	64,623	14,373	12,130	847	5,745	6,500	57	6,865	25,522	12,392	3,811
Simpson	18,529	4,466	3,056	263	1,605	1,757	16	1,827	7,123	2,271	2,775
Trigg	14,643	3,206	3,259	189	1,312	1,576	13	1,707	5,840	1,901	1,766
Warren	131,264	30,099	16,896	1,774	11,387	11,049	116	11,090	50,704	20,486	29,111
Washington	12,084	2,878	2,176	170	1,055	1,197	11	1,259	4,678	1,644	1,533
Totals	**2,512,214**	**566,426**	**392,551**	**33,391**	**221,060**	**233,114**	**2,224**	**240,062**	**982,147**	**368,131**	**533,371**

KENTUCKY

American Lung Association in Kentucky

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bell	0	0	0	0.0	A	1	1	0	0	0.8	B	8.5	PASS
Boone	1	1	0	0.8	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Boyd	3	0	0	1.0	C	0	0	0	0	0.0	A	7.6	PASS
Bullitt	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Campbell	6	0	0	2.0	C	0	0	0	0	0.0	A	8.0	PASS
Carter	0	0	0	0.0	A	1	0	0	0	0.3	B	6.4	PASS
Christian	0	0	0	0.0	A	0	0	0	0	0.0	A	8.2	PASS
Daviess	2	1	0	1.2	C	0	0	0	0	0.0	A	8.4	PASS
Edmonson	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fayette	0	0	0	0.0	A	0	0	0	0	0.0	A	INC	INC
Greenup	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hardin	1	0	0	0.3	B	0	0	0	0	0.0	A	8.2	PASS
Henderson	6	0	0	2.0	C	1	0	0	0	0.3	B	8.8	PASS
Jefferson	24	3	0	9.5	F	0	0	0	0	0.0	A	9.4	PASS
Jessamine	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Livingston	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McCracken	1	0	0	0.3	B	1	0	0	0	0.3	B	8.3	PASS
Madison	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Morgan	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oldham	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	0	0	0	0.0	A	0	1	0	0	0.5	B	7.6	PASS
Pike	0	0	0	0.0	A	2	0	0	0	0.7	B	7.2	PASS
Pulaski	0	0	0	0.0	A	0	0	0	0	0.0	A	7.7	PASS
Simpson	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Trigg	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Warren	0	0	0	0.0	A	0	0	0	0	0.0	A	8.1	PASS
Washington	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

LOUISIANA

American Lung Association in Louisiana

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Ascension Parish	124,672	33,371	14,734	2,920	8,326	8,809	81	9,828	39,309	13,341	39,717
Bossier Parish	127,185	31,589	18,240	2,764	8,613	9,258	83	10,615	41,148	17,888	42,942
Caddo Parish	242,922	57,537	41,606	5,035	16,568	18,803	157	22,419	80,865	52,996	134,679
Calcasieu Parish	203,112	50,566	30,057	4,425	13,742	15,049	132	17,430	66,031	29,744	66,679
East Baton Rouge Parish	440,956	99,927	62,528	8,744	30,745	32,399	285	36,720	145,964	71,761	245,155
Iberville Parish	32,721	6,743	5,181	590	2,342	2,595	21	3,021	11,289	6,880	17,178
Jefferson Parish	434,051	95,458	74,330	8,353	30,340	34,465	281	40,959	147,899	67,200	206,828
Lafayette Parish	242,782	57,350	32,067	5,018	16,809	17,753	157	19,972	79,598	36,301	84,123
Lafourche Parish	98,115	22,793	15,168	1,994	6,789	7,561	64	8,825	32,780	15,989	22,780
Livingston Parish	139,567	35,715	18,422	3,125	9,418	10,114	91	11,477	44,810	15,562	17,575
Orleans Parish	391,006	78,086	57,760	6,833	28,256	30,204	252	34,414	134,593	90,329	270,766
Ouachita Parish	154,475	38,427	22,847	3,363	10,450	11,410	100	13,203	50,179	31,790	64,840
Pointe Coupee Parish	21,940	4,793	4,516	419	1,519	1,839	14	2,282	7,606	4,428	8,717
Rapides Parish	130,562	32,250	21,375	2,822	8,811	9,954	85	11,796	42,873	24,641	50,765
St. Bernard Parish	46,721	12,440	5,340	1,089	3,126	3,251	30	3,589	14,683	9,306	17,722
St. James Parish	21,037	4,748	3,610	415	1,461	1,677	14	2,002	7,142	3,492	10,886
St. John the Baptist Parish	43,184	10,617	6,144	929	2,950	3,256	28	3,756	14,163	7,766	28,513
St. Martin Parish	53,621	12,978	8,057	1,136	3,669	4,088	35	4,761	17,702	10,179	18,995
St. Tammany Parish	258,111	61,917	43,694	5,418	17,603	20,343	167	24,330	86,210	30,253	55,792
Tangipahoa Parish	133,777	32,761	19,230	2,867	9,110	9,843	87	11,300	43,567	23,304	49,317
Terrebonne Parish	111,021	28,090	15,984	2,458	7,492	8,238	72	9,522	35,984	18,950	36,999
West Baton Rouge Parish	26,427	6,461	3,607	565	1,809	1,955	17	2,229	8,629	3,299	11,811
Totals	**3,477,965**	**814,617**	**524,497**	**71,282**	**239,947**	**262,863**	**2,254**	**304,449**	**1,153,025**	**585,399**	**1,502,779**

LOUISIANA

American Lung Association in Louisiana

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Ascension Parish	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bossier Parish	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caddo Parish	0	0	0	0.0	A	2	0	0	0	0.7	B	10.4	PASS
Calcasieu Parish	6	0	0	2.0	C	1	0	0	0	0.3	B	7.8	PASS
East Baton Rouge Parish	18	0	0	6.0	F	4	0	0	0	1.3	C	9.1	PASS
Iberville Parish	9	0	0	3.0	D	0	1	0	0	0.5	B	8.5	PASS
Jefferson Parish	4	0	0	1.3	C	0	0	0	0	0.0	A	7.4	PASS
Lafayette Parish	1	0	0	0.3	B	0	0	0	0	0.0	A	7.9	PASS
Lafourche Parish	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Livingston Parish	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Orleans Parish	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.0	PASS
Ouachita Parish	0	0	0	0.0	A	0	0	0	0	0.0	A	8.0	PASS
Pointe Coupee Parish	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rapides Parish	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	INC	INC
St. Bernard Parish	5	0	0	1.7	C	0	0	0	0	0.0	A	8.3	PASS
St. James Parish	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. John the Baptist Parish	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Martin Parish	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Tammany Parish	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tangipahoa Parish	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.4	PASS
Terrebonne Parish	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.2	PASS
West Baton Rouge Parish	8	0	0	2.7	D	0	0	0	0	0.0	A	9.2	PASS

MAINE

American Lung Association in Maine

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Androscoggin	107,679	23,332	19,091	1,722	10,438	6,605	80	8,501	41,811	12,838	10,352
Aroostook	67,111	12,226	16,196	902	6,601	4,679	50	6,319	27,614	9,988	4,061
Cumberland	293,557	54,796	54,161	4,044	29,601	18,586	218	23,919	118,220	23,332	28,318
Franklin	29,897	5,235	6,705	386	2,998	2,038	22	2,711	12,339	4,141	1,285
Hancock	54,811	9,364	13,489	691	5,465	3,878	41	5,242	22,867	6,233	2,934
Kennebec	122,083	23,566	24,350	1,739	12,071	7,955	91	10,403	49,097	13,290	6,643
Knox	39,771	7,081	10,057	523	3,924	2,803	30	3,815	16,461	4,209	1,939
Oxford	57,618	10,624	12,483	784	5,693	3,925	43	5,202	23,565	9,490	2,785
Penobscot	151,096	27,394	28,204	2,022	15,332	9,637	113	12,413	61,257	21,154	9,578
Washington	31,490	5,938	7,687	438	3,069	2,187	23	2,964	12,864	5,613	3,324
York	206,229	38,565	42,233	2,846	20,501	13,624	154	17,877	83,647	18,133	12,164
Totals	**1,161,342**	**218,121**	**234,656**	**16,098**	**115,693**	**75,918**	**865**	**99,366**	**469,742**	**128,421**	**83,383**

MAINE

American Lung Association in Maine

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Androscoggin	0	0	0	0.0	A	0	0	0	0	0.0	A	6.1	PASS
Aroostook	0	0	0	0.0	A	0	2	0	0	1.0	C	7.0	PASS
Cumberland	2	0	0	0.7	B	0	0	0	0	0.0	A	6.6	PASS
Franklin	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Hancock	8	1	0	3.2	D	0	0	0	0	0.0	A	3.7	PASS
Kennebec	0	0	0	0.0	A	0	0	0	0	0.0	A	5.5	PASS
Knox	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oxford	0	0	0	0.0	A	0	0	0	0	0.0	A	6.4	PASS
Penobscot	0	0	0	0.0	A	0	0	0	0	0.0	A	5.8	PASS
Washington	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
York	4	1	0	1.8	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MARYLAND

American Lung Association in Maryland

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Anne Arundel	576,031	128,107	84,550	9,687	42,383	25,408	315	37,074	161,525	39,231	186,967
Baltimore	828,431	178,931	142,310	13,531	60,923	38,537	451	57,147	237,801	79,482	359,919
Calvert	92,003	21,300	13,687	1,611	6,678	4,196	50	6,139	25,984	4,912	20,253
Carroll	168,429	36,532	28,378	2,763	12,380	8,057	92	11,918	48,947	9,828	19,008
Cecil	102,826	23,268	16,186	1,760	7,494	4,747	56	6,981	29,266	8,406	15,540
Charles	161,503	38,703	20,198	2,927	11,697	6,879	88	9,899	44,200	10,487	99,163
Dorchester	31,998	6,752	6,911	511	2,330	1,656	17	2,516	9,602	4,851	11,974
Frederick	255,648	59,180	36,972	4,475	18,590	11,311	140	16,499	71,306	15,552	69,902
Garrett	29,163	5,426	6,524	410	2,190	1,567	16	2,381	9,054	3,483	1,068
Harford	253,956	56,335	41,128	4,260	18,591	11,781	139	17,369	72,620	17,528	62,121
Howard	323,196	78,743	44,629	5,954	23,168	13,918	176	20,239	88,372	16,874	158,169
Kent	19,383	3,066	5,177	232	1,487	1,109	11	1,715	6,274	2,329	4,267
Montgomery	1,052,567	244,355	163,516	18,478	76,171	47,126	573	69,273	294,362	72,247	595,735
Prince George's	909,308	202,301	120,600	15,298	67,250	38,802	495	56,021	252,079	73,777	795,954
Washington	150,926	32,969	26,006	2,493	11,058	7,099	83	10,533	43,453	15,871	32,881
Baltimore City	602,495	123,177	84,387	9,315	45,538	25,702	327	37,219	169,118	109,306	435,247
Totals	**5,557,863**	**1,239,145**	**841,159**	**93,703**	**407,927**	**247,896**	**3,028**	**362,924**	**1,563,960**	**484,164**	**2,868,168**

MARYLAND

American Lung Association in Maryland

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Anne Arundel	23	0	0	7.7	F
Baltimore	33	5	1	14.2	F
Calvert	5	0	0	1.7	C
Carroll	5	0	0	1.7	C
Cecil	23	2	0	8.7	F
Charles	7	0	0	2.3	D
Dorchester	4	1	0	1.8	C
Frederick	5	0	0	1.7	C
Garrett	0	0	0	0.0	A
Harford	27	3	0	10.5	F
Howard	DNC	DNC	DNC	DNC	DNC
Kent	10	0	0	3.3	F
Montgomery	3	0	0	1.0	C
Prince George's	22	1	0	7.8	F
Washington	4	0	0	1.3	C
Baltimore City	14	1	0	5.2	F

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anne Arundel	INC	INC	INC	INC	INC	INC	INC	INC
Baltimore	0	0	0	0	0.0	A	8.0	PASS
Calvert	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carroll	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cecil	0	0	0	0	0.0	A	7.8	PASS
Charles	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dorchester	0	0	0	0	0.0	A	7.1	PASS
Frederick	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Garrett	0	0	0	0	0.0	A	5.7	PASS
Harford	1	0	0	0	0.3	B	7.6	PASS
Howard	0	0	0	0	0.0	A	9.1	PASS
Kent	0	0	0	0	0.0	A	7.0	PASS
Montgomery	0	0	0	0	0.0	A	7.0	PASS
Prince George's	0	0	0	0	0.0	A	7.0	PASS
Washington	1	0	0	0	0.3	B	7.7	PASS
Baltimore City	2	0	0	0	0.7	B	8.4	PASS

MASSACHUSETTS

American Lung Association in Massachusetts

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Barnstable	213,413	32,172	65,299	2,065	18,134	11,789	122	18,089	77,552	16,661	21,843
Berkshire	126,348	21,362	29,398	1,371	10,616	6,057	73	9,020	42,865	13,673	15,393
Bristol	564,022	116,099	95,464	7,452	45,673	23,133	324	33,362	175,717	59,147	99,268
Dukes	17,352	3,042	4,219	195	1,442	849	10	1,273	5,911	1,316	2,209
Essex	790,638	168,488	134,796	10,814	63,406	32,338	454	46,729	244,625	82,387	241,022
Franklin	70,963	12,407	15,624	796	5,921	3,326	41	4,929	23,798	7,395	6,799
Hampden	470,406	101,140	79,049	6,491	37,770	18,884	270	27,193	144,014	76,016	180,153
Hampshire	161,355	23,689	27,808	1,520	14,215	6,687	92	9,510	52,429	15,397	26,743
Middlesex	1,614,714	318,831	246,388	20,463	133,149	63,092	927	89,492	496,382	113,717	459,018
Norfolk	705,388	147,749	118,882	9,483	56,882	28,764	405	41,474	218,600	44,959	180,270
Plymouth	518,132	110,660	93,864	7,102	41,323	21,924	297	31,965	162,570	31,285	94,913
Suffolk	807,252	134,089	96,651	8,606	70,404	28,432	463	38,572	243,931	133,144	444,449
Worcester	830,839	174,732	129,978	11,215	66,986	33,064	477	47,301	255,325	72,636	198,685
Totals	**6,890,822**	**1,364,460**	**1,137,420**	**87,574**	**565,921**	**278,339**	**3,955**	**398,909**	**2,143,717**	**667,733**	**1,970,765**

MASSACHUSETTS

American Lung Association in Massachusetts

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Barnstable	10	0	0	3.3	F
Berkshire	INC	INC	INC	INC	INC
Bristol	19	1	0	6.8	F
Dukes	7	2	0	3.3	F
Essex	10	0	0	3.3	F
Franklin	3	0	0	1.0	C
Hampden	11	1	0	4.2	F
Hampshire	8	1	0	3.2	D
Middlesex	1	0	0	0.3	B
Norfolk	8	0	0	2.7	D
Plymouth	8	0	0	2.7	D
Suffolk	4	0	0	1.3	C
Worcester	11	0	0	3.7	F

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Barnstable	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berkshire	1	0	0	0	0.3	B	5.9	PASS
Bristol	0	0	0	0	0.0	A	6.1	PASS
Dukes	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Essex	0	0	0	0	0.0	A	5.1	PASS
Franklin	0	0	0	0	0.0	A	5.2	PASS
Hampden	0	0	0	0	0.0	A	5.2	PASS
Hampshire	0	0	0	0	0.0	A	5.1	PASS
Middlesex	INC	INC	INC	INC	INC	INC	INC	INC
Norfolk	INC	INC	INC	INC	INC	INC	INC	INC
Plymouth	0	0	0	0	0.0	A	5.4	PASS
Suffolk	0	0	0	0	0.0	A	7.7	PASS
Worcester	0	0	0	0	0.0	A	5.8	PASS

MICHIGAN

American Lung Association in Michigan

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Allegan	117,327	28,372	19,414	2,436	9,909	7,890	72	8,878	40,692	12,429	13,834
Bay	103,923	21,084	21,195	1,810	9,126	7,591	63	8,849	38,136	16,044	10,502
Benzie	17,753	3,239	4,639	278	1,568	1,445	11	1,761	6,806	1,812	1,152
Berrien	154,141	33,571	30,402	2,882	13,298	10,971	94	12,758	55,419	23,151	38,978
Cass	51,653	10,646	10,862	914	4,504	3,870	32	4,523	19,009	5,727	7,086
Chippewa	37,517	6,877	6,742	590	3,414	2,594	23	2,955	13,863	5,608	11,418
Clinton	79,332	17,756	13,442	1,524	6,860	5,432	48	6,120	28,132	5,896	8,213
Genesee	406,892	91,550	71,136	7,859	35,057	27,953	247	31,730	144,190	75,251	111,832
Huron	31,166	6,005	7,813	515	2,725	2,493	19	3,015	11,787	3,876	1,506
Ingham	292,735	58,406	39,459	5,014	26,538	17,510	178	19,121	103,394	49,916	90,032
Kalamazoo	264,870	57,311	39,630	4,920	23,343	16,323	161	18,205	92,494	36,927	60,273
Kent	653,786	157,809	89,296	13,547	55,930	39,833	398	43,600	222,134	72,623	173,392
Lenawee	98,266	20,713	18,645	1,778	8,584	6,959	60	8,013	35,544	9,668	13,236
Macomb	874,759	184,009	148,636	15,796	77,026	60,680	532	68,173	315,302	95,731	187,352
Manistee	24,528	4,264	6,318	366	2,194	1,992	15	2,417	9,473	3,026	2,724
Mason	29,100	5,889	6,854	506	2,526	2,235	18	2,683	10,801	3,455	2,548
Missaukee	15,113	3,474	3,099	298	1,278	1,090	9	1,279	5,385	1,920	993
Monroe	150,439	32,193	27,262	2,764	13,122	10,737	92	12,192	54,370	14,891	13,313
Muskegon	173,588	40,082	29,524	3,441	14,864	11,642	106	13,194	60,821	26,321	41,131
Oakland	1,259,201	264,031	211,527	22,665	111,061	87,047	767	97,578	453,846	102,052	356,274
Ottawa	290,494	69,797	43,492	5,992	24,766	17,950	177	20,041	99,051	19,087	47,689
St. Clair	159,337	33,131	30,022	2,844	13,971	11,684	97	13,320	58,288	21,745	14,276
Schoolcraft	8,068	1,370	2,162	118	722	689	5	835	3,168	1,044	1,169
Tuscola	52,516	10,732	10,635	921	4,603	3,907	32	4,526	19,332	6,580	3,541
Washtenaw	370,963	68,932	51,377	5,917	34,184	22,804	226	24,914	133,546	52,258	111,106
Wayne	1,753,893	414,221	270,554	35,558	150,021	113,859	1,066	126,753	607,144	376,649	886,177
Wexford	33,466	7,761	6,388	666	2,838	2,356	20	2,724	11,838	4,318	1,848
Totals	**7,504,826**	**1,653,225**	**1,220,525**	**141,916**	**654,031**	**499,536**	**4,569**	**560,156**	**2,653,965**	**1,048,005**	**2,211,595**

MICHIGAN

American Lung Association in Michigan

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allegan	21	0	0	7.0	F	0	0	0	0	0.0	A	7.4	PASS
Bay	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	6.9	PASS
Benzie	9	1	0	3.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berrien	22	0	0	7.3	F	INC	INC	INC	INC	INC	INC	INC	INC
Cass	22	0	0	7.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chippewa	1	0	0	0.3	B	0	0	0	0	0.0	A	INC	INC
Clinton	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Genesee	12	0	0	4.0	F	0	0	0	0	0.0	A	7.2	PASS
Huron	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ingham	8	0	0	2.7	D	0	0	0	0	0.0	A	INC	INC
Kalamazoo	13	0	0	4.3	F	0	0	0	0	0.0	A	8.2	PASS
Kent	12	0	0	4.0	F	0	0	0	0	0.0	A	8.2	PASS
Lenawee	7	0	0	2.3	D	0	0	0	0	0.0	A	7.6	PASS
Macomb	20	0	0	6.7	F	0	0	0	0	0.0	A	7.6	PASS
Manistee	4	0	0	1.3	C	0	0	0	0	0.0	A	5.8	PASS
Mason	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Missaukee	7	0	0	2.3	D	0	0	0	0	0.0	A	5.0	PASS
Monroe	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Muskegon	13	5	0	6.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Oakland	16	1	0	5.8	F	0	0	0	0	0.0	A	8.1	PASS
Ottawa	11	0	0	3.7	F	INC	INC	INC	INC	INC	INC	INC	INC
St. Clair	12	1	0	4.5	F	0	0	0	0	0.0	A	8.0	PASS
Schoolcraft	11	0	0	3.7	F	INC	INC	INC	INC	INC	INC	INC	INC
Tuscola	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washtenaw	15	0	0	5.0	F	0	0	0	0	0.0	A	8.1	PASS
Wayne	22	0	0	7.3	F	3	0	0	0	1.0	C	11.3	PASS
Wexford	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MINNESOTA

American Lung Association in Minnesota

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Anoka	353,813	84,396	49,712	4,456	22,389	11,644	197	18,783	110,424	19,568	68,706
Becker	34,371	8,391	7,052	443	2,128	1,275	19	2,197	10,905	3,764	4,775
Beltrami	46,847	11,769	7,548	621	2,886	1,515	26	2,493	14,349	8,220	13,126
Carlton	35,837	8,042	6,136	425	2,297	1,273	20	2,118	11,515	3,454	4,282
Cass	29,519	6,243	7,659	330	1,891	1,250	16	2,232	9,959	3,771	5,070
Cook	5,393	851	1,540	45	368	247	3	444	1,949	511	810
Crow Wing	64,889	14,053	14,549	742	4,154	2,548	36	4,434	21,430	8,105	3,342
Dakota	425,423	103,669	60,282	5,474	26,712	13,895	237	22,453	131,830	26,434	94,730
Goodhue	46,403	10,293	9,124	543	2,969	1,737	26	2,959	15,103	3,250	3,819
Hennepin	1,259,428	276,541	176,788	14,602	81,448	40,605	702	64,806	399,090	127,826	394,877
Lake	10,658	2,005	2,775	106	704	459	6	817	3,694	900	535
Lyon	25,629	6,615	4,060	349	1,568	834	14	1,373	7,804	3,009	4,282
Mille Lacs	26,139	6,292	4,787	332	1,634	937	15	1,582	8,269	3,163	2,924
Olmsted	156,277	38,258	24,272	2,020	9,747	5,132	87	8,399	48,374	10,908	31,602
Ramsey	550,210	128,232	79,328	6,771	34,888	17,492	307	28,089	171,376	78,160	212,529
St. Louis	199,754	38,011	38,748	2,007	13,289	7,434	111	12,510	66,986	28,232	18,071
Scott	147,381	40,458	16,035	2,136	8,936	4,371	82	6,820	43,401	7,563	28,313
Stearns	159,256	36,701	24,079	1,938	10,121	5,166	89	8,365	49,923	18,879	23,102
Washington	259,201	63,678	38,906	3,362	16,216	8,679	145	14,188	80,540	10,755	46,084
Wright	136,349	38,003	17,215	2,007	8,182	4,167	76	6,658	40,160	6,639	10,776
Totals	**3,972,777**	**922,501**	**590,595**	**48,709**	**252,527**	**130,659**	**2,216**	**211,719**	**1,247,079**	**373,111**	**971,755**

MINNESOTA

American Lung Association in Minnesota

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anoka	1	0	0	0.3	B	1	0	0	0	0.3	B	7.3	PASS
Becker	0	0	0	0.0	A	0	0	0	0	0.0	A	4.8	PASS
Beltrami	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	5.6	PASS
Carlton	0	0	0	0.0	A	1	0	0	0	0.3	B	4.8	PASS
Cass	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Cook	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	4.4	PASS
Crow Wing	0	0	0	0.0	A	1	0	0	0	0.3	B	5.6	PASS
Dakota	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	7.1	PASS
Goodhue	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hennepin	0	0	0	0.0	A	1	0	0	0	0.3	B	7.6	PASS
Lake	0	0	0	0.0	A	0	0	0	0	0.0	A	3.4	PASS
Lyon	0	0	0	0.0	A	1	0	0	0	0.3	B	5.2	PASS
Mille Lacs	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Olmsted	0	0	0	0.0	A	1	0	0	0	0.3	B	7.1	PASS
Ramsey	DNC	DNC	DNC	DNC	DNC	2	1	0	0	1.2	C	7.9	PASS
St. Louis	0	0	0	0.0	A	2	0	0	0	0.7	B	5.2	PASS
Scott	2	0	0	0.7	B	0	0	0	0	0.0	A	INC	INC
Stearns	1	0	0	0.3	B	0	0	0	0	0.0	A	6.0	PASS
Washington	0	0	0	0.0	A	0	0	0	0	0.0	A	6.1	PASS
Wright	4	0	0	1.3	C	1	0	0	0	0.3	B	6.6	PASS

MISSISSIPPI

American Lung Association in Mississippi

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Bolivar	31,333	7,611	4,951	495	2,288	2,286	24	2,720	10,156	8,715	21,119
DeSoto	182,001	46,709	23,468	3,040	13,002	12,828	140	14,980	57,883	16,255	67,090
Forrest	75,036	17,357	10,188	1,130	5,500	5,183	57	6,008	24,334	17,341	32,299
Grenada	21,055	5,040	3,744	328	1,560	1,636	16	1,982	6,948	4,621	9,590
Hancock	47,334	9,716	9,383	632	3,689	3,994	36	4,891	16,472	8,181	7,287
Harrison	206,650	49,416	30,904	3,216	15,154	15,124	159	17,888	67,367	40,288	75,374
Hinds	237,085	57,047	33,341	3,712	17,278	16,873	180	19,775	76,704	44,204	179,704
Jackson	143,277	33,416	22,721	2,175	10,644	10,914	110	13,025	47,427	25,348	46,723
Lauderdale	75,317	17,636	13,072	1,148	5,598	5,771	58	6,953	24,900	18,243	36,106
Lee	85,202	21,542	12,598	1,402	6,148	6,206	65	7,359	27,368	10,977	29,848
Yalobusha	12,392	2,776	2,474	181	943	1,017	9	1,249	4,203	2,208	5,206
Totals	**1,116,682**	**268,266**	**166,844**	**17,457**	**81,804**	**81,834**	**856**	**96,829**	**363,762**	**196,381**	**510,346**

MISSISSIPPI

American Lung Association in Mississippi

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Bolivar	2	0	0	0.7	B
DeSoto	3	1	0	1.5	C
Forrest	DNC	DNC	DNC	DNC	DNC
Grenada	DNC	DNC	DNC	DNC	DNC
Hancock	0	0	0	0.0	A
Harrison	4	0	0	1.3	C
Hinds	0	0	0	0.0	A
Jackson	3	0	0	1.0	C
Lauderdale	0	0	0	0.0	A
Lee	0	0	0	0.0	A
Yalobusha	0	0	0	0.0	A

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bolivar	INC	INC	INC	INC	INC	INC	INC	INC
DeSoto	0	0	0	0	0.0	A	7.6	PASS
Forrest	1	0	0	0	0.3	B	8.6	PASS
Grenada	0	0	0	0	0.0	A	7.4	PASS
Hancock	1	0	0	0	0.3	B	7.9	PASS
Harrison	0	0	0	0	0.0	A	7.9	PASS
Hinds	1	0	0	0	0.3	B	8.7	PASS
Jackson	0	0	0	0	0.0	A	7.9	PASS
Lauderdale	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lee	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Yalobusha	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

MISSOURI

American Lung Association in Missouri

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Andrew	17,607	4,034	3,253	339	1,274	1,282	12	1,471	6,048	1,429	1,031
Boone	180,005	36,565	22,058	3,076	13,353	11,528	124	11,540	61,440	28,584	39,027
Buchanan	88,571	19,933	14,275	1,677	6,429	6,143	61	6,759	30,171	13,117	15,402
Callaway	44,889	9,401	7,304	791	3,332	3,190	31	3,512	15,620	4,795	4,453
Cass	104,954	25,369	17,692	2,134	7,482	7,361	72	8,292	35,283	8,427	13,054
Cedar	14,165	3,411	3,308	287	996	1,079	10	1,312	4,861	2,502	782
Clay	246,365	59,326	34,771	4,991	17,598	16,394	170	17,611	81,840	17,153	47,615
Clinton	20,470	4,808	3,703	404	1,474	1,482	14	1,699	6,984	1,793	1,316
Greene	291,923	60,957	48,085	5,128	21,465	20,199	201	21,989	100,880	43,423	37,197
Jackson	700,307	164,979	104,655	13,879	50,227	47,231	483	51,219	234,543	89,787	264,030
Jasper	120,636	30,127	18,863	2,535	8,455	8,043	83	8,824	39,706	19,498	19,533
Jefferson	224,347	51,958	33,636	4,371	16,322	15,621	155	17,152	76,093	19,327	12,885
Lincoln	57,686	14,658	7,740	1,233	4,077	3,817	40	4,108	18,895	6,055	4,056
Monroe	8,664	1,895	2,023	159	630	680	6	824	3,063	1,158	630
Perry	19,150	4,470	3,472	376	1,377	1,378	13	1,574	6,531	2,040	945
St. Charles	399,182	92,666	60,779	7,796	28,873	27,490	276	30,098	134,884	22,272	52,255
Ste. Genevieve	17,888	3,880	3,485	326	1,318	1,349	12	1,569	6,275	1,720	806
St. Louis	996,945	219,527	180,210	18,469	72,771	72,009	686	81,620	344,635	102,720	342,878
Taney	55,852	11,774	12,108	991	4,084	4,223	38	4,970	19,689	8,367	6,419
St. Louis City	302,838	57,526	41,490	4,840	22,996	20,693	209	21,543	106,327	66,858	168,759
Totals	**3,912,444**	**877,264**	**622,910**	**73,803**	**284,532**	**271,189**	**2,698**	**297,687**	**1,333,768**	**461,025**	**1,033,073**

MISSOURI

American Lung Association in Missouri

	HIGH OZONE DAYS 2016–2018				
County	Orange	Red	Purple	Wgt. Avg.	Grade
Andrew	2	0	0	0.7	B
Boone	1	0	0	0.3	B
Buchanan	DNC	DNC	DNC	DNC	DNC
Callaway	1	0	0	0.3	B
Cass	2	0	0	0.7	B
Cedar	0	0	0	0.0	A
Clay	17	0	0	5.7	F
Clinton	5	0	0	1.7	C
Greene	0	0	0	0.0	A
Jackson	DNC	DNC	DNC	DNC	DNC
Jasper	0	0	0	0.0	A
Jefferson	7	0	0	2.3	D
Lincoln	5	0	0	1.7	C
Monroe	1	0	0	0.3	B
Perry	2	0	0	0.7	B
St. Charles	22	2	0	8.3	F
Ste. Genevieve	4	0	0	1.3	C
St. Louis	14	0	0	4.7	F
Taney	INC	INC	INC	INC	INC
St. Louis City	12	1	0	4.5	F

	HIGH PARTICLE POLLUTION DAYS 2016–2018							
	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Andrew	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Boone	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Buchanan	1	0	0	0	0.3	B	8.5	PASS
Callaway	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cass	0	0	0	0	0.0	A	6.5	PASS
Cedar	0	0	0	0	0.0	A	6.9	PASS
Clay	1	0	0	0	0.3	B	6.4	PASS
Clinton	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	0	0	0	0	0.0	A	7.4	PASS
Jackson	1	0	0	0	0.3	B	8.8	PASS
Jasper	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	2	0	0	0	0.7	B	7.9	PASS
Lincoln	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Monroe	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Perry	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Charles	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ste. Genevieve	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Louis	0	0	0	0	0.0	A	9.1	PASS
Taney	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
St. Louis City	0	1	0	0	0.5	B	8.5	PASS

MONTANA

American Lung Association in Montana

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Fergus	11,113	2,317	2,724	123	858	590	6	918	3,977	1,313	672
Flathead	102,106	22,475	19,949	1,198	7,936	4,941	54	7,515	35,571	11,288	7,426
Gallatin	111,876	22,425	14,146	1,195	9,178	4,293	59	6,524	38,489	9,721	9,792
Lewis and Clark	68,700	14,770	12,903	787	5,395	3,278	36	4,971	24,014	7,061	6,059
Lincoln	19,794	3,609	5,670	192	1,557	1,182	10	1,840	7,431	3,964	1,491
Missoula	118,791	22,315	18,506	1,189	9,790	5,034	62	7,707	41,975	14,719	12,853
Phillips	4,074	968	910	52	305	208	2	320	1,405	608	683
Powder River	1,716	287	466	15	139	100	1	156	651	205	113
Ravalli	43,172	8,246	11,138	439	3,398	2,415	23	3,745	15,880	6,628	3,154
Richland	10,913	2,757	1,632	147	827	467	6	696	3,600	950	1,161
Rosebud	9,063	2,624	1,431	140	648	384	5	577	2,860	1,523	4,084
Silver Bow	34,993	7,087	6,667	378	2,790	1,655	18	2,533	12,374	5,697	3,609
Yellowstone	160,137	37,629	27,117	2,005	12,325	7,093	84	10,765	54,134	17,150	22,191
Totals	**696,448**	**147,509**	**123,259**	**7,860**	**55,147**	**31,640**	**365**	**48,266**	**242,361**	**80,827**	**73,288**

MONTANA

American Lung Association in Montana

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Fergus	1	0	0	0.3	B
Flathead	0	0	0	0.0	A
Gallatin	DNC	DNC	DNC	DNC	DNC
Lewis and Clark	0	0	0	0.0	A
Lincoln	DNC	DNC	DNC	DNC	DNC
Missoula	0	0	0	0.0	A
Phillips	0	0	0	0.0	A
Powder River	3	0	0	1.0	C
Ravalli	DNC	DNC	DNC	DNC	DNC
Richland	0	0	0	0.0	A
Rosebud	0	0	0	0.0	A
Silver Bow	DNC	DNC	DNC	DNC	DNC
Yellowstone	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Fergus	10	3	0	0	4.8	F	5.0	PASS
Flathead	16	7	3	0	10.8	F	8.8	PASS
Gallatin	10	3	0	1	5.7	F	4.0	PASS
Lewis and Clark	31	15	0	0	17.8	F	9.5	PASS
Lincoln	14	18	1	0	14.3	F	12.9	FAIL
Missoula	17	12	1	0	12.3	F	10.4	PASS
Phillips	6	1	0	0	2.5	D	5.4	PASS
Powder River	6	5	0	0	4.5	F	7.6	PASS
Ravalli	34	17	0	0	19.8	F	10.0	PASS
Richland	2	1	0	0	1.2	C	INC	INC
Rosebud	6	5	0	0	4.5	F	6.2	PASS
Silver Bow	21	4	0	0	9.0	F	8.7	PASS
Yellowstone	8	1	0	0	3.2	D	INC	INC

NEBRASKA

American Lung Association in Nebraska

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Douglas	566,880	145,250	73,752	7,306	37,671	25,001	293	30,123	165,432	64,276	175,045
Hall	61,607	16,920	9,150	851	3,992	2,824	32	3,506	17,768	7,839	21,157
Knox	8,419	2,039	2,078	103	567	488	4	661	2,642	1,098	1,233
Lancaster	317,272	72,512	44,139	3,647	21,789	14,260	164	17,246	95,483	37,583	60,782
Sarpy	184,459	50,551	21,677	2,543	11,989	7,845	96	9,330	52,480	10,399	35,878
Scotts Bluff	35,989	9,001	6,849	453	2,402	1,836	19	2,372	10,884	5,021	10,234
Washington	20,667	5,017	3,673	252	1,402	1,075	11	1,370	6,350	1,423	1,170
Totals	**1,195,293**	**301,290**	**161,318**	**15,155**	**79,813**	**53,330**	**619**	**64,608**	**351,038**	**127,639**	**305,499**

NEBRASKA

American Lung Association in Nebraska

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Douglas	4	0	0	1.3	C
Hall	DNC	DNC	DNC	DNC	DNC
Knox	1	0	0	0.3	B
Lancaster	0	0	0	0.0	A
Sarpy	DNC	DNC	DNC	DNC	DNC
Scotts Bluff	DNC	DNC	DNC	DNC	DNC
Washington	DNC	DNC	DNC	DNC	DNC

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Douglas	2	0	0	0	0.7	B	8.6	PASS
Hall	0	0	0	0	0.0	A	5.9	PASS
Knox	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lancaster	0	0	0	0	0.0	A	6.7	PASS
Sarpy	2	0	0	0	0.7	B	8.9	PASS
Scotts Bluff	1	0	0	0	0.3	B	INC	INC
Washington	0	0	0	0	0.0	A	6.9	PASS

NEVADA

American Lung Association in Nevada

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Churchill	24,440	5,574	4,628	388	1,490	1,457	12	1,878	7,988	2,756	6,666
Clark	2,231,647	517,629	328,692	36,032	136,812	120,615	1,129	151,858	705,307	307,977	1,289,911
Douglas	48,467	7,917	13,808	551	3,151	3,651	25	4,868	18,082	3,457	9,541
Elko	52,460	14,298	5,943	995	3,078	2,550	27	3,168	15,484	4,276	17,530
Lyon	55,808	11,946	11,813	832	3,451	3,529	28	4,594	18,821	5,803	14,325
Washoe	465,735	100,776	76,161	7,015	29,030	26,449	236	33,558	151,502	47,627	174,026
White Pine	9,475	1,884	1,702	131	602	563	5	719	3,173	1,082	2,702
Carson City	55,414	11,243	11,261	783	3,486	3,479	28	4,507	18,826	5,952	18,435
Totals	**2,943,446**	**671,267**	**454,008**	**46,726**	**181,100**	**162,293**	**1,489**	**205,149**	**939,183**	**378,930**	**1,533,136**

NEVADA

American Lung Association in Nevada

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Churchill	9	0	0	3.0	D
Clark	89	1	0	30.2	F
Douglas	DNC	DNC	DNC	DNC	DNC
Elko	INC	INC	INC	INC	INC
Lyon	12	0	0	4.0	F
Washoe	29	0	0	9.7	F
White Pine	4	0	0	1.3	C
Carson City	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Churchill	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	10	2	0	0	4.3	F	9.5	PASS
Douglas	10	4	1	0	6.0	F	6.9	PASS
Elko	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lyon	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washoe	8	0	0	0	2.7	D	7.6	PASS
White Pine	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carson City	6	4	0	0	4.0	F	5.8	PASS

NEW HAMPSHIRE

American Lung Association in New Hampshire

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Belknap	61,022	11,281	13,505	960	5,763	4,268	38	4,313	22,888	4,149	3,043
Cheshire	76,493	13,685	15,224	1,165	7,438	5,103	48	5,029	28,446	7,307	4,654
Coos	31,589	5,139	7,494	438	3,051	2,289	20	2,335	12,210	3,828	1,606
Grafton	89,786	14,522	18,566	1,236	8,920	6,087	57	6,022	34,067	7,427	8,431
Hillsborough	415,247	84,629	65,348	7,205	39,845	25,919	261	24,459	147,824	30,147	66,220
Merrimack	151,132	28,949	27,566	2,465	14,536	9,863	95	9,570	55,157	10,149	11,759
Rockingham	309,176	59,995	55,538	5,108	29,511	20,446	195	19,796	112,882	16,270	23,733
Totals	**1,134,445**	**218,200**	**203,241**	**18,577**	**109,064**	**73,977**	**714**	**71,525**	**413,475**	**79,277**	**119,446**

NEW HAMPSHIRE

American Lung Association in New Hampshire

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Belknap	0	0	0	0.0	A
Cheshire	1	0	0	0.3	B
Coos	4	0	0	1.3	C
Grafton	0	0	0	0.0	A
Hillsborough	4	0	0	1.3	C
Merrimack	0	0	0	0.0	A
Rockingham	7	0	0	2.3	D

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Belknap	0	0	0	0	0.0	A	4.5	PASS
Cheshire	0	0	0	0	0.0	A	5.4	PASS
Coos	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Grafton	0	0	0	0	0.0	A	5.7	PASS
Hillsborough	0	0	0	0	0.0	A	3.4	PASS
Merrimack	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockingham	0	0	0	0	0.0	A	5.2	PASS

NEW JERSEY

American Lung Association in New Jersey

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Atlantic	265,429	56,347	47,611	4,083	17,682	11,925	144	18,022	77,960	33,167	116,925
Bergen	936,692	198,355	161,086	14,374	62,463	41,592	509	62,335	273,792	63,403	415,338
Camden	507,078	115,090	79,408	8,340	33,052	21,467	275	31,529	143,123	64,417	221,760
Cumberland	150,972	36,107	23,053	2,617	9,656	6,237	82	9,099	41,681	21,430	81,710
Essex	799,767	188,977	108,532	13,695	51,513	32,283	434	46,181	219,471	116,246	555,679
Gloucester	291,408	63,440	46,126	4,597	19,315	12,597	158	18,633	83,879	21,869	63,727
Hudson	676,061	138,221	79,920	10,016	44,808	26,516	368	35,767	185,636	95,704	481,548
Hunterdon	124,714	24,097	23,105	1,746	8,615	5,887	68	9,062	38,312	5,317	18,604
Mercer	369,811	78,695	56,000	5,703	24,536	15,698	201	22,796	105,508	38,279	189,371
Middlesex	829,685	180,190	124,198	13,058	54,722	34,942	451	50,650	235,083	65,823	479,059
Monmouth	621,354	131,723	109,201	9,546	41,656	28,059	337	42,574	183,773	41,380	155,338
Morris	494,228	104,322	84,336	7,560	33,123	22,079	269	33,227	145,375	22,980	144,503
Ocean	601,651	144,247	135,652	10,453	38,246	27,988	327	44,170	174,990	57,366	93,692
Passaic	503,310	119,860	73,213	8,686	32,288	20,596	273	29,818	138,627	67,374	297,927
Union	558,067	130,522	80,252	9,459	36,144	23,038	303	33,451	155,253	43,279	336,018
Warren	105,779	20,815	19,230	1,508	7,229	4,892	57	7,446	31,963	7,006	20,003
Totals	**7,836,006**	**1,731,008**	**1,250,923**	**125,441**	**515,047**	**335,797**	**4,257**	**494,760**	**2,234,427**	**765,040**	**3,671,202**

NEW JERSEY

American Lung Association in New Jersey

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Atlantic	2	0	0	0.7	B	0	0	0	0	0.0	A	6.8	PASS
Bergen	25	3	0	9.8	F	1	0	0	0	0.3	B	7.6	PASS
Camden	24	0	0	8.0	F	4	0	0	0	1.3	C	10.2	PASS
Cumberland	1	0	0	0.3	B	0	0	0	0	0.0	A	INC	INC
Essex	7	1	0	2.8	D	0	0	0	0	0.0	A	8.4	PASS
Gloucester	20	0	0	6.7	F	0	0	0	0	0.0	A	INC	INC
Hudson	12	2	0	5.0	F	0	0	0	0	0.0	A	8.2	PASS
Hunterdon	13	3	0	5.8	F	0	0	0	0	0.0	A	INC	INC
Mercer	22	2	0	8.3	F	0	0	0	0	0.0	A	8.2	PASS
Middlesex	23	1	0	8.2	F	0	0	0	0	0.0	A	8.2	PASS
Monmouth	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Morris	10	1	0	3.8	F	0	0	0	0	0.0	A	5.9	PASS
Ocean	17	1	0	6.2	F	0	0	0	0	0.0	A	6.6	PASS
Passaic	9	0	0	3.0	D	0	0	0	0	0.0	A	7.6	PASS
Union	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	9.2	PASS
Warren	5	0	0	1.7	C	0	0	0	0	0.0	A	8.1	PASS

NEW MEXICO

American Lung Association in New Mexico

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Bernalillo	678,701	147,370	111,216	11,089	52,392	32,622	251	42,467	214,828	109,959	417,521
Doña Ana	217,522	53,231	34,338	4,005	15,959	9,644	80	12,677	65,922	52,914	158,940
Eddy	57,900	15,344	8,406	1,155	4,180	2,559	21	3,314	17,140	8,981	31,228
Lea	69,611	20,752	7,948	1,561	4,720	2,708	26	3,463	19,403	10,813	45,250
Rio Arriba	39,006	9,121	7,558	686	3,024	2,040	14	2,681	12,328	8,498	34,040
Sandoval	145,179	33,748	25,756	2,539	11,168	7,291	54	9,519	45,587	18,215	82,591
San Juan	125,043	33,054	18,685	2,487	9,072	5,622	46	7,290	37,159	28,486	77,550
Santa Fe	150,056	26,988	36,485	2,031	12,611	8,953	55	11,943	51,444	17,972	85,555
Taos	32,835	5,778	8,688	435	2,797	2,045	12	2,747	11,404	6,955	21,199
Valencia	76,456	17,911	13,502	1,348	5,862	3,819	28	4,987	23,937	12,908	51,733
Totals	**1,592,309**	**363,297**	**272,582**	**27,336**	**121,785**	**77,304**	**589**	**101,088**	**499,152**	**275,701**	**1,005,607**

NEW MEXICO

American Lung Association in New Mexico

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Bernalillo	19	0	0	6.3	F
Doña Ana	52	2	0	18.3	F
Eddy	27	3	0	10.5	F
Lea	9	0	0	3.0	D
Rio Arriba	6	0	0	2.0	C
Sandoval	13	0	0	4.3	F
San Juan	23	0	0	7.7	F
Santa Fe	3	0	0	1.0	C
Taos	DNC	DNC	DNC	DNC	DNC
Valencia	6	0	0	2.0	C

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bernalillo	0	0	0	0	0.0	A	7.8	PASS
Doña Ana	4	1	0	0	1.8	C	8.3	PASS
Eddy	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lea	1	0	0	0	0.3	B	7.6	PASS
Rio Arriba	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sandoval	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
San Juan	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Santa Fe	INC	INC	INC	INC	INC	INC	INC	INC
Taos	INC	INC	INC	INC	INC	INC	INC	INC
Valencia	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NEW YORK

American Lung Association in New York

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Albany	307,117	56,359	52,073	3,472	25,603	14,152	177	19,470	90,763	32,888	86,584
Bronx	1,432,132	354,692	183,375	21,849	110,324	57,608	825	76,621	382,917	380,470	1,301,368
Chautauqua	127,939	25,997	25,704	1,601	10,377	6,321	74	8,983	38,327	22,426	16,477
Dutchess	293,718	55,149	51,633	3,397	24,355	14,248	170	19,713	88,606	25,387	84,652
Erie	919,719	186,092	165,052	11,463	74,829	43,545	531	60,689	271,226	122,204	227,998
Essex	37,300	6,062	8,743	373	3,174	2,035	22	2,943	11,985	4,150	2,877
Franklin	50,293	9,750	8,452	601	4,141	2,352	29	3,235	14,867	7,404	9,188
Hamilton	4,434	573	1,386	35	390	283	3	426	1,556	404	230
Herkimer	61,833	12,755	12,815	786	4,993	3,104	36	4,436	18,608	8,176	3,433
Jefferson	111,755	26,798	15,276	1,651	8,690	4,474	65	6,006	29,927	12,996	20,979
Kings	2,582,830	588,975	359,246	36,281	203,969	106,513	1,489	143,029	706,976	483,632	1,642,012
Monroe	742,474	154,214	128,049	9,500	60,032	34,403	429	47,684	216,203	103,620	220,692
New York	1,628,701	233,360	268,902	14,375	142,578	74,658	939	101,452	493,938	245,347	863,489
Niagara	210,433	42,064	40,109	2,591	17,160	10,375	122	14,590	63,263	26,833	30,878
Onondaga	461,809	98,024	78,635	6,038	37,131	21,330	267	29,524	133,908	61,143	107,930
Orange	381,951	97,160	53,541	5,985	29,133	16,190	221	21,885	103,817	42,664	139,224
Oswego	117,898	24,769	19,265	1,526	9,514	5,487	68	7,534	34,420	18,209	7,229
Putnam	98,892	19,590	17,169	1,207	8,098	4,856	57	6,713	29,819	5,863	21,898
Queens	2,278,906	458,457	357,517	28,241	186,074	103,111	1,317	140,434	661,427	261,819	1,708,555
Richmond	476,179	104,038	77,053	6,409	38,014	21,741	275	29,865	136,971	55,217	189,066
Rockland	325,695	91,712	51,107	5,649	23,877	13,737	188	19,050	86,148	44,728	121,045
Saratoga	230,163	46,168	41,728	2,844	18,769	11,165	133	15,570	68,748	14,319	22,730
Steuben	95,796	20,504	18,850	1,263	7,667	4,705	55	6,675	28,430	12,069	6,125
Suffolk	1,481,093	313,019	249,756	19,282	119,280	69,976	857	96,596	434,698	105,578	485,941
Tompkins	102,793	15,006	14,900	924	8,983	4,413	59	5,865	30,343	15,146	23,650
Wayne	90,064	19,198	17,002	1,183	7,223	4,430	52	6,234	26,813	8,511	9,160
Westchester	967,612	211,912	165,008	13,054	77,133	45,070	559	62,459	280,384	78,572	453,925
Totals	**15,619,529**	**3,272,397**	**2,482,346**	**201,579**	**1,261,513**	**700,282**	**9,021**	**957,682**	**4,485,090**	**2,199,775**	**7,807,335**

NEW YORK

American Lung Association in New York

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albany	4	0	0	1.3	C	0	0	0	0	0.0	A	6.9	PASS
Bronx	15	0	0	5.0	F	0	0	0	0	0.0	A	8.1	PASS
Chautauqua	9	0	0	3.0	D	0	0	0	0	0.0	A	6.2	PASS
Dutchess	7	1	0	2.8	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Erie	9	0	0	3.0	D	0	0	0	0	0.0	A	7.2	PASS
Essex	4	0	0	1.3	C	0	0	0	0	0.0	A	3.6	PASS
Franklin	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hamilton	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Herkimer	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kings	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.8	PASS
Monroe	9	0	0	3.0	D	0	0	0	0	0.0	A	6.8	PASS
New York	15	1	0	5.5	F	1	0	0	0	0.3	B	9.5	PASS
Niagara	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Onondaga	4	0	0	1.3	C	0	0	0	0	0.0	A	5.1	PASS
Orange	2	0	0	0.7	B	0	0	0	0	0.0	A	6.2	PASS
Oswego	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Putnam	8	2	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Queens	19	1	0	6.8	F	0	0	0	0	0.0	A	7.0	PASS
Richmond	22	1	0	7.8	F	0	0	0	0	0.0	A	7.4	PASS
Rockland	10	0	1	4.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Saratoga	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Steuben	2	0	0	0.7	B	0	0	0	0	0.0	A	4.7	PASS
Suffolk	25	3	0	9.8	F	0	0	0	0	0.0	A	6.7	PASS
Tompkins	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wayne	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Westchester	22	1	0	7.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NORTH CAROLINA

American Lung Association in North Carolina

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Alexander	37,353	7,529	7,489	865	2,813	2,646	25	3,445	13,146	4,653	5,017
Avery	17,505	2,621	3,891	301	1,399	1,303	12	1,718	6,543	2,542	2,021
Buncombe	259,103	47,834	51,828	5,497	19,891	18,001	172	23,440	92,213	28,859	42,740
Caldwell	82,029	16,490	16,302	1,895	6,189	5,874	55	7,616	28,953	12,830	10,605
Carteret	69,524	12,208	17,363	1,403	5,376	5,455	46	7,385	25,772	6,717	9,386
Caswell	22,698	4,272	4,881	491	1,736	1,681	15	2,210	8,183	3,642	8,822
Catawba	158,652	35,043	28,337	4,027	11,688	10,675	106	13,629	54,071	20,321	39,209
Cumberland	332,330	82,119	39,617	9,437	23,719	17,892	223	21,369	104,633	53,788	190,679
Davidson	166,614	36,559	30,377	4,201	12,302	11,429	111	14,624	57,137	24,694	33,811
Durham	316,739	65,824	41,470	7,564	23,795	18,507	211	22,259	105,636	41,063	181,752
Edgecombe	52,005	11,711	10,253	1,346	3,796	3,561	34	4,655	17,746	11,705	33,137
Forsyth	379,099	86,957	60,617	9,993	27,649	23,954	252	30,046	126,134	60,361	164,800
Graham	8,484	1,694	2,019	195	636	632	6	854	3,035	1,575	1,192
Granville	60,115	12,272	10,293	1,410	4,537	4,127	40	5,188	20,906	7,331	25,247
Guilford	533,670	118,897	80,949	13,663	39,284	33,087	354	41,028	177,867	79,267	267,695
Haywood	61,971	11,308	15,248	1,299	4,747	4,738	41	6,424	22,679	8,071	4,631
Jackson	43,327	7,195	8,527	827	3,396	2,912	29	3,786	15,566	6,570	8,205
Johnston	202,675	51,654	26,989	5,936	14,366	12,225	135	14,831	64,910	23,374	66,425
Lee	61,452	14,733	10,118	1,693	4,420	3,920	41	4,954	20,287	9,459	25,942
Lenoir	55,976	12,606	11,088	1,449	4,087	3,860	37	5,046	19,134	12,193	28,441
Lincoln	83,770	17,649	14,802	2,028	6,269	5,835	56	7,384	29,063	8,555	12,538
Macon	35,285	6,590	10,056	757	2,670	2,800	24	3,938	13,017	5,700	3,882
Martin	22,671	4,587	5,246	527	1,699	1,694	15	2,272	8,093	4,571	10,867
Mecklenburg	1,093,901	257,713	122,549	29,615	79,580	61,334	729	71,907	351,251	126,098	586,264
Mitchell	15,000	2,740	3,741	315	1,149	1,157	10	1,572	5,501	2,383	1,232
Montgomery	27,271	6,007	5,597	690	2,002	1,903	18	2,505	9,398	4,379	10,067
New Hanover	232,274	42,800	41,211	4,918	17,874	15,270	154	19,425	81,539	34,250	52,600
Person	39,507	8,260	7,725	949	2,952	2,804	26	3,629	13,807	5,773	13,402
Pitt	179,914	38,347	23,789	4,407	13,404	10,273	119	12,422	59,411	40,201	82,137
Rockingham	90,690	18,387	18,552	2,113	6,823	6,562	60	8,560	32,052	16,003	25,083
Rowan	141,262	31,407	24,830	3,609	10,386	9,385	95	11,958	47,925	22,298	40,038
Swain	14,245	3,148	2,729	362	1,046	957	9	1,245	4,857	2,124	5,509
Union	235,908	63,295	29,928	7,274	16,454	14,175	158	17,063	74,408	16,361	66,941
Wake	1,092,305	261,531	126,886	30,054	79,104	62,737	729	74,034	351,225	89,819	438,820
Yancey	17,903	3,269	4,607	376	1,369	1,387	12	1,900	6,577	3,153	1,405
Totals	**6,243,227**	**1,405,256**	**919,904**	**161,486**	**458,606**	**384,753**	**4,162**	**474,322**	**2,072,676**	**800,683**	**2,500,542**

NORTH CAROLINA

American Lung Association in North Carolina

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Alexander	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Avery	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Buncombe	1	0	0	0.3	B	3	4	0	0	3.0	D	7.1	PASS
Caldwell	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carteret	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caswell	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC	INC
Catawba	DNC	DNC	DNC	DNC	DNC	1	2	0	0	1.3	C	8.6	PASS
Cumberland	0	0	0	0.0	A	0	0	0	0	0.0	A	8.1	PASS
Davidson	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.7	PASS
Durham	0	0	0	0.0	A	1	0	0	0	0.3	B	8.6	PASS
Edgecombe	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Forsyth	5	0	0	1.7	C	0	0	0	0	0.0	A	7.5	PASS
Graham	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Granville	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Guilford	5	0	0	1.7	C	1	0	0	0	0.3	B	7.8	PASS
Haywood	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jackson	4	0	0	1.3	C	3	2	0	0	2.0	C	7.8	PASS
Johnston	0	0	0	0.0	A	1	0	0	0	0.3	B	7.8	PASS
Lee	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lenoir	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lincoln	1	1	0	0.8	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Macon	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Martin	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mecklenburg	14	0	0	4.7	F	0	0	0	0	0.0	A	8.8	PASS
Mitchell	DNC	DNC	DNC	DNC	DNC	1	3	0	0	1.8	C	7.0	PASS
Montgomery	0	0	0	0.0	A	0	0	0	0	0.0	A	6.3	PASS
New Hanover	0	0	0	0.0	A	0	0	0	0	0.0	A	4.9	PASS
Person	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Pitt	0	0	0	0.0	A	0	0	0	0	0.0	A	6.6	PASS
Rockingham	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rowan	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Swain	0	0	0	0.0	A	8	4	0	0	4.7	F	8.3	PASS
Union	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wake	1	0	0	0.3	B	2	0	0	0	0.7	B	7.7	PASS
Yancey	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

NORTH DAKOTA

American Lung Association in North Dakota

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Billings	919	187	206	12	60	43	1	77	319	82	70
Burke	2,100	526	436	34	129	92	1	164	687	195	139
Burleigh	95,273	22,130	15,315	1,440	5,997	3,806	52	6,317	31,431	6,798	10,826
Cass	181,516	40,855	21,794	2,658	11,534	6,440	99	9,837	59,543	18,270	28,532
Dunn	4,332	1,032	690	67	271	178	2	296	1,425	443	811
McKenzie	13,632	4,292	1,248	279	767	428	7	637	3,957	1,240	3,078
Mercer	8,267	1,904	1,592	124	522	368	5	641	2,773	585	629
Oliver	1,952	491	433	32	120	89	1	162	641	198	133
Ward	67,744	15,964	8,640	1,039	4,245	2,424	37	3,774	21,971	7,057	11,854
Williams	35,350	10,135	3,388	659	2,069	1,144	19	1,699	10,668	2,265	7,202
Totals	**411,085**	**97,516**	**53,742**	**6,345**	**25,713**	**15,011**	**224**	**23,604**	**133,414**	**37,133**	**63,274**

NORTH DAKOTA

American Lung Association in North Dakota

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Billings	0	0	0	0.0	A	1	1	0	0	0.8	B	3.8	PASS
Burke	0	0	0	0.0	A	2	0	0	0	0.7	B	2.9	PASS
Burleigh	0	0	0	0.0	A	5	3	0	0	3.2	D	INC	INC
Cass	0	0	0	0.0	A	1	0	0	0	0.3	B	6.6	PASS
Dunn	0	0	0	0.0	A	1	1	0	0	0.8	B	INC	INC
McKenzie	0	0	0	0.0	A	1	1	0	0	0.8	B	4.2	PASS
Mercer	0	0	0	0.0	A	4	1	0	0	1.8	C	3.8	PASS
Oliver	0	0	0	0.0	A	3	1	0	0	1.5	C	5.3	PASS
Ward	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Williams	0	0	0	0.0	A	2	0	0	0	0.7	B	4.5	PASS

OHIO

American Lung Association in Ohio

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Allen	102,663	23,667	18,117	1,840	7,439	6,780	68	8,248	36,270	13,901	19,806
Ashtabula	97,493	21,521	18,589	1,673	7,134	6,834	65	8,424	35,277	16,353	10,409
Athens	65,818	9,568	8,671	744	5,347	3,995	43	4,498	24,854	17,237	7,036
Belmont	67,505	12,769	14,072	993	5,140	4,952	45	6,149	25,412	8,272	4,973
Butler	382,378	89,730	56,176	6,975	27,618	23,859	252	28,189	133,201	45,821	74,557
Clark	134,585	30,121	26,122	2,341	9,819	9,299	89	11,488	48,322	19,467	21,492
Clermont	205,466	47,330	33,533	3,679	14,881	13,589	136	16,359	72,814	16,745	13,589
Clinton	42,057	9,690	7,176	753	3,046	2,794	28	3,385	14,902	4,802	2,753
Cuyahoga	1,243,857	257,882	225,983	20,045	92,829	84,905	817	103,312	453,134	217,166	512,719
Delaware	204,826	53,818	28,062	4,183	14,228	12,563	135	14,821	69,173	8,271	31,771
Fayette	28,666	6,693	5,091	520	2,066	1,928	19	2,353	10,148	4,227	2,215
Franklin	1,310,300	304,643	157,391	23,680	95,292	75,398	863	85,844	450,179	198,207	490,422
Geauga	94,031	21,496	19,159	1,671	6,798	6,766	62	8,451	33,949	5,341	4,265
Greene	167,995	34,671	28,829	2,695	12,573	11,139	111	13,406	60,873	18,567	27,513
Hamilton	816,684	187,547	125,251	14,578	59,375	51,474	537	61,127	286,330	122,843	285,966
Harrison	15,174	3,183	3,227	247	1,123	1,125	10	1,410	5,618	2,285	788
Jefferson	65,767	12,596	14,173	979	4,990	4,875	43	6,091	24,750	12,052	6,313
Knox	61,893	14,061	11,231	1,093	4,502	4,151	41	5,072	22,013	8,039	2,897
Lake	230,514	46,209	46,066	3,592	17,306	16,634	152	20,569	85,597	16,970	28,285
Lawrence	59,866	13,009	11,313	1,011	4,404	4,163	39	5,117	21,690	11,093	3,181
Licking	175,769	40,733	28,906	3,166	12,710	11,580	116	13,955	62,123	15,591	17,928
Lorain	309,461	68,166	56,629	5,299	22,685	21,254	204	26,000	111,522	42,562	68,373
Lucas	429,899	98,562	70,047	7,661	31,226	27,868	283	33,461	151,668	78,398	135,938
Madison	44,413	9,117	6,863	709	3,327	2,935	30	3,481	16,146	4,215	5,188
Mahoning	229,642	45,992	48,145	3,575	17,249	16,630	151	20,712	85,227	36,520	56,113
Medina	179,146	39,987	31,990	3,108	13,073	12,354	118	15,080	64,507	11,474	11,087
Miami	106,222	24,389	19,773	1,896	7,692	7,259	70	8,921	37,861	8,329	8,482
Montgomery	532,331	117,543	95,583	9,137	39,064	35,589	350	43,324	190,400	87,187	156,334
Noble	14,354	2,634	3,951	205	1,093	1,197	10	1,558	5,585	2,109	716
Portage	162,927	30,531	26,794	2,373	12,492	10,893	107	12,973	60,319	17,564	17,391
Preble	40,997	9,174	7,893	713	2,988	2,868	27	3,543	14,778	3,936	1,535
Scioto	75,502	16,334	13,792	1,270	5,568	5,137	50	6,271	27,241	16,288	5,056
Stark	371,574	79,684	72,293	6,194	27,432	26,009	245	32,089	135,104	52,330	50,778
Summit	541,918	113,228	97,232	8,801	40,339	37,151	357	45,167	197,440	63,889	126,757
Trumbull	198,627	40,788	42,931	3,170	14,808	14,571	131	18,270	73,565	34,413	25,510
Warren	232,173	57,270	33,646	4,452	16,471	14,719	154	17,462	80,296	11,709	33,080
Washington	60,155	11,844	12,663	921	4,536	4,396	40	5,477	22,452	9,251	3,016
Wood	130,696	26,642	19,998	2,071	9,841	8,218	86	9,672	46,960	14,733	15,623
Totals	**9,233,344**	**2,032,822**	**1,547,361**	**158,010**	**678,504**	**607,854**	**6,082**	**731,724**	**3,297,695**	**1,278,157**	**2,289,855**

OHIO

American Lung Association in Ohio

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Allen	9	0	0	3.0	D	0	0	0	0	0.0	A	7.8	PASS
Ashtabula	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Athens	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	6.4	PASS
Belmont	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.9	PASS
Butler	23	0	0	7.7	F	0	0	0	0	0.0	A	10.5	PASS
Clark	12	0	0	4.0	F	0	0	0	0	0.0	A	8.7	PASS
Clermont	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clinton	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cuyahoga	20	0	0	6.7	F	0	0	0	0	0.0	A	11.0	PASS
Delaware	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Fayette	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Franklin	13	0	0	4.3	F	1	0	0	0	0.3	B	8.4	PASS
Geauga	23	0	0	7.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	3	0	0	1.0	C	0	0	0	0	0.0	A	7.8	PASS
Hamilton	24	1	0	8.5	F	0	0	0	0	0.0	A	9.7	PASS
Harrison	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Jefferson	1	0	0	0.3	B	2	0	0	0	0.7	B	9.5	PASS
Knox	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lake	24	0	0	8.0	F	0	0	0	0	0.0	A	7.0	PASS
Lawrence	5	0	0	1.7	C	1	0	0	0	0.3	B	6.6	PASS
Licking	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lorain	4	0	0	1.3	C	0	0	0	0	0.0	A	7.5	PASS
Lucas	16	1	0	5.8	F	1	0	0	0	0.3	B	8.5	PASS
Madison	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mahoning	0	0	0	0.0	A	0	0	0	0	0.0	A	7.9	PASS
Medina	1	0	0	0.3	B	0	0	0	0	0.0	A	7.6	PASS
Miami	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Montgomery	11	0	0	3.7	F	0	0	0	0	0.0	A	8.5	PASS
Noble	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Portage	0	0	0	0.0	A	0	0	0	0	0.0	A	7.3	PASS
Preble	2	0	0	0.7	B	1	0	0	0	0.3	B	7.8	PASS
Scioto	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	INC	INC
Stark	11	0	0	3.7	F	0	0	0	0	0.0	A	9.3	PASS
Summit	2	0	0	0.7	B	0	0	0	0	0.0	A	9.0	PASS
Trumbull	10	0	0	3.3	F	1	0	0	0	0.3	B	7.8	PASS
Warren	15	0	0	5.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wood	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

OKLAHOMA

American Lung Association in Oklahoma

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Adair	22,082	5,869	3,512	575	1,680	1,432	14	1,969	7,312	5,372	13,343
Bryan	47,192	11,054	8,477	1,083	3,720	3,143	30	4,391	16,217	7,604	13,824
Caddo	28,977	7,285	4,881	714	2,241	1,908	19	2,642	9,768	5,239	12,439
Canadian	144,447	37,771	18,770	3,701	11,111	8,728	93	11,688	47,213	10,336	35,104
Carter	48,177	12,075	8,103	1,183	3,733	3,193	31	4,416	16,281	8,335	14,715
Cherokee	48,675	10,655	8,130	1,044	3,923	3,169	31	4,376	16,883	9,862	25,635
Choctaw	14,668	3,541	3,036	347	1,142	1,059	9	1,505	5,113	3,312	5,789
Cleveland	281,669	60,612	37,659	5,939	22,971	17,209	181	23,030	96,631	32,077	80,962
Comanche	120,422	28,332	15,192	2,776	9,583	7,151	78	9,524	40,239	18,303	53,129
Cotton	5,776	1,299	1,119	127	462	424	4	593	2,056	926	1,389
Creek	71,604	17,201	12,638	1,685	5,625	4,936	46	6,847	24,700	9,874	17,424
Dewey	4,894	1,324	902	130	367	326	3	459	1,622	580	910
Jefferson	6,123	1,478	1,307	145	476	443	4	633	2,135	1,473	1,385
Johnston	10,949	2,573	2,129	252	861	762	7	1,074	3,802	2,068	3,354
Kay	44,161	11,091	8,539	1,087	3,393	2,996	28	4,239	14,993	8,751	11,403
Le Flore	49,980	11,997	9,038	1,176	3,918	3,422	32	4,772	17,207	10,903	14,386
Lincoln	34,920	8,310	6,400	814	2,750	2,469	22	3,437	12,154	5,069	6,277
Love	10,134	2,461	1,935	241	789	695	7	979	3,480	1,466	2,949
McClain	39,985	10,265	6,194	1,006	3,085	2,610	26	3,566	13,385	3,592	8,477
Mayes	41,107	9,598	7,576	940	3,251	2,866	26	3,999	14,311	6,271	14,522
Nowata	10,218	2,328	1,962	228	814	735	7	1,028	3,606	1,650	3,399
Oklahoma	792,582	203,382	108,318	19,928	61,212	48,023	508	64,776	260,424	131,185	351,494
Osage	47,014	10,217	9,386	1,001	3,791	3,454	30	4,853	16,853	6,864	17,226
Ottawa	31,175	7,643	5,720	749	2,422	2,105	20	2,949	10,637	6,210	10,970
Pittsburg	43,877	9,745	8,790	955	3,504	3,109	28	4,393	15,498	8,160	13,530
Sequoyah	41,179	9,421	7,802	923	3,274	2,914	26	4,078	14,456	7,636	15,412
Tulsa	648,360	164,042	93,318	16,073	50,281	40,387	415	54,771	215,266	89,706	248,773
Washington	51,843	12,408	10,099	1,216	4,052	3,604	33	5,085	17,924	6,607	14,239
Totals	**2,742,190**	**673,977**	**410,932**	**66,039**	**214,430**	**173,273**	**1,758**	**236,072**	**920,166**	**409,431**	**1,012,459**

OKLAHOMA

American Lung Association in Oklahoma

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adair	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bryan	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Caddo	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Canadian	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Carter	INC	INC	INC	INC	INC	2	0	0	0	0.7	B	INC	INC
Cherokee	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Choctaw	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cleveland	8	0	0	2.7	D	1	0	0	0	0.3	B	8.5	PASS
Comanche	5	0	0	1.7	C	0	0	0	0	0.0	A	7.0	PASS
Cotton	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Creek	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dewey	7	0	0	2.3	D	2	0	0	0	0.7	B	INC	INC
Jefferson	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Johnston	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kay	2	0	0	0.7	B	2	0	0	0	0.7	B	7.7	PASS
Le Flore	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Lincoln	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Love	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
McClain	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mayes	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Nowata	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Oklahoma	16	0	0	5.3	F	0	0	0	0	0.0	A	8.6	PASS
Osage	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ottawa	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC	INC
Pittsburg	1	0	0	0.3	B	0	0	0	0	0.0	A	8.1	PASS
Sequoyah	0	0	0	0.0	A	0	0	0	0	0.0	A	8.2	PASS
Tulsa	8	2	0	3.7	F	2	0	0	0	0.7	B	9.6	PASS
Washington	INC	INC	INC	INC	INC	1	0	0	0	0.3	B	INC	INC

OREGON

American Lung Association in Oregon

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Clackamas	416,075	89,515	75,318	6,490	38,275	23,053	210	32,094	142,169	30,022	76,734
Columbia	52,377	11,067	9,809	802	4,842	2,982	27	4,171	18,098	5,302	6,237
Crook	23,867	4,716	5,944	342	2,212	1,503	12	2,155	8,599	3,049	2,862
Harney	7,329	1,502	1,793	109	673	451	4	646	2,606	1,089	962
Jackson	219,564	45,245	48,236	3,280	20,229	12,911	111	18,265	76,940	32,137	42,944
Josephine	87,393	17,118	22,709	1,241	8,094	5,581	44	8,032	31,670	14,655	11,623
Klamath	67,653	14,706	14,340	1,066	6,153	3,903	34	5,512	23,338	12,310	15,294
Lake	7,879	1,513	1,987	110	735	503	4	722	2,864	1,360	1,233
Lane	379,611	69,868	73,392	5,065	36,150	21,366	192	29,676	133,980	67,217	70,215
Marion	346,868	85,432	54,349	6,194	30,699	17,436	176	23,937	112,048	48,997	121,561
Multnomah	811,880	152,901	109,080	11,085	77,901	40,721	411	54,594	276,833	95,543	249,344
Umatilla	77,516	19,551	12,120	1,417	6,806	3,878	39	5,328	24,864	11,557	26,729
Wasco	26,505	5,871	5,458	426	2,399	1,500	13	2,112	9,059	3,467	6,873
Washington	597,695	136,614	80,268	9,905	54,488	29,286	302	39,553	195,075	51,789	208,815
Totals	**3,122,212**	**655,619**	**514,803**	**47,533**	**289,656**	**165,074**	**1,580**	**226,797**	**1,058,144**	**378,494**	**841,426**

OREGON

American Lung Association in Oregon

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Clackamas	10	1	1	4.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Columbia	1	1	0	0.8	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Crook	DNC	DNC	DNC	DNC	DNC	5	5	0	0	4.2	F	9.1	PASS
Harney	DNC	DNC	DNC	DNC	DNC	6	2	0	0	3.0	D	9.8	PASS
Jackson	11	0	0	3.7	F	3	11	3	0	8.5	F	INC	INC
Josephine	DNC	DNC	DNC	DNC	DNC	0	7	0	0	3.5	F	10.3	PASS
Klamath	DNC	DNC	DNC	DNC	DNC	6	9	2	0	7.8	F	12.4	FAIL
Lake	DNC	DNC	DNC	DNC	DNC	12	7	0	0	7.5	F	INC	INC
Lane	2	2	0	1.7	C	10	4	0	1	6.2	F	9.6	PASS
Marion	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Multnomah	3	1	0	1.5	C	4	0	0	0	1.3	C	7.0	PASS
Umatilla	8	0	0	2.7	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wasco	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Washington	4	2	0	2.3	D	6	0	0	0	2.0	C	7.4	PASS

PENNSYLVANIA

American Lung Association in Pennsylvania

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Adams	102,811	20,554	20,954	2,001	8,300	6,227	66	8,622	35,826	7,919	11,291
Allegheny	1,218,452	227,749	230,377	22,168	99,742	70,310	778	96,971	424,109	138,397	263,512
Armstrong	65,263	12,510	14,338	1,218	5,322	4,133	42	5,756	23,164	5,917	1,959
Beaver	164,742	31,988	35,412	3,114	13,373	10,199	105	14,214	57,942	18,061	17,483
Berks	420,152	93,834	72,352	9,133	32,976	23,183	269	31,654	140,195	46,762	122,246
Blair	122,492	25,017	25,445	2,435	9,809	7,349	78	10,240	42,311	17,156	6,675
Bradford	60,833	13,362	12,955	1,301	4,782	3,696	39	5,160	20,788	7,495	2,549
Bucks	628,195	128,216	117,060	12,480	50,664	37,204	402	50,819	217,670	35,350	102,058
Cambria	131,730	25,309	29,736	2,463	10,694	8,264	84	11,606	46,467	18,520	9,567
Centre	162,805	24,461	23,195	2,381	13,913	8,286	105	11,136	57,038	25,901	24,046
Chester	522,046	118,139	85,335	11,499	40,938	28,596	334	38,704	173,851	34,311	108,918
Clearfield	79,388	14,453	16,291	1,407	6,554	4,882	51	6,749	28,240	11,323	5,584
Cumberland	251,423	50,918	46,545	4,956	20,199	14,275	161	19,667	85,944	17,469	37,225
Dauphin	277,097	62,355	47,002	6,069	21,700	15,153	177	20,668	92,113	35,730	96,578
Delaware	564,751	123,908	92,607	12,061	44,571	30,589	361	41,541	188,466	47,800	190,290
Elk	30,169	5,870	6,640	571	2,456	1,935	19	2,687	10,733	2,742	817
Erie	272,061	58,156	48,900	5,661	21,578	15,252	174	20,938	91,833	39,839	42,933
Fayette	130,441	25,011	27,603	2,434	10,630	8,059	84	11,199	45,994	18,475	10,877
Franklin	154,835	34,405	30,425	3,349	12,132	8,978	99	12,455	52,182	16,759	19,006
Greene	36,506	7,075	6,896	689	2,971	2,136	24	2,935	12,694	5,334	2,389
Indiana	84,501	15,312	16,480	1,490	6,954	4,917	54	6,814	29,585	12,356	5,220
Lackawanna	210,793	43,243	42,061	4,209	16,869	12,398	135	17,208	72,434	28,929	33,043
Lancaster	543,557	127,967	97,560	12,456	41,843	29,653	348	40,927	178,138	42,131	100,253
Lawrence	86,184	17,086	18,951	1,663	6,952	5,352	55	7,490	30,187	13,319	7,038
Lebanon	141,314	32,143	27,397	3,129	10,986	8,049	90	11,180	47,133	13,802	26,209
Lehigh	368,100	83,207	61,507	8,099	28,764	19,842	235	27,070	121,744	42,991	134,641
Luzerne	317,646	62,610	63,184	6,094	25,696	18,827	203	26,071	110,264	43,839	62,210
Lycoming	113,664	23,267	21,935	2,265	9,111	6,611	73	9,135	39,007	14,054	10,740
Mercer	110,683	21,463	23,991	2,089	8,977	6,834	71	9,548	38,872	15,985	11,023
Monroe	169,507	33,306	29,181	3,242	13,828	9,821	109	13,274	58,959	20,202	59,228
Montgomery	828,604	178,218	147,124	17,347	65,743	46,770	530	63,941	280,276	47,317	204,331
Northampton	304,807	60,926	57,955	5,930	24,602	17,747	195	24,442	105,196	29,917	73,337
Philadelphia	1,584,138	343,970	216,276	33,481	125,116	77,536	1,009	103,994	517,325	372,322	1,039,969
Somerset	73,952	13,224	16,535	1,287	6,115	4,706	48	6,574	26,551	8,289	4,324
Susquehanna	40,589	7,498	9,604	730	3,335	2,676	26	3,752	14,634	5,128	1,525
Tioga	40,763	8,140	8,983	792	3,280	2,522	26	3,534	14,236	5,894	1,601
Washington	207,346	40,332	42,617	3,926	16,847	12,623	133	17,492	72,688	18,274	16,532
Westmoreland	350,611	64,117	79,652	6,241	28,867	22,565	224	31,543	125,835	31,749	21,836
York	448,273	99,020	78,216	9,638	35,336	25,144	287	34,297	150,669	38,582	76,751
Totals	**11,421,224**	**2,378,339**	**2,049,277**	**231,498**	**912,526**	**643,300**	**7,304**	**882,008**	**3,881,295**	**1,356,340**	**2,965,814**

PENNSYLVANIA

American Lung Association in Pennsylvania

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Adams	7	0	0	2.3	D	1	0	0	0	0.3	B	7.6	PASS
Allegheny	23	1	0	8.2	F	26	2	0	0	9.7	F	12.6	FAIL
Armstrong	6	0	0	2.0	C	0	0	0	0	0.0	A	9.3	PASS
Beaver	12	0	0	4.0	F	1	0	0	0	0.3	B	9.1	PASS
Berks	13	0	0	4.3	F	4	0	0	0	1.3	C	8.5	PASS
Blair	2	0	0	0.7	B	1	0	0	0	0.3	B	8.1	PASS
Bradford	0	0	0	0.0	A	0	0	0	0	0.0	A	7.0	PASS
Bucks	30	3	0	11.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cambria	0	0	0	0.0	A	0	0	0	0	0.0	A	9.7	PASS
Centre	2	0	0	0.7	B	2	0	0	0	0.7	B	8.1	PASS
Chester	15	0	0	5.0	F	0	0	0	0	0.0	A	9.7	PASS
Clearfield	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Cumberland	DNC	DNC	DNC	DNC	DNC	2	0	0	0	0.7	B	8.1	PASS
Dauphin	5	0	0	1.7	C	3	0	0	0	1.0	C	8.6	PASS
Delaware	11	0	0	3.7	F	2	0	0	0	0.7	B	10.7	PASS
Elk	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Erie	3	0	0	1.0	C	0	0	0	0	0.0	A	8.1	PASS
Fayette	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Franklin	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greene	1	0	0	0.3	B	0	0	0	0	0.0	A	6.2	PASS
Indiana	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lackawanna	4	0	0	1.3	C	0	0	0	0	0.0	A	8.3	PASS
Lancaster	9	0	0	3.0	D	6	0	0	0	2.0	C	9.8	PASS
Lawrence	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lebanon	7	0	0	2.3	D	3	0	0	0	1.0	C	9.3	PASS
Lehigh	8	0	0	2.7	D	1	0	0	0	0.3	B	9.0	PASS
Luzerne	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lycoming	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Mercer	8	0	0	2.7	D	0	0	0	0	0.0	A	9.3	PASS
Monroe	5	0	0	1.7	C	0	0	0	0	0.0	A	INC	INC
Montgomery	19	0	0	6.3	F	INC	INC	INC	INC	INC	INC	INC	INC
Northampton	13	0	0	4.3	F	2	0	0	0	0.7	B	8.4	PASS
Philadelphia	28	3	0	10.8	F	0	0	0	0	0.0	A	10.1	PASS
Somerset	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Susquehanna	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Tioga	2	0	0	0.7	B	0	0	0	0	0.0	A	7.7	PASS
Washington	5	0	0	1.7	C	0	0	0	0	0.0	A	8.5	PASS
Westmoreland	7	0	0	2.3	D	0	0	0	0	0.0	A	8.7	PASS
York	6	0	0	2.0	C	0	0	0	0	0.0	A	9.3	PASS

RHODE ISLAND

American Lung Association in Rhode Island

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Kent	163,861	30,623	30,962	2,407	15,783	9,707	113	13,087	57,341	12,620	19,509
Providence	636,084	130,676	97,217	10,272	59,838	33,355	439	44,070	210,372	98,431	248,891
Washington	126,179	20,842	26,164	1,638	12,462	7,734	87	10,569	45,415	9,507	11,430
Totals	**926,124**	**182,141**	**154,343**	**14,318**	**88,083**	**50,796**	**640**	**67,726**	**313,129**	**120,558**	**279,830**

RHODE ISLAND

American Lung Association in Rhode Island

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Kent	16	0	0	5.3	F	0	0	0	0	0.0	A	5.0	PASS
Providence	16	0	0	5.3	F	0	0	0	0	0.0	A	8.8	PASS
Washington	12	2	0	5.0	F	0	0	0	0	0.0	A	5.1	PASS

SOUTH CAROLINA

American Lung Association in South Carolina

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Abbeville	24,541	4,924	5,343	352	1,769	1,736	15	2,238	8,735	4,545	7,624
Aiken	169,401	36,849	32,901	2,637	11,999	11,369	103	14,426	58,536	25,095	57,686
Anderson	200,482	45,852	36,185	3,282	14,036	13,075	121	16,433	68,045	28,843	45,645
Berkeley	221,091	52,749	30,410	3,775	15,382	13,089	135	15,752	72,505	27,687	80,553
Charleston	405,905	79,933	66,621	5,721	29,612	25,751	246	31,548	140,850	55,971	142,289
Cherokee	57,078	13,140	9,598	940	3,999	3,645	35	4,529	19,241	9,394	15,558
Chesterfield	45,754	10,032	8,395	718	3,249	3,070	28	3,867	15,796	9,453	18,154
Colleton	37,660	8,390	7,595	600	2,647	2,562	23	3,277	12,998	7,440	16,190
Darlington	66,802	14,817	12,678	1,060	4,713	4,459	40	5,644	22,963	15,356	30,255
Edgefield	27,052	4,894	5,074	350	2,014	1,866	17	2,337	9,741	4,489	11,716
Florence	138,159	32,590	23,471	2,332	9,591	8,729	83	10,871	46,178	24,375	66,992
Greenville	514,213	118,364	81,136	8,471	36,044	31,886	312	39,169	171,994	55,837	163,199
Horry	344,147	61,715	82,431	4,417	25,384	25,499	209	33,265	126,421	48,595	77,287
Lexington	295,032	68,294	46,581	4,888	20,688	18,574	179	22,867	98,995	36,432	75,300
Oconee	78,374	15,615	18,196	1,118	5,647	5,684	48	7,409	28,123	11,159	12,423
Pickens	124,937	23,712	20,660	1,697	9,181	7,896	76	9,657	43,583	19,471	18,028
Richland	414,576	88,630	52,790	6,343	29,740	23,817	251	28,023	138,156	64,210	239,888
Spartanburg	313,888	72,501	50,812	5,189	21,970	19,654	190	24,257	105,176	41,706	100,392
York	274,118	66,495	39,236	4,759	19,001	16,696	166	20,296	90,243	26,453	81,682
Totals	**3,753,210**	**819,496**	**630,113**	**58,651**	**266,667**	**239,056**	**2,277**	**295,868**	**1,278,280**	**516,511**	**1,260,861**

SOUTH CAROLINA

American Lung Association in South Carolina

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Abbeville	INC	INC	INC	INC	INC
Aiken	0	0	0	0.0	A
Anderson	0	0	0	0.0	A
Berkeley	0	0	0	0.0	A
Charleston	1	0	0	0.3	B
Cherokee	INC	INC	INC	INC	INC
Chesterfield	1	0	0	0.3	B
Colleton	0	0	0	0.0	A
Darlington	0	0	0	0.0	A
Edgefield	1	0	0	0.3	B
Florence	DNC	DNC	DNC	DNC	DNC
Greenville	1	0	0	0.3	B
Horry	0	0	0	0.0	A
Lexington	DNC	DNC	DNC	DNC	DNC
Oconee	1	0	0	0.3	B
Pickens	1	0	0	0.3	B
Richland	5	0	0	1.7	C
Spartanburg	3	0	0	1.0	C
York	5	0	0	1.7	C

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Abbeville	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Aiken	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Anderson	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Berkeley	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charleston	1	2	0	0	1.3	C	7.2	PASS
Cherokee	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chesterfield	0	0	0	0	0.0	A	INC	INC
Colleton	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Darlington	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Edgefield	1	1	0	0	0.8	B	8.2	PASS
Florence	0	0	0	0	0.0	A	INC	INC
Greenville	3	2	0	0	2.0	C	8.3	PASS
Horry	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Lexington	0	2	0	0	1.0	C	8.5	PASS
Oconee	0	0	0	0	0.0	A	INC	INC
Pickens	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Richland	0	2	0	0	1.0	C	7.8	PASS
Spartanburg	0	0	0	0	0.0	A	8.0	PASS
York	INC	INC	INC	INC	INC	INC	INC	INC

SOUTH DAKOTA

American Lung Association in South Dakota

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Brookings	35,232	7,223	4,195	517	2,227	985	21	1,873	12,098	3,744	3,614
Brown	39,316	9,416	6,747	674	2,348	1,375	23	2,753	13,167	4,195	5,537
Codington	28,015	6,724	4,949	481	1,669	1,013	17	2,032	9,404	3,115	2,082
Custer	8,726	1,343	2,621	96	568	450	5	953	3,335	853	830
Hughes	17,650	4,251	3,057	304	1,051	632	10	1,264	5,914	1,590	3,212
Jackson	3,307	1,105	442	79	173	97	2	192	967	1,070	2,003
Meade	28,294	6,463	4,316	463	1,721	940	17	1,849	9,567	2,309	3,665
Minnehaha	192,876	49,051	25,229	3,511	11,371	5,934	114	11,455	62,848	18,035	35,825
Pennington	111,729	25,603	20,087	1,832	6,753	4,072	66	8,179	38,016	14,567	22,323
Union	15,619	3,779	2,832	270	927	574	9	1,155	5,238	915	1,257
Totals	**480,764**	**114,958**	**74,475**	**8,227**	**28,810**	**16,073**	**284**	**31,703**	**160,553**	**50,393**	**80,348**

SOUTH DAKOTA

American Lung Association in South Dakota

	HIGH OZONE DAYS 2016–2018				
County	Orange	Red	Purple	Wgt. Avg.	Grade
Brookings	2	0	0	0.7	B
Brown	DNC	DNC	DNC	DNC	DNC
Codington	DNC	DNC	DNC	DNC	DNC
Custer	0	0	0	0.0	A
Hughes	DNC	DNC	DNC	DNC	DNC
Jackson	0	0	0	0.0	A
Meade	0	0	0	0.0	A
Minnehaha	4	0	0	1.3	C
Pennington	DNC	DNC	DNC	DNC	DNC
Union	2	0	0	0.7	B

	HIGH PARTICLE POLLUTION DAYS 2016–2018							
	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Brookings	0	0	0	0	0.0	A	4.6	PASS
Brown	1	0	0	0	0.3	B	6.0	PASS
Codington	1	0	0	0	0.3	B	6.8	PASS
Custer	2	1	0	0	1.2	C	3.6	PASS
Hughes	1	0	0	0	0.3	B	4.0	PASS
Jackson	3	0	0	0	1.0	C	3.7	PASS
Meade	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Minnehaha	0	0	0	0	0.0	A	5.9	PASS
Pennington	6	1	0	0	2.5	D	6.8	PASS
Union	2	0	0	0	0.7	B	6.2	PASS

TENNESSEE

American Lung Association in Tennessee

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Anderson	76,482	16,078	15,356	1,566	6,003	6,909	55	8,161	27,938	12,433	8,366
Blount	131,349	26,559	26,575	2,587	10,429	12,028	95	14,202	48,512	12,816	12,028
Claiborne	31,756	6,060	6,334	590	2,544	2,896	23	3,399	11,836	7,129	1,496
Davidson	692,587	144,027	84,795	14,027	52,537	52,557	501	56,480	242,197	102,623	303,675
DeKalb	20,138	4,351	3,699	424	1,571	1,789	15	2,082	7,280	3,435	2,531
Dyer	37,320	8,927	6,566	869	2,806	3,149	27	3,653	13,019	6,735	7,549
Hamilton	364,286	75,645	64,030	7,367	28,313	31,175	264	35,859	131,428	46,021	105,494
Jefferson	54,012	10,618	10,818	1,034	4,328	4,995	39	5,881	20,102	7,241	4,307
Knox	465,289	97,591	73,661	9,505	35,804	38,307	337	43,213	165,829	59,817	82,453
Lawrence	43,734	10,932	7,794	1,065	3,248	3,676	32	4,287	15,084	7,643	2,822
Loudon	53,054	10,295	14,026	1,003	4,279	5,223	39	6,482	20,171	4,754	6,681
McMinn	53,285	11,306	10,458	1,101	4,177	4,802	39	5,651	19,413	8,307	5,825
Madison	97,605	21,872	16,615	2,130	7,444	8,212	70	9,430	34,515	16,631	43,222
Maury	94,340	22,094	15,014	2,152	7,114	7,808	68	8,886	32,888	10,032	19,819
Montgomery	205,950	54,985	19,005	5,355	14,325	13,727	150	14,232	65,815	24,251	76,668
Putnam	78,843	16,455	13,134	1,603	6,043	6,452	57	7,334	28,094	10,996	9,378
Roane	53,140	9,981	12,108	972	4,337	5,169	39	6,222	20,223	7,779	3,928
Sevier	97,892	20,173	19,341	1,965	7,742	8,916	71	10,492	35,969	13,466	10,050
Shelby	935,764	232,721	127,099	22,665	68,612	72,650	675	80,599	316,259	198,554	602,781
Sullivan	157,668	30,362	34,529	2,957	12,684	14,830	114	17,731	59,195	25,549	10,570
Sumner	187,149	43,922	29,664	4,278	14,164	15,653	136	17,819	65,383	16,426	30,336
Williamson	231,729	63,088	30,480	6,144	16,798	18,454	168	20,589	76,951	8,794	36,349
Wilson	140,625	33,332	22,065	3,246	10,622	11,749	102	13,362	49,002	10,888	21,561
Totals	**4,303,997**	**971,374**	**663,166**	**94,604**	**325,922**	**351,123**	**3,116**	**396,045**	**1,507,103**	**622,320**	**1,407,889**

TENNESSEE

American Lung Association in Tennessee

HIGH OZONE DAYS 2016–2018

County	Orange	Red	Purple	Wgt. Avg.	Grade
Anderson	0	0	0	0.0	A
Blount	5	0	0	1.7	C
Claiborne	1	0	0	0.3	B
Davidson	8	1	0	3.2	D
DeKalb	0	0	0	0.0	A
Dyer	DNC	DNC	DNC	DNC	DNC
Hamilton	5	0	0	1.7	C
Jefferson	3	0	0	1.0	C
Knox	3	0	0	1.0	C
Lawrence	DNC	DNC	DNC	DNC	DNC
Loudon	8	0	0	2.7	D
McMinn	DNC	DNC	DNC	DNC	DNC
Madison	DNC	DNC	DNC	DNC	DNC
Maury	DNC	DNC	DNC	DNC	DNC
Montgomery	DNC	DNC	DNC	DNC	DNC
Putnam	DNC	DNC	DNC	DNC	DNC
Roane	DNC	DNC	DNC	DNC	DNC
Sevier	6	0	0	2.0	C
Shelby	17	1	0	6.2	F
Sullivan	3	0	0	1.0	C
Sumner	2	0	0	0.7	B
Williamson	2	0	0	0.7	B
Wilson	2	0	0	0.7	B

HIGH PARTICLE POLLUTION DAYS 2016–2018

	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Anderson	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Blount	1	2	0	0	1.3	C	7.8	PASS
Claiborne	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Davidson	2	0	0	0	0.7	B	8.4	PASS
DeKalb	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dyer	0	0	0	0	0.0	A	6.9	PASS
Hamilton	0	1	0	0	0.5	B	8.3	PASS
Jefferson	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Knox	2	3	0	0	2.2	D	9.3	PASS
Lawrence	0	0	0	0	0.0	A	6.6	PASS
Loudon	0	2	0	0	1.0	C	7.4	PASS
McMinn	0	1	0	0	0.5	B	8.1	PASS
Madison	0	0	0	0	0.0	A	6.7	PASS
Maury	0	0	0	0	0.0	A	6.9	PASS
Montgomery	0	0	0	0	0.0	A	7.9	PASS
Putnam	0	0	0	0	0.0	A	7.2	PASS
Roane	0	1	0	0	0.5	B	7.6	PASS
Sevier	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Shelby	0	0	0	0	0.0	A	8.4	PASS
Sullivan	1	0	0	0	0.3	B	7.3	PASS
Sumner	0	0	0	0	0.0	A	7.4	PASS
Williamson	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wilson	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

TEXAS

American Lung Association in Texas

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Bell	355,642	98,517	38,585	7,796	19,075	14,784	176	21,459	90,216	44,865	196,139
Bexar	1,986,049	507,669	240,621	40,173	110,192	88,909	983	129,620	525,960	334,215	1,442,742
Bowie	94,324	22,392	15,605	1,772	5,410	4,910	47	7,256	26,496	16,794	34,759
Brazoria	370,200	97,945	43,678	7,751	20,416	16,784	184	24,485	98,047	36,342	199,319
Brewster	9,267	1,744	2,144	138	568	574	5	859	2,847	1,475	4,601
Cameron	423,908	128,553	57,415	10,173	22,072	18,937	209	27,830	106,653	117,193	386,787
Collin	1,005,146	260,476	110,655	20,612	55,957	45,454	497	66,141	268,418	64,180	442,771
Dallas	2,637,772	689,692	283,154	54,576	145,314	114,140	1,305	165,674	690,633	368,310	1,882,256
Denton	859,064	211,996	87,414	16,776	48,448	37,934	425	54,957	230,539	62,151	357,924
Ector	162,124	48,856	15,760	3,866	8,401	6,381	81	9,232	39,595	20,485	110,649
Ellis	179,436	47,950	22,981	3,794	9,893	8,426	89	12,341	47,889	15,609	71,985
El Paso	840,758	228,000	103,092	18,042	45,680	37,224	416	54,345	218,435	169,120	742,873
Galveston	337,890	81,893	48,605	6,480	19,293	16,919	167	24,872	93,965	40,109	145,198
Gregg	123,707	31,951	19,016	2,528	6,889	6,126	61	9,034	33,583	18,108	53,082
Harris	4,698,619	1,251,684	494,264	99,047	257,086	201,143	2,328	291,795	1,220,954	767,367	3,331,840
Harrison	66,726	16,865	11,277	1,335	3,765	3,506	33	5,194	18,563	9,584	24,559
Hidalgo	865,939	281,965	96,025	22,312	43,404	34,745	428	50,647	206,610	256,985	813,576
Hood	60,537	12,905	14,870	1,021	3,624	3,874	30	5,825	18,450	6,108	9,997
Hunt	96,493	23,183	15,282	1,835	5,529	5,001	48	7,381	27,097	12,715	28,005
Jefferson	255,001	61,181	36,809	4,841	14,538	12,545	127	18,429	70,443	44,682	153,437
Johnson	171,361	44,541	24,219	3,525	9,548	8,358	85	12,288	46,465	17,965	49,428
Kaufman	128,622	35,656	15,367	2,822	6,979	5,805	64	8,480	33,601	14,539	48,638
Kleberg	31,129	7,540	4,029	597	1,739	1,363	16	1,986	8,213	7,369	24,948
Lubbock	307,412	73,288	38,200	5,799	17,342	13,670	152	19,906	82,197	52,037	144,425
McLennan	254,607	62,861	36,615	4,974	14,300	12,114	126	17,783	68,872	46,457	112,971
Maverick	58,485	18,246	6,916	1,444	2,996	2,445	29	3,571	14,321	14,859	56,911
Montgomery	590,925	155,734	77,263	12,323	32,775	28,127	293	41,232	158,939	54,400	206,109
Navarro	49,565	13,139	8,429	1,040	2,751	2,582	25	3,829	13,586	9,739	22,112
Nueces	362,265	88,977	52,215	7,041	20,476	17,631	179	25,902	99,120	57,694	257,166
Orange	83,572	20,764	13,466	1,643	4,739	4,328	41	6,396	23,270	11,101	16,403
Parker	138,371	34,364	21,302	2,719	7,876	7,176	69	10,589	38,720	11,289	23,629
Polk	50,031	10,088	9,422	798	3,035	2,924	25	4,342	15,111	6,834	14,622
Potter	119,648	32,848	14,922	2,599	6,489	5,377	60	7,862	31,166	22,262	67,678
Randall	136,271	32,501	20,536	2,572	7,765	6,729	67	9,898	37,611	11,343	39,839
Rockwall	100,657	27,150	12,594	2,148	5,543	4,733	50	6,930	26,873	5,125	29,939
Smith	230,221	56,582	38,010	4,477	13,044	11,827	114	17,486	63,841	33,744	93,682
Tarrant	2,084,931	549,063	235,187	43,448	114,981	92,803	1,030	135,089	549,979	248,032	1,127,499
Travis	1,248,743	270,726	123,395	21,423	72,560	53,877	621	77,667	340,744	146,724	638,924
Victoria	92,035	23,330	14,822	1,846	5,156	4,636	45	6,849	25,181	13,855	51,251
Webb	275,910	90,830	26,087	7,187	13,761	10,588	136	15,337	65,071	69,860	266,071
Totals	**21,943,363**	**5,753,645**	**2,550,248**	**455,293**	**1,209,410**	**975,407**	**10,864**	**1,420,798**	**5,778,268**	**3,261,625**	**13,724,744**

TEXAS

American Lung Association in Texas

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bell	10	0	0	3.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bexar	19	1	0	6.8	F	1	0	0	0	0.3	B	8.1	PASS
Bowie	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	INC	INC
Brazoria	13	2	0	5.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Brewster	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC	INC
Cameron	0	0	0	0.0	A	1	0	0	0	0.3	B	9.9	PASS
Collin	27	0	0	9.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dallas	23	1	0	8.2	F	3	2	0	0	2.0	C	8.9	PASS
Denton	33	1	0	11.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Ector	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Ellis	8	0	0	2.7	D	1	0	0	0	0.3	B	8.4	PASS
El Paso	28	2	0	10.3	F	1	0	0	0	0.3	B	9.1	PASS
Galveston	20	0	1	7.3	F	1	0	0	0	0.3	B	6.6	PASS
Gregg	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Harris	50	10	1	22.3	F	3	0	0	0	1.0	C	10.2	PASS
Harrison	0	0	0	0.0	A	1	0	0	0	0.3	B	8.5	PASS
Hidalgo	0	0	0	0.0	A	4	0	0	0	1.3	C	10.7	PASS
Hood	9	0	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hunt	3	1	0	1.5	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Jefferson	12	1	0	4.5	F	INC	INC	INC	INC	INC	INC	INC	INC
Johnson	19	1	0	6.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kaufman	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kleberg	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Lubbock	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
McLennan	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Maverick	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Montgomery	21	1	0	7.5	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Navarro	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Nueces	0	0	0	0.0	A	0	0	0	0	0.0	A	9.1	PASS
Orange	7	0	0	2.3	D	INC	INC	INC	INC	INC	INC	INC	INC
Parker	6	2	0	3.0	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Polk	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Potter	DNC	DNC	DNC	DNC	DNC	INC	INC	INC	INC	INC	INC	INC	INC
Randall	11	0	0	3.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockwall	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Smith	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tarrant	34	4	0	13.3	F	0	0	0	0	0.0	A	8.6	PASS
Travis	10	0	0	3.3	F	4	0	0	0	1.3	C	9.8	PASS
Victoria	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Webb	0	0	0	0.0	A	INC	INC	INC	INC	INC	INC	INC	INC

UTAH

American Lung Association in Utah

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Box Elder	54,950	17,430	7,109	957	3,530	1,692	14	2,478	9,591	3,986	7,168
Cache	127,068	38,511	12,009	2,113	8,181	3,394	32	4,570	21,648	15,830	21,173
Carbon	20,269	5,227	3,530	287	1,424	731	5	1,119	3,912	2,853	3,437
Davis	351,713	112,970	35,317	6,200	22,328	9,983	90	13,898	60,011	19,798	58,000
Duchesne	19,964	6,720	2,408	369	1,244	587	5	852	3,370	2,335	3,002
Garfield	5,080	1,183	1,175	65	372	208	1	335	1,036	551	604
Iron	52,775	15,317	6,700	841	3,498	1,606	13	2,310	9,418	7,444	7,456
Salt Lake	1,152,633	312,889	125,157	17,171	78,549	35,187	294	49,059	211,172	102,660	338,240
San Juan	15,449	4,719	2,187	259	1,014	502	4	747	2,772	3,419	8,706
Tooele	69,907	22,807	6,403	1,252	4,409	1,955	18	2,687	11,849	4,744	11,984
Uintah	35,438	11,754	3,855	645	2,219	1,016	9	1,442	5,985	4,031	6,636
Utah	622,213	207,710	48,050	11,399	38,230	15,362	159	20,064	100,766	57,136	111,686
Washington	171,700	44,808	36,844	2,459	12,001	6,463	44	10,322	33,138	16,435	27,119
Weber	256,359	72,484	29,897	3,978	17,237	7,912	65	11,229	46,518	23,839	62,335
Totals	**2,955,518**	**874,529**	**320,641**	**47,993**	**194,234**	**86,599**	**753**	**121,112**	**521,185**	**265,061**	**667,546**

UTAH

American Lung Association in Utah

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Box Elder	7	1	0	2.8	D	16	1	0	0	5.8	F	7.7	PASS
Cache	2	0	0	0.7	B	26	4	0	0	10.7	F	7.6	PASS
Carbon	5	0	0	1.7	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Davis	39	1	0	13.5	F	15	0	0	0	5.0	F	8.3	PASS
Duchesne	19	6	0	9.3	F	4	0	0	0	1.3	C	6.3	PASS
Garfield	INC	INC	INC	INC	INC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Iron	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC	INC
Salt Lake	74	2	0	25.7	F	27	5	0	0	11.5	F	8.8	PASS
San Juan	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Tooele	27	1	0	9.5	F	7	0	0	0	2.3	D	7.0	PASS
Uintah	11	11	4	11.8	F	0	0	0	0	0.0	A	INC	INC
Utah	35	2	0	12.7	F	22	10	0	0	12.3	F	8.3	PASS
Washington	2	0	0	0.7	B	0	0	0	0	0.0	A	5.2	PASS
Weber	40	1	0	13.8	F	18	3	0	0	7.5	F	8.3	PASS

VERMONT

American Lung Association in Vermont

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Bennington	35,631	6,756	8,162	594	3,459	1,970	22	2,515	13,048	3,905	2,237
Chittenden	164,572	29,165	24,673	2,565	16,693	7,144	100	8,950	58,135	16,039	19,535
Rutland	58,672	10,438	12,955	918	5,799	3,220	36	4,097	21,696	5,842	2,844
Totals	**258,875**	**46,359**	**45,790**	**4,078**	**25,951**	**12,335**	**157**	**15,562**	**92,878**	**25,786**	**24,616**

VERMONT

American Lung Association in Vermont

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Bennington	3	0	0	1.0	C	0	0	0	0	0.0	A	5.4	PASS
Chittenden	0	0	0	0.0	A	0	0	0	0	0.0	A	5.7	PASS
Rutland	0	0	0	0.0	A	0	0	0	0	0.0	A	6.9	PASS

VIRGINIA

American Lung Association in Virginia

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Albemarle	108,718	21,528	20,248	1,541	7,402	5,761	62	7,598	33,294	8,912	25,438
Arlington	237,521	42,959	25,209	3,075	16,811	10,477	137	12,482	70,137	14,842	92,122
Caroline	30,772	7,079	5,050	507	2,023	1,573	18	2,046	9,070	2,930	11,221
Charles City	6,941	1,052	1,708	75	497	450	4	617	2,358	851	3,976
Chesterfield	348,556	82,795	52,028	5,926	22,775	17,231	200	22,099	101,027	26,093	135,536
Fairfax	1,150,795	269,162	154,840	19,264	75,830	55,228	663	69,580	331,792	69,377	572,332
Fauquier	70,675	16,513	11,620	1,182	4,632	3,700	41	4,821	20,927	4,260	14,578
Frederick	88,355	20,386	15,264	1,459	5,793	4,610	51	6,050	26,189	6,107	15,357
Giles	16,844	3,486	3,681	249	1,127	971	10	1,320	5,258	2,064	916
Hanover	107,239	23,572	19,032	1,687	7,135	5,786	62	7,612	32,443	5,509	17,456
Henrico	329,261	74,272	51,045	5,316	21,816	16,448	188	21,162	96,753	29,502	155,803
Loudoun	406,850	115,028	37,802	8,232	25,338	17,141	234	20,642	107,899	14,700	181,773
Madison	13,295	2,706	2,959	194	894	783	8	1,067	4,192	1,330	2,060
Prince Edward	22,950	3,767	3,779	270	1,635	1,148	13	1,467	7,110	3,782	8,956
Prince William	468,011	127,210	46,319	9,104	29,535	19,997	270	24,216	125,932	29,545	271,371
Roanoke	94,073	18,648	20,151	1,335	6,372	5,386	54	7,282	29,518	6,145	13,644
Rockbridge	22,752	3,985	5,909	285	1,571	1,431	13	1,991	7,502	2,670	1,850
Rockingham	81,244	17,785	15,472	1,273	5,384	4,367	47	5,811	24,549	6,909	9,513
Stafford	149,960	39,088	15,674	2,798	9,603	6,614	87	8,062	41,164	7,822	59,400
Wythe	28,754	5,672	6,213	406	1,951	1,677	17	2,270	9,087	4,391	1,841
Bristol City	16,482	3,323	3,476	238	1,111	927	9	1,250	5,126	3,324	2,002
Hampton City	134,313	28,086	20,745	2,010	9,084	6,645	77	8,504	39,923	19,954	83,471
Lynchburg City	82,126	15,946	11,823	1,141	5,651	3,731	47	4,677	24,116	14,789	30,887
Norfolk City	244,076	47,785	27,334	3,420	16,914	10,590	142	12,740	70,764	41,471	138,496
Richmond City	228,783	40,064	30,172	2,867	16,219	10,813	131	13,347	69,163	48,424	133,599
Salem City	25,643	5,115	4,836	366	1,743	1,382	15	1,828	7,886	2,280	3,845
Suffolk City	91,185	22,132	13,164	1,584	5,924	4,454	52	5,689	26,212	9,846	46,396
Virginia Beach City	450,189	99,573	64,004	7,126	30,059	21,541	259	27,256	131,107	33,084	174,180
Totals	**5,056,363**	**1,158,717**	**689,557**	**82,929**	**334,827**	**240,861**	**2,908**	**303,486**	**1,460,496**	**420,913**	**2,208,019**

VIRGINIA

American Lung Association in Virginia

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albemarle	1	0	0	0.3	B	0	0	0	0	0.0	A	6.5	PASS
Arlington	12	0	0	4.0	F	1	0	0	0	0.3	B	7.5	PASS
Caroline	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Charles City	2	0	0	0.7	B	0	0	0	0	0.0	A	6.6	PASS
Chesterfield	1	0	0	0.3	B	0	0	0	0	0.0	A	INC	INC
Fairfax	7	0	0	2.3	D	1	0	0	0	0.3	B	6.8	PASS
Fauquier	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Frederick	0	0	0	0.0	A	0	0	0	0	0.0	A	7.4	PASS
Giles	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hanover	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Henrico	4	1	0	1.8	C	0	0	0	0	0.0	A	7.1	PASS
Loudoun	1	0	0	0.3	B	0	0	0	0	0.0	A	7.1	PASS
Madison	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Prince Edward	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Prince William	3	0	0	1.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Roanoke	0	0	0	0.0	A	0	0	0	0	0.0	A	6.7	PASS
Rockbridge	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rockingham	1	0	0	0.3	B	0	0	0	0	0.0	A	7.0	PASS
Stafford	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wythe	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Bristol City	DNC	DNC	DNC	DNC	DNC	1	0	0	0	0.3	B	7.3	PASS
Hampton City	2	0	0	0.7	B	0	0	0	0	0.0	A	6.2	PASS
Lynchburg City	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	6.5	PASS
Norfolk City	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	6.7	PASS
Richmond City	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	INC	INC
Salem City	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.2	PASS
Suffolk City	2	0	0	0.7	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Virginia Beach City	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	6.7	PASS

WASHINGTON

American Lung Association in Washington

		AT-RISK GROUPS									
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Benton	201,877	54,000	30,097	3,947	14,191	7,540	109	11,647	56,098	19,597	61,006
Chelan	77,036	18,022	14,696	1,317	5,705	3,281	41	5,208	22,956	8,283	25,025
Clallam	76,737	13,055	22,720	954	6,220	4,140	41	6,931	25,971	9,968	13,411
Clark	481,857	115,356	74,530	8,432	35,315	19,006	259	29,262	139,895	41,980	106,021
King	2,233,163	452,859	295,110	33,103	169,665	83,663	1,202	125,808	660,298	202,628	918,713
Kitsap	269,805	55,252	48,094	4,039	20,627	11,319	145	17,733	82,143	23,613	64,009
Kittitas	47,364	8,096	7,592	592	3,720	1,867	25	2,890	14,557	7,049	7,694
Okanogan	42,132	9,769	9,094	714	3,150	1,916	23	3,087	12,841	7,049	14,878
Pierce	891,299	209,270	123,135	15,297	65,285	33,364	479	50,668	255,881	76,391	300,347
Skagit	128,206	27,977	26,591	2,045	9,695	5,695	69	9,131	39,219	12,239	33,368
Snohomish	814,901	184,547	109,768	13,490	60,643	31,252	439	47,028	237,856	60,590	253,858
Spokane	514,631	114,051	83,279	8,337	38,439	20,536	277	31,830	152,153	65,365	80,882
Stevens	45,260	9,761	10,542	714	3,486	2,207	24	3,565	14,335	6,045	6,148
Thurston	286,419	61,378	49,514	4,487	21,625	11,787	154	18,417	85,986	24,459	72,841
Whatcom	225,685	43,910	39,158	3,210	17,350	9,201	121	14,405	68,644	32,753	48,048
Yakima	251,446	74,480	34,524	5,444	16,911	8,764	135	13,490	66,527	40,961	144,155
Totals	**6,587,818**	**1,451,783**	**978,444**	**106,123**	**492,026**	**255,539**	**3,544**	**391,100**	**1,935,360**	**638,970**	**2,150,404**

WASHINGTON

American Lung Association in Washington

	HIGH OZONE DAYS 2016–2018				
County	Orange	Red	Purple	Wgt. Avg.	Grade
Benton	16	0	0	5.3	F
Chelan	DNC	DNC	DNC	DNC	DNC
Clallam	0	0	0	0.0	A
Clark	4	0	0	1.3	C
King	12	6	0	7.0	F
Kitsap	DNC	DNC	DNC	DNC	DNC
Kittitas	DNC	DNC	DNC	DNC	DNC
Okanogan	DNC	DNC	DNC	DNC	DNC
Pierce	4	0	0	1.3	C
Skagit	0	0	0	0.0	A
Snohomish	DNC	DNC	DNC	DNC	DNC
Spokane	5	0	0	1.7	C
Stevens	DNC	DNC	DNC	DNC	DNC
Thurston	2	1	0	1.2	C
Whatcom	2	0	0	0.7	B
Yakima	DNC	DNC	DNC	DNC	DNC

	HIGH PARTICLE POLLUTION DAYS 2016–2018							
	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Benton	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Chelan	INC	INC	INC	INC	INC	INC	INC	INC
Clallam	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Clark	9	3	0	0	4.5	F	7.5	PASS
King	11	7	0	0	7.2	F	8.4	PASS
Kitsap	6	3	0	0	3.5	F	4.6	PASS
Kittitas	17	6	2	0	10.0	F	8.1	PASS
Okanogan	7	22	1	1	14.8	F	INC	INC
Pierce	9	9	0	0	7.5	F	7.7	PASS
Skagit	3	3	0	0	2.5	D	5.8	PASS
Snohomish	21	7	0	0	10.5	F	7.4	PASS
Spokane	13	7	4	0	10.5	F	9.6	PASS
Stevens	INC	INC	INC	INC	INC	INC	INC	INC
Thurston	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Whatcom	6	3	0	0	3.5	F	5.1	PASS
Yakima	25	15	3	0	17.8	F	9.8	PASS

WEST VIRGINIA

American Lung Association in West Virginia

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Berkeley	117,123	27,230	17,175	2,564	11,106	13,146	90	12,598	44,556	13,275	18,798
Brooke	22,203	3,930	5,290	370	2,254	2,944	17	3,065	9,087	2,930	960
Cabell	93,224	18,395	17,542	1,732	9,088	10,935	71	10,978	36,949	17,242	9,240
Gilmer	8,026	1,150	1,405	108	832	963	6	942	3,388	1,521	1,521
Greenbrier	34,786	6,747	8,099	635	3,462	4,526	27	4,707	13,947	5,389	2,629
Hancock	29,094	5,507	6,722	518	2,928	3,844	22	3,977	11,751	3,788	1,887
Harrison	67,554	14,434	13,140	1,359	6,564	8,245	52	8,303	26,388	11,089	3,999
Kanawha	180,454	36,012	37,272	3,390	17,804	22,511	138	22,891	71,723	30,248	22,283
Marion	56,097	11,260	10,963	1,060	5,486	6,757	43	6,819	22,200	9,084	3,920
Marshall	30,785	5,950	6,886	560	3,077	3,999	24	4,117	12,362	4,200	1,036
Monongalia	106,420	17,326	13,448	1,631	10,630	11,212	82	10,415	43,605	18,156	12,690
Ohio	41,755	7,937	9,105	747	4,149	5,265	32	5,413	16,774	4,953	3,266
Tucker	6,955	1,077	1,821	101	729	978	5	1,030	2,930	907	192
Wood	84,203	17,621	17,209	1,659	8,236	10,477	64	10,640	33,099	12,449	4,141
Totals	**878,679**	**174,576**	**166,077**	**16,436**	**86,344**	**105,803**	**672**	**105,894**	**348,757**	**135,231**	**86,562**

WEST VIRGINIA

American Lung Association in West Virginia

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Berkeley	1	0	0	0.3	B	0	0	0	0	0.0	A	8.4	PASS
Brooke	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	8.9	PASS
Cabell	3	0	0	1.0	C	0	0	0	0	0.0	A	7.9	PASS
Gilmer	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Greenbrier	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Hancock	1	0	0	0.3	B	0	0	0	0	0.0	A	8.1	PASS
Harrison	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.4	PASS
Kanawha	4	0	0	1.3	C	0	0	0	0	0.0	A	8.0	PASS
Marion	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	INC	INC
Marshall	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	9.1	PASS
Monongalia	0	0	0	0.0	A	0	0	0	0	0.0	A	7.2	PASS
Ohio	4	0	0	1.3	C	0	0	0	0	0.0	A	7.9	PASS
Tucker	1	0	0	0.3	B	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Wood	1	0	0	0.3	B	0	0	0	0	0.0	A	7.9	PASS

WISCONSIN

American Lung Association in Wisconsin

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Ashland	15,600	3,409	3,055	288	1,106	688	9	1,008	5,289	2,356	2,770
Brown	263,378	62,704	39,133	5,291	18,474	10,344	155	14,360	85,354	21,944	50,989
Columbia	57,358	12,182	10,250	1,028	4,125	2,509	34	3,570	19,536	4,255	4,325
Dane	542,364	110,624	74,433	9,334	39,978	20,486	320	28,078	180,405	57,062	112,124
Dodge	87,847	17,436	15,497	1,471	6,440	3,857	52	5,459	30,355	7,283	9,064
Door	27,610	4,489	8,215	379	2,040	1,508	16	2,383	10,381	2,289	1,729
Eau Claire	104,534	21,327	16,374	1,800	7,656	4,078	62	5,768	34,984	12,906	10,793
Fond du Lac	103,066	22,030	19,083	1,859	7,382	4,488	61	6,473	35,010	9,513	11,054
Forest	8,991	1,751	2,064	148	651	435	5	652	3,186	1,294	1,912
Grant	51,554	10,762	8,895	908	3,733	2,096	31	3,020	17,323	6,595	2,645
Jefferson	85,129	17,958	14,436	1,515	6,152	3,632	50	5,123	28,874	6,701	8,972
Kenosha	169,290	38,674	23,925	3,263	12,062	6,735	100	9,173	55,586	19,819	41,338
Kewaunee	20,383	4,385	4,168	370	1,448	930	12	1,366	6,989	1,472	1,176
La Crosse	118,230	23,386	19,399	1,973	8,710	4,767	70	6,773	40,093	12,334	12,189
Manitowoc	79,074	16,260	16,193	1,372	5,689	3,654	47	5,346	27,450	8,124	7,699
Marathon	135,428	30,846	23,980	2,603	9,542	5,763	80	8,252	45,138	10,027	15,552
Milwaukee	948,201	227,422	129,003	19,190	66,630	35,206	558	48,385	303,032	177,263	464,911
Outagamie	187,365	44,129	27,589	3,724	13,195	7,426	111	10,252	61,012	13,196	23,793
Ozaukee	89,147	18,995	17,603	1,603	6,365	4,025	53	5,862	30,559	3,674	7,944
Racine	196,584	45,351	32,460	3,827	13,852	8,200	116	11,550	65,051	24,084	55,689
Rock	163,129	37,701	27,022	3,181	11,486	6,747	96	9,539	53,847	17,477	28,620
Sauk	64,249	14,644	11,900	1,236	4,514	2,766	38	4,005	21,463	5,416	5,915
Sheboygan	115,456	25,431	20,789	2,146	8,211	4,980	68	7,138	38,889	8,432	18,681
Taylor	20,412	4,776	3,905	403	1,419	905	12	1,312	6,826	2,072	929
Vilas	21,938	3,711	6,758	313	1,602	1,230	13	1,949	8,256	2,359	3,337
Walworth	103,718	21,406	18,334	1,806	7,523	4,444	61	6,344	35,358	10,114	15,220
Waukesha	403,072	86,695	75,190	7,315	28,805	17,877	238	25,691	137,354	19,937	47,618
Totals	**4,183,107**	**928,484**	**669,653**	**78,344**	**298,787**	**169,775**	**2,467**	**238,831**	**1,387,600**	**467,998**	**966,988**

WISCONSIN

American Lung Association in Wisconsin

	HIGH OZONE DAYS 2016–2018					HIGH PARTICLE POLLUTION DAYS 2016–2018							
						24-Hour						Annual	
County	Orange	Red	Purple	Wgt. Avg.	Grade	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Ashland	0	0	0	0.0	A	0	0	0	0	0.0	A	4.2	PASS
Brown	4	0	0	1.3	C	0	0	0	0	0.0	A	6.4	PASS
Columbia	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Dane	1	0	0	0.3	B	1	0	0	0	0.3	B	8.1	PASS
Dodge	5	0	0	1.7	C	2	0	0	0	0.7	B	6.8	PASS
Door	15	0	0	5.0	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Eau Claire	1	0	0	0.3	B	0	0	0	0	0.0	A	6.8	PASS
Fond du Lac	4	0	0	1.3	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Forest	0	0	0	0.0	A	0	0	0	0	0.0	A	4.2	PASS
Grant	DNC	DNC	DNC	DNC	DNC	0	0	0	0	0.0	A	7.3	PASS
Jefferson	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Kenosha	34	5	0	13.8	F	0	0	0	0	0.0	A	7.1	PASS
Kewaunee	11	1	0	4.2	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
La Crosse	0	0	0	0.0	A	0	0	0	0	0.0	A	6.8	PASS
Manitowoc	16	2	0	6.3	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Marathon	0	0	0	0.0	A	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Milwaukee	15	2	0	6.0	F	0	0	0	0	0.0	A	8.0	PASS
Outagamie	3	0	0	1.0	C	0	0	0	0	0.0	A	6.3	PASS
Ozaukee	21	3	0	8.5	F	0	0	0	0	0.0	A	6.3	PASS
Racine	28	3	0	10.8	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Rock	6	0	0	2.0	C	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Sauk	2	0	0	0.7	B	0	0	0	0	0.0	A	6.5	PASS
Sheboygan	32	4	0	12.7	F	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Taylor	0	0	0	0.0	A	0	0	0	0	0.0	A	5.5	PASS
Vilas	0	0	0	0.0	A	0	0	0	0	0.0	A	4.5	PASS
Walworth	7	0	0	2.3	D	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Waukesha	3	0	0	1.0	C	0	0	0	0	0.0	A	8.3	PASS

WYOMING

American Lung Association in Wyoming

				AT-RISK GROUPS							
				Lung Diseases							
County	Total Population	Under 18	65 & Over	Pediatric Asthma	Adult Asthma	COPD	Lung Cancer	Heart Disease	Ever Smoked	Poverty	People of Color
Albany	38,601	6,287	4,530	540	2,795	1,629	17	2,041	14,217	7,451	6,920
Big Horn	11,881	3,003	2,495	258	773	650	5	843	4,060	1,519	1,463
Campbell	46,140	12,611	4,642	1,083	2,912	1,944	21	2,333	14,942	4,200	5,814
Carbon	14,971	3,419	2,563	294	1,005	766	7	969	5,222	1,894	3,412
Converse	13,640	3,354	2,267	288	895	699	6	876	4,662	1,287	1,571
Fremont	39,531	10,104	7,222	868	2,561	2,041	18	2,605	13,369	6,070	12,039
Goshen	13,376	2,685	2,934	231	931	769	6	997	4,878	1,567	1,952
Johnson	8,460	1,854	2,004	159	576	506	4	659	3,038	859	737
Laramie	98,976	23,032	15,864	1,979	6,600	4,891	45	6,161	34,216	8,839	21,278
Natrona	79,115	19,040	12,180	1,636	5,222	3,850	36	4,826	27,052	7,677	10,602
Park	29,324	6,039	6,805	519	2,028	1,733	13	2,256	10,669	2,921	2,664
Sheridan	30,233	6,462	6,347	555	2,069	1,704	14	2,196	10,842	2,551	2,575
Sublette	9,813	2,209	1,911	190	662	540	4	688	3,464	658	1,077
Sweetwater	43,051	11,290	5,214	970	2,759	1,909	19	2,338	14,206	3,540	8,906
Teton	23,081	4,239	3,558	364	1,637	1,177	10	1,464	8,461	1,443	4,269
Uinta	20,299	5,844	2,858	502	1,257	933	9	1,161	6,514	2,010	2,558
Weston	6,967	1,447	1,429	124	481	401	3	511	2,522	777	700
Totals	**527,459**	**122,919**	**84,823**	**10,561**	**35,162**	**26,143**	**238**	**32,923**	**182,333**	**55,263**	**88,537**

WYOMING

American Lung Association in Wyoming

	HIGH OZONE DAYS 2016–2018				
County	Orange	Red	Purple	Wgt. Avg.	Grade
Albany	4	0	0	1.3	C
Big Horn	0	0	0	0.0	A
Campbell	2	0	0	0.7	B
Carbon	0	0	0	0.0	A
Converse	0	0	0	0.0	A
Fremont	0	0	0	0.0	A
Goshen	INC	INC	INC	INC	INC
Johnson	INC	INC	INC	INC	INC
Laramie	1	0	0	0.3	B
Natrona	0	0	0	0.0	A
Park	INC	INC	INC	INC	INC
Sheridan	INC	INC	INC	INC	INC
Sublette	7	0	0	2.3	D
Sweetwater	2	0	0	0.7	B
Teton	0	0	0	0.0	A
Uinta	1	0	0	0.3	B
Weston	1	0	0	0.3	B

	HIGH PARTICLE POLLUTION DAYS 2016–2018							
	24-Hour						Annual	
County	Orange	Red	Purple	Maroon	Wgt. Avg.	Grade	Design Value	Pass/ Fail
Albany	0	1	0	0	0.5	B	4.6	PASS
Big Horn	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Campbell	3	3	0	0	2.5	D	4.5	PASS
Carbon	INC	INC	INC	INC	INC	INC	INC	INC
Converse	1	0	0	0	0.3	B	INC	INC
Fremont	2	0	0	0	0.7	B	7.2	PASS
Goshen	INC	INC	INC	INC	INC	INC	INC	INC
Johnson	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Laramie	1	2	0	0	1.3	C	4.4	PASS
Natrona	2	0	0	0	0.7	B	5.0	PASS
Park	2	0	0	0	0.7	B	4.3	PASS
Sheridan	4	1	0	0	1.8	C	7.2	PASS
Sublette	2	0	0	0	0.7	B	5.3	PASS
Sweetwater	0	0	0	0	0.0	A	5.3	PASS
Teton	2	0	0	0	0.7	B	4.8	PASS
Uinta	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC
Weston	INC	INC	INC	INC	INC	INC	INC	INC

About the American Lung Association

The American Lung Association is the leading organization working to save lives by improving lung health and preventing lung disease through education, advocacy and research. The work of the American Lung Association is focused on four strategic imperatives: to defeat lung cancer; to champion clean air for all; to improve the quality of life for those with lung disease and their families; and to create a tobacco-free future. For more information about the American Lung Association, a holder of the coveted 4-star rating from Charity Navigator and a Gold-Level GuideStar Member, or to support the work it does, call 1-800-LUNGUSA (1-800-586-4872) or visit: Lung.org.

American Lung Association®

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 29

8-Hour Ozone (2015) Nonattainment Areas

Data is current as of April 30, 2020

EXTREME
Los Angeles-South Coast Air Basin, CA
San Joaquin Valley, CA

SEVERE 15
Los Angeles-San Bernardino Counties (West Mojave Desert), CA
Riverside County (Coachella Valley), CA

SERIOUS
Morongo Band of Mission Indians, CA
Ventura County, CA

MODERATE
Kern County (Eastern Kern), CA
Nevada County (Western part), CA
New York-Northern New Jersey-Long Island, NY-NJ-CT
Sacramento Metro, CA
San Diego County, CA

MARGINAL
Allegan County, MI
Amador County, CA
Atlanta, GA
Baltimore, MD
Berrien County, MI
Butte County, CA
Calaveras County, CA
Chicago, IL-IN-WI
Cincinnati, OH-KY
Cleveland, OH
Dallas-Fort Worth, TX
Denver Metro/North Front Range, CO
Detroit, MI
Dona Ana County (Sunland Park Area), NM
Greater Connecticut, CT
Houston-Galveston-Brazoria, TX
Imperial County, CA
Las Vegas, NV
Louisville, KY-IN
Manitowoc County, WI
Mariposa County, CA
Muskegon County, MI
Northern Milwaukee/Ozaukee Shoreline, WI
Northern Wasatch Front, UT
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE
Phoenix-Mesa, AZ
San Antonio, TX

San Francisco Bay Area, CA
San Luis Obispo (Eastern part), CA
Sheboygan County, WI
Southern Wasatch Front, UT
St. Louis, MO-IL
Sutter Buttes, CA
Tuolumne County, CA
Uinta Basin, UT
Washington, DC-MD-VA
Yuma, AZ

MARGINAL (RURAL TRANSPORT)
Door County, WI
Tuscan Buttes, CA

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2020-04-30

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EXHIBIT 30

Status of SIP Required Elements for California Designated Areas

Required Elements by NAAQS / Area
As of 05/28/2020

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California: CO (1971) / Bakersfield Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305

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California: CO (1971) / Chico Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15305

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California: CO (1971) / Fresno Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO Attainment Plan	11/15/1992	05/15/1993	Approval	06/01/1998	63 FR 15305
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	12/28/1992	Approval	06/01/1998	63 FR 15305
CO Nonattainment NSR	11/15/1992		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15305
VMT Forecast	11/15/1992	06/25/1995	Approval	06/01/1998	63 FR 15304

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California: CO (1971) / Lake Tahoe South Shore Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	05/15/1993	Approval	06/01/1998	63 FR 15304
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15305

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California: CO (1971) / Los Angeles-South Coast Air Basin Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice

CO Attainment Plan	11/15/1992	02/05/1997	Approval	05/21/1998	63 FR 19661
CO contingency measures	11/15/1993	02/05/1997	Approval	06/11/2007	72 FR 26718
CO Emissions Inventory	11/15/1992	02/05/1997	Approval	05/21/1998	63 FR 19661
CO Nonattainment NSR	11/15/1992	08/28/1996	Approval	01/03/1997	61 FR 64291
Oxygenated fuels	11/15/1992	10/30/1992	Approval	09/21/1995	60 FR 43379
TCM to offset growth	11/15/1992	04/18/1994	Approval	06/11/2007	72 FR 26718
VMT Forecast	11/15/1992	02/05/1997	Approval	05/21/1998	63 FR 19661

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California: CO (1971) / Modesto Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	05/15/1993	Approval	06/01/1998	63 FR 15304
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15305

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California: CO (1971) / Sacramento Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	06/30/1995	Approval	06/01/1998	63 FR 15304
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15305

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California: CO (1971) / San Diego Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15305

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California: CO (1971) / San Francisco-Oakland-San Jose Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15304

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California: CO (1971) / Stockton Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
CO contingency measures	11/15/1993	06/30/1995	Approval	06/01/1998	63 FR 15305
CO Emissions Inventory	11/15/1992	06/30/1995	Approval	06/01/1998	63 FR 15304
CO Nonattainment NSR	11/15/1993		Redesignation approved	06/01/1998	63 FR 15305
Oxygenated fuels	11/15/1992	10/30/1992	Approval	06/01/1998	63 FR 15305

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California: Lead (2008) / Los Angeles County-South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Lead Attainment Demonstration	06/30/2012	06/20/2012	Approval	04/11/2014	79 FR 13875
Lead Contingency Measures	06/30/2012	06/20/2012	Approval	04/11/2014	79 FR 13875
Emission Inventory	06/30/2012	06/20/2012	Approval	04/11/2014	79 FR 13875
Lead Nonattainment NSR	06/30/2012	06/20/2012	Approval	04/11/2014	79 FR 13875
Lead RACM/RACT	06/30/2012	06/20/2012	Approval	04/11/2014	79 FR 13875
Lead RFP	06/30/2012	06/20/2012	Approval	04/11/2014	79 FR 13875

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California: Ozone-1Hr (1979) / Chico Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Nonattainment NSR rules	11/15/1992	05/13/1993	Completeness	07/19/1993	
RACT NOX for Major Sources	11/15/1992				

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California: Ozone-1Hr (1979) / East Kern County Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	11/15/1992	11/07/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	11/15/1994		Approval	06/21/2004	69 FR 21731
Emission Inventory	11/15/1992	03/30/1995	Approval	02/07/1997	62 FR 1150
Emission Statement	11/15/1992	01/11/1993	Approval	07/26/2004	69 FR 29880
Enhanced Monitoring (PAMS)	See Note	11/10/1993	Redesignation approved	06/21/2004	69 FR 21731
Nonattainment NSR rules	11/15/1992	02/11/1994	Approval	06/21/2004	69 FR 21731
Ozone Attainment Plan UAM	11/15/1994	11/15/1994	Approval	02/07/1997	62 FR 1187
RACT Catch-ups	11/15/1992	07/13/1994	Approval	08/13/1995	60 FR 31081
RACT Fix-ups [CA Rule 4403]	11/15/1991	02/24/1995	Approval	03/11/1996	61 FR 3579
RACT Fix-ups [CA Rule 4603]	11/15/1991	11/18/1993	Approval	12/01/1994	59 FR 61545
RACT Fix-ups [CA Rule 4607]	11/15/1991	07/13/1994	Approval	10/08/1995	60 FR 46535
RACT Non-CTG VOC for Major Sources	11/15/1992	07/13/1994	Approval	06/13/1995	60 FR 31086
RACT NOX for Major Sources	11/15/1992	10/19/1994	Approval	09/20/1999	64 FR 38833
RACT VOC CTG Aerospace	11/15/1994	03/10/1998	Approval	08/17/1998	63 FR 43881
RACT VOC CTG Clean-up Solvents	11/15/1994	01/28/1992	Approval	01/12/1995	59 FR 64132
RACT VOC CTG Industrial Wastewater	11/15/1994		Approval	06/21/2004	69 FR 21731
RACT VOC CTG Offset Lithography	11/15/1994	07/13/1994	Approval	10/10/1995	60 FR 46535
RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994		Approval	06/21/2004	69 FR 21731
RACT VOC CTG Plastic Parts (Other)	11/15/1994		Approval	06/21/2004	69 FR 21731
RACT VOC CTG Shipbuilding/repair	11/15/1994		Approval	06/21/2004	69 FR 21731
RACT VOC CTG SOCMI Batch	11/15/1994		Approval	06/21/2004	69 FR 21731
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995		Approval	06/21/2004	69 FR 21731
RACT VOC CTG VOL Storage	11/15/1994	01/28/1992	Approval	06/14/1993	58 FR 28354
RACT VOC CTG Wood Furniture	11/15/1994	02/16/1999	Approval	06/21/2004	69 FR 21731
Stage II or Equivalent	11/15/1992	05/24/1994	Approval	07/01/1996	61 FR 19555
VOC 15% Plan	11/15/1993	11/15/1994	Approval	02/07/1997	62 FR 1187
VOC-NOX Post96 Rate of Progress	11/15/1994	12/29/1994	Approval	02/07/1997	62 FR 1150

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California: Ozone-1Hr (1979) / Imperial County Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Nonattainment NSR rules	11/15/1992	10/13/1995	Completeness	11/28/1995	
RACT NOX for Major Sources	11/15/1992				

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California: Ozone-1Hr (1979) / Los Angeles-South Coast Air Basin Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	11/15/1994				
Emission Inventory	11/15/1992	03/30/1995	Approval	02/07/1997	62 FR 1150
Emission Statement	11/15/1992	11/18/1993	Completeness	12/27/1993	
Employee Commute Opt Trip Red.	11/15/1992	11/13/1992	Approval	09/27/1999	64 FR 46849
Enhanced Monitoring (PAMS)	See Note	11/10/1993	Approval	10/30/2017	82 FR 45191
Nonattainment NSR rules	11/15/1992	08/28/1996	Approval	02/03/1997	61 FR 64291
Ozone Attainment Plan UAM	11/15/1994	11/15/1994	Approval	10/31/2019	84 FR 52005
RACT Fix-ups [CA Rule 109]	11/15/1991	05/24/1994	Approval	05/15/1995	60 FR 18750
RACT Fix-ups [CA Rule 1106]	11/15/1991	02/24/1995	Approval	07/14/1995	60 FR 36227
RACT Fix-ups [CA Rule 1107]	11/15/1991	06/16/1995	Approval	07/14/1995	60 FR 36227
RACT Fix-ups [CA Rule 1115]	11/15/1991	06/16/1995	Approval	07/14/1995	60 FR 36227
RACT Fix-ups [CA Rule 1125]	11/15/1991	02/24/1995	Approval	08/14/1995	60 FR 31081
RACT Fix-ups [CA Rule 1126]	11/15/1991	02/24/1995	Approval	08/14/1995	60 FR 31081
RACT Fix-ups [CA Rule 1130]	11/15/1991	05/24/1994	Approval	10/31/1995	60 FR 55312
RACT Fix-ups [CA Rule 1136]	11/15/1991	05/24/1994	Approval	10/31/1995	60 FR 55312
RACT Fix-ups [CA Rule 1151]	11/15/1991	01/24/1995	Approval	08/14/1995	60 FR 31081
RACT Fix-ups [CA Rule 1153]	11/15/1991	02/24/1995	Approval	09/07/1995	60 FR 40285
RACT Fix-ups [CA Rule 1162]	07/20/1994	05/24/1994	Approval	10/24/1995	60 FR 43751
RACT Fix-ups [CA Rule 1164]	11/15/1991	02/24/1995	Approval	03/11/1996	61 FR 3579
RACT Fix-ups [CA Rule 1171]	11/15/1991	06/16/1995	Approval	07/14/1995	60 FR 36227
RACT Fix-ups [CA Rule 1173]	07/20/1994	05/24/1994	Approval	10/24/1994	59 FR 43751
RACT Fix-ups [CA Rule 1175]	07/20/1994	05/24/1994	Approval	10/24/1994	59 FR 43751
RACT Fix-ups [CA Rule 1176]	07/20/1994	05/24/1994	Approval	10/24/1994	59 FR 43751
RACT Non-CTG VOC for Major Sources	11/15/1992	02/24/1995	Approval	06/13/1995	60 FR 31081
RACT NOX for Major Sources	11/15/1992	10/19/1994	Approval	12/09/1996	61 FR 57775
RACT VOC CTG Aerospace	11/15/1994	02/24/1995	Approval	07/05/1996	61 FR 20136
RACT VOC CTG Clean-up Solvents	11/15/1994	06/16/1995	Approval	07/14/1995	60 FR 36227
RACT VOC CTG Industrial Wastewater	11/15/1994	11/26/1996	Approval	12/06/2002	67 FR 62376
RACT VOC CTG Offset Lithography	11/15/1994	10/13/1995	Approval	01/02/1996	60 FR 55312
RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994	08/01/1997	Approval	07/06/1999	64 FR 23774
RACT VOC CTG Plastic Parts (Other)	11/15/1994	08/01/1997	Approval	07/06/1999	64 FR 23774
RACT VOC CTG Shipbuilding/repair	11/15/1994	02/24/1995	Approval	07/14/1995	60 FR 36227
RACT VOC CTG SOCMI Batch	11/15/1994				
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995				
RACT VOC CTG VOL Storage	11/15/1994	05/24/1994	Approval	12/23/1996	61 FR 54941
RACT VOC CTG Wood Furniture	11/15/1994	10/13/1995	Approval	01/02/1996	60 FR 55312
Severe/Extreme Area Fee Program (Section 185)	12/31/2000	04/22/2011	Approval	01/14/2013	77 FR 74372
Stage II or Equivalent	11/15/1992	12/31/1990	Approval	09/16/1994	59 FR 42164
VMT - TCMs to Offset Growth	11/15/1992	04/18/1994	Approval	10/03/2014	79 FR 52539
VOC 15% Plan	11/15/1993	12/29/1994	Approval	02/07/1997	62 FR 1150
VOC-NOX Post96 Rate of Progress	11/15/1994	12/29/1994	Approval	02/07/1997	62 FR 1150
VOC-NOX Post99 Rate of Progress	See Note	12/29/1994	Approval	02/07/1997	62 FR 1150

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California: Ozone-1Hr (1979) / Monterey Bay Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	11/15/1994	11/14/1994	Approval	03/18/1997	62 FR 2586
Emission Inventory	11/15/1992	03/30/1995	Approval	03/18/1997	62 FR 2586
Emission Statement	11/15/1992	11/18/1993	Approval	03/18/1997	62 FR 2597
Nonattainment NSR rules	11/15/1992	05/10/1996	Approval	08/11/1996	61 FR 36501
Ozone Attainment Plan UAM	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597
RACT Fix-ups	11/15/1991	11/18/1993	Approval	02/15/1995	60 FR 8565
RACT Non-CTG VOC for Major Sources	11/15/1992	09/28/1994	Approval	04/12/1996	61 FR 5288
RACT NOX for Major Sources	11/15/1992	09/28/1994	Approval	04/12/1995	60 FR 20233
RACT VOC CTG Aerospace	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597
RACT VOC CTG Clean-up Solvents	11/15/1994	09/28/1994	Approval	04/12/1996	61 FR 5288
RACT VOC CTG Industrial Wastewater	11/15/1994	11/18/1993	Approval	04/09/1996	61 FR 4890
RACT VOC CTG Offset Lithography	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597

RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597
RACT VOC CTG Plastic Parts (Other)	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597
RACT VOC CTG Shipbuilding/repair	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597
RACT VOC CTG SOCMI Batch	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995		Redesignation approved	03/18/1997	62 FR 2597
RACT VOC CTG VOL Storage	11/15/1994	11/18/1993	Approval	03/17/1995	60 FR 8565
RACT VOC CTG Wood Furniture	11/15/1994		Redesignation approved	03/18/1997	62 FR 2597
VOC 15% Plan	11/15/1993	11/15/1993	Approval	05/10/1995	

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California: Ozone-1Hr (1979) / Sacramento Metro Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	11/15/1992	11/07/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	11/15/1994		Approval	11/19/2012	77 FR 64036
Emission Inventory	11/15/1992	03/30/1995	Approval	02/07/1997	62 FR 1150
Emission Statement	11/15/1992	11/18/1993	Approval	07/26/2004	69 FR 29880
Enhanced Monitoring (PAMS)	See Note	11/10/1993	Approval	10/30/2017	82 FR 45191
Nonattainment NSR rules	11/15/1992	09/01/1994	Approval	06/19/1985	50 FR 25417
Ozone Attainment Plan UAM	11/15/1994	12/29/1994	Approval	02/07/1997	62 FR 1150
RACT Catch-ups	11/15/1992	07/13/1994	Approval	03/01/1995	60 FR 5581
RACT Fix-ups [CA Rule 212]	11/15/1991	12/19/1994	Approval	10/08/1995	
RACT Fix-ups [CA Rule 223]	11/15/1991	11/30/1994	Approval	04/24/1995	60 FR 15241
RACT Fix-ups [CA Rule 410]	11/15/1991	12/19/1994	Approval	04/24/1995	60 FR 15241
RACT Fix-ups [CA Rule 442]	11/15/1991	03/29/1994	Approval	11/15/1994	59 FR 47544
RACT Fix-ups [CA Rule 443]	11/15/1991	03/29/1994	Approval	11/15/1994	59 FR 47544
RACT Fix-ups [CA Rule 446]	11/15/1991	03/29/1994	Approval	11/15/1994	59 FR 47544
RACT Fix-ups [CA Rule 447]	11/15/1991	03/29/1994	Approval	11/15/1994	59 FR 47544
RACT Fix-ups [CA Rule 452]	11/15/1991	03/29/1994	Approval	11/15/1994	59 FR 47544
RACT Non-CTG VOC for Major Sources	11/15/1992	07/13/1994	Approval	12/14/1994	59 FR 64336
RACT NOX for Major Sources	11/15/1992	10/20/1994	Approval	12/31/1996	61 FR 56472
RACT VOC CTG Aerospace [El Dorado]	11/15/1994				
RACT VOC CTG Aerospace [Placer]	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50766
RACT VOC CTG Aerospace [Sacramento]	11/15/1994	04/06/1993	Approval	05/06/1994	59 FR 16139
RACT VOC CTG Aerospace [Yolo-Solano]	11/15/1994				
RACT VOC CTG Clean-up Solvents [El Dorado]	11/15/1994	11/30/1994	Approval	07/01/1996	61 FR 18962
RACT VOC CTG Clean-up Solvents [Placer]	11/15/1994	10/13/1995	Approval	07/01/1996	61 FR 18962
RACT VOC CTG Clean-up Solvents [Sacramento]	11/15/1994	04/06/1993	Approval	09/06/1994	59 FR 39691
RACT VOC CTG Clean-up Solvents [Yolo-Solano]	11/15/1994	11/30/1994	Approval	07/01/1996	61 FR 18962
RACT VOC CTG Industrial Wastewater [El Dorado]	11/15/1994				
RACT VOC CTG Industrial Wastewater [Placer]	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50769
RACT VOC CTG Industrial Wastewater [Sacramento]	11/15/1994				
RACT VOC CTG Industrial Wastewater [Yolo-Solano]	11/15/1994				
RACT VOC CTG Offset Lithography [El Dorado]	11/15/1994	11/30/1994	Approval	08/12/1996	61 FR 29659
RACT VOC CTG Offset Lithography [Placer]	11/15/1994	10/13/1995	Approval	08/12/1996	61 FR 29659
RACT VOC CTG Offset Lithography [Sacramento]	11/15/1994	04/06/1993	Approval	11/03/1994	59 FR 50498
RACT VOC CTG Offset Lithography [Yolo-Solano]	11/15/1994	11/30/1994	Approval	10/20/1998	63 FR 44792
RACT VOC CTG Plastic Parts (Business Machine) [El Dorado]	11/15/1994				
RACT VOC CTG Plastic Parts (Business Machine) [Placer]	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50766
RACT VOC CTG Plastic Parts (Business Machine) [Sacramento]	11/15/1994	06/06/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG Plastic Parts (Business Machine) [Yolo-Solano]	11/15/1994				
RACT VOC CTG Plastic Parts (Other) [El Dorado]	11/15/1994				
RACT VOC CTG Plastic Parts (Other) [Placer]	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50766
RACT VOC CTG Plastic Parts (Other) [Sacramento]	11/15/1994	06/06/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG Plastic Parts (Other) [Yolo-Solano]	11/15/1994				
RACT VOC CTG Shipbuilding/repair [El Dorado]	11/15/1994				
RACT VOC CTG Shipbuilding/repair [Placer]	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50766
RACT VOC CTG Shipbuilding/repair [Sacramento]	11/15/1994				
RACT VOC CTG Shipbuilding/repair [Yolo-Solano]	11/15/1994				
RACT VOC CTG SOCMI Batch [El Dorado]	11/15/1994				
RACT VOC CTG SOCMI Batch [Placer]	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50766
RACT VOC CTG SOCMI Batch [Sacramento]	11/15/1994				
RACT VOC CTG SOCMI Batch [Yolo-Solano]	11/15/1994				
RACT VOC CTG SOCMI Distillation and Reactor Processes [El Dorado]	03/23/1995				

RACT VOC CTG SOCMI Distillation and Reactor Processes [Placer]	03/23/1995	02/25/1998	Approval	11/23/1998	63 FR 50766
RACT VOC CTG SOCMI Distillation and Reactor Processes [Sacramento]	03/23/1995				
RACT VOC CTG SOCMI Distillation and Reactor Processes [Yolo-Solano]	03/23/1995				
RACT VOC CTG VOL Storage [El Dorado]	11/15/1994	03/29/1994	Approval	09/16/1994	59 FR 47544
RACT VOC CTG VOL Storage [Placer]	11/15/1994	10/13/1995	Approval	07/05/1996	61 FR 20145
RACT VOC CTG VOL Storage [Sacramento]	11/15/1994	03/29/1994	Approval	11/15/1994	59 FR 47544
RACT VOC CTG VOL Storage [Yolo-Solano]	11/15/1994	11/30/1994	Approval	10/30/1995	60 FR 43383
RACT VOC CTG Wood Furniture [El Dorado]	11/15/1994	10/13/1995	Approval	09/16/1996	61 FR 37390
RACT VOC CTG Wood Furniture [Placer]	11/15/1994	05/24/1995	Approval	07/01/1996	61 FR 18962
RACT VOC CTG Wood Furniture [Sacramento]	11/15/1994				
RACT VOC CTG Wood Furniture [Yolo-Solano]	11/15/1994				
Severe/Extreme Area Fee Program (Section 185) [El Dorado]	12/31/2000		Proposed Termination	05/18/2011	76 FR 28696
Severe/Extreme Area Fee Program (Section 185) [Placer]	12/31/2000		Proposed Termination	05/18/2011	76 FR 28696
Severe/Extreme Area Fee Program (Section 185) [Sacramento]	12/31/2000	12/12/2002	Proposed Termination	05/18/2011	76 FR 28696
Severe/Extreme Area Fee Program (Section 185) [Sutter]	12/31/2000		Proposed Termination	05/18/2011	76 FR 28696
Severe/Extreme Area Fee Program (Section 185) [Yolo-Solano]	12/31/2000		Proposed Termination	05/18/2011	76 FR 28696
Stage II or Equivalent	11/15/1992	08/10/1995	Approval	01/23/1996	61 FR 1716
VOC 15% Plan	11/15/1993	12/28/1994	Approval	02/07/1997	62 FR 1150
VOC-NOX Post96 Rate of Progress	11/15/1994	12/29/1994	Approval	02/07/1997	62 FR 1150
VOC-NOX Post99 Rate of Progress	See Note		Approval	11/19/2012	77 FR 64036

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California: Ozone-1Hr (1979) / San Diego Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	11/15/1992	11/07/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	11/15/1994		Approval	07/28/2003	
Emission Inventory	11/15/1992	03/30/1995	Approval	02/07/1997	62 FR 1159
Emission Statement	11/15/1992	11/18/1993	Approval	05/08/2000	65 FR 12472
Enhanced Monitoring (PAMS)	See Note	11/10/1993	Approval	10/30/2017	82 FR 45191
Nonattainment NSR rules	11/15/1992	07/13/1994	Approval	05/08/2000	65 FR 12472
Ozone Attainment Plan UAM	11/15/1994	11/15/1994	Approval	02/07/1997	62 FR 1150
RACT Catch-ups	11/15/1992	06/16/1995	Approval	03/11/1996	61 FR 4892
RACT Fix-ups [CA Rule 61.01]	11/15/1991	01/24/1995	Approval	09/07/1995	60 FR 40285
RACT Fix-ups [CA Rule 61.09]	07/20/1994	05/24/1994	Approval	10/28/1994	59 FR 44322
RACT Fix-ups [CA Rule 67.03]	12/11/1994	11/23/1994	Approval	06/01/1995	60 FR 21455
RACT Fix-ups [CA Rule 67.04]	12/11/1994	10/19/1994	Approval	04/24/1995	60 FR 15241
RACT Fix-ups [CA Rule 67.10]	11/15/1991	08/01/1997	Approval	10/10/1997	62 FR 52946
RACT Fix-ups [CA Rule 67.12]	01/14/1995	11/18/1993	Approval	02/06/1995	60 FR 2025
RACT Fix-ups [CA Rule 67.16]	12/11/1994	10/19/1994	Approval	10/08/1995	60 FR 46536
RACT Fix-ups [CA Rule 67.18]	02/09/1995	12/24/1994	Approval	10/08/1995	60 FR 46536
RACT Non-CTG VOC for Major Sources	11/15/1992	07/13/1994	Approval	04/15/1996	61 FR 5701
RACT NOX for Major Sources	11/15/1992	10/19/1994	Approval	05/09/1996	61 FR 15719
RACT VOC CTG Aerospace	11/15/1994	08/01/1997	Approval	06/22/1998	63 FR 33854
RACT VOC CTG Clean-up Solvents	11/15/1994	04/05/1991	Approval	01/12/1995	59 FR 64131
RACT VOC CTG Industrial Wastewater	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50764
RACT VOC CTG Offset Lithography	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50764
RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50764
RACT VOC CTG Plastic Parts (Other)	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50764
RACT VOC CTG Shipbuilding/repair	11/15/1994	12/22/1994	Approval	10/10/1995	60 FR 46535
RACT VOC CTG SOCMI Batch	11/15/1994	08/01/1997	Approval	07/22/1998	63 FR 33854
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995	02/25/1998	Approval	11/23/1998	63 FR 50764
RACT VOC CTG VOL Storage	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50764
RACT VOC CTG Wood Furniture	11/15/1994	02/25/1998	Approval	11/23/1998	63 FR 50764
Stage II or Equivalent	11/15/1992	04/05/1991	Approval	07/13/1993	58 FR 28354
VMT - TCMs to Offset Growth	11/15/1992	11/13/1992	Approval	02/21/1995	60 FR 3771
VOC 15% Plan	11/15/1993	11/15/1994	Approval	02/07/1997	62 FR 1150
VOC-NOX Post96 Rate of Progress	11/15/1994	12/29/1994	Approval	02/07/1997	62 FR 1150

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California: Ozone-1Hr (1979) / San Francisco-Bay Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	11/15/1994		Clean Data Determination	05/24/2004	69 FR 21717
Emission Inventory	06/15/1999	08/13/1999	Approval	10/22/2001	66 FR 183
Emission Statement	11/15/1992	05/13/1993	Approval	06/02/1995	60 FR 16799
Nonattainment NSR rules	11/15/1992	09/28/1994	Approval	06/20/2018	83 FR 23372
Ozone Attainment Plan under Subpart 1	06/15/1999	08/13/1999	Approval	05/24/2004	69 FR 21717
RACM under Subpart 1	06/15/1999	08/13/1999	Approval	05/24/2004	69 FR 21717
RACT Fix-ups [CA Rule 8.08]	12/16/1994	07/13/1994	Approval	10/28/1994	59 FR 43328
RACT Fix-ups [CA Rule 8.11]	12/12/1995	09/28/1994	Approval	02/07/1995	59 FR 63721
RACT Fix-ups [CA Rule 8.16]	12/16/1994	09/28/1994	Approval	02/07/1995	59 FR 63721
RACT Fix-ups [CA Rule 8.28]	12/16/1994	09/28/1994	Approval	02/07/1995	59 FR 63721
RACT Fix-ups [CA Rule 8.43]	12/12/1995	09/28/1994	Approval	05/26/1995	60 FR 20431
RACT Non-CTG VOC for Major Sources	11/15/1992	09/17/1993	Approval	06/21/1995	60 FR 27028
RACT NOX for Major Sources	11/15/1992	10/19/1994	Approval	06/21/1995	60 FR 20233
RACT VOC CTG Aerospace	11/15/1994	09/28/1994	Approval	06/02/1995	60 FR 16799
RACT VOC CTG Clean-up Solvents	11/15/1994	09/28/1994	Approval	02/07/1995	59 FR 63721
RACT VOC CTG Industrial Wastewater	11/15/1994	05/24/1994	Approval	06/21/1995	60 FR 27028
RACT VOC CTG Offset Lithography	11/15/1994	09/28/1994	Approval	05/22/1995	60 FR 15062
RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994	09/28/1994	Approval	05/22/1995	60 FR 15062
RACT VOC CTG Plastic Parts (Other)	11/15/1994	09/28/1994	Approval	05/22/1995	60 FR 15062
RACT VOC CTG Shipbuilding/repair	11/15/1994	09/28/1994	Approval	05/26/1995	60 FR 20431
RACT VOC CTG SOCMI Batch	11/15/1994	05/24/1994	Approval	06/21/1995	60 FR 27028
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995		Redesignation requested	11/12/1993	
RACT VOC CTG VOL Storage	11/15/1994	05/24/1994	Approval	06/21/1995	60 FR 27028
RACT VOC CTG Wood Furniture	11/15/1994	09/28/1994	Approval	05/22/1995	60 FR 15062
RFP under Subpart 1	06/15/1999	08/13/1999	Approval	10/22/2001	66 FR 183
VOC 15% Plan	11/15/1993	11/15/1993	Approval	06/21/1995	60 FR 27028

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California: Ozone-1Hr (1979) / San Joaquin Valley Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	11/15/1992	11/07/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	05/31/2002	12/20/2013	Completeness	05/19/2014	
Emission Inventory	11/15/1992	04/10/2003	Approval	04/07/2010	75 FR 10420
Emission Statement	11/15/1992	01/11/1993	Completeness	03/26/1993	
Employee Commute Opt Trip Red.	11/15/2004				
Enhanced Monitoring (PAMS)	See Note	11/10/1993	Approval	10/30/2017	82 FR 45191
Nonattainment NSR rules	05/31/2002				
Nonattainment NSR rules - Severe	05/31/2002				
Nonattainment NSR rules - Extreme	05/16/2005				
Ozone Attainment Plan UAM	05/31/2002	12/20/2013	Approval	05/05/2016	81 FR 19492
RACT Catch-ups	11/15/1992	07/13/1994	Approval	08/13/1995	60 FR 31081
RACT Fix-ups [CA Rule 4403]	11/15/1991	02/24/1995	Approval	03/11/1996	61 FR 3579
RACT Fix-ups [CA Rule 4603]	11/15/1991	11/18/1993	Approval	12/01/1994	59 FR 61545
RACT Fix-ups [CA Rule 4607]	11/15/1991	07/13/1994	Approval	10/08/1995	60 FR 46535
RACT Non-CTG VOC for Major Sources	11/15/1992	07/13/1994	Approval	06/13/1995	60 FR 31086
RACT Non-CTG VOC for Major Sources - Severe	05/31/2002	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT Non-CTG VOC for Major Sources - Extreme	11/15/2004	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT NOX for Major Sources	11/15/1992	10/19/1994	Approval	09/20/1999	64 FR 38832
RACT VOC CTG Aerospace	11/15/1994	03/10/1998	Approval	08/17/1998	63 FR 43881
RACT VOC CTG Clean-up Solvents	11/15/1994	01/28/1992	Approval	01/12/1995	59 FR 64132
RACT VOC CTG Industrial Wastewater	11/15/1994	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Offset Lithography	11/15/1994	07/13/1994	Approval	10/10/1995	60 FR 46535
RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Plastic Parts (Other)	11/15/1994	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Shipbuilding/repair	11/15/1994	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG SOCMI Batch	11/15/1994	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG VOL Storage	11/15/1994	01/28/1992	Approval	06/14/1993	58 FR 28354
RACT VOC CTG Wood Furniture	11/15/1994	02/16/1999	Approval	05/22/2000	65 FR 15240
Severe/Extreme Area Fee Program (Section 185)	05/31/2002	06/14/2011	Approval	09/19/2012	77 FR 50021
Stage II or Equivalent	11/15/1992	05/24/1994	Approval	07/01/1996	61 FR 19555
VMT - TCMs to Offset Growth	11/15/2004	12/20/2013	Approval	05/05/2016	81 FR 19492
VOC 15% Plan	11/15/1993	11/15/1994	Approval	02/07/1997	62 FR 1187
VOC-NOX Post96 Rate of Progress	05/31/2002	12/20/2013	Approval	05/05/2016	81 FR 19492

VOC-NOX Post99 Rate of Progress	See Note	12/20/2013	Approval	05/05/2016	81 FR 19492
VOC-NOX Post2005 Rate of Progress (Extreme)	11/15/2004	12/20/2013	Approval	05/05/2016	81 FR 19492

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California: Ozone-1Hr (1979) / Santa Barbara-Santa Maria-Lompoc Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	11/15/1994	03/30/1995	Approval	02/07/1997	62 FR 1150
Emission Inventory	11/15/1992	03/30/1995	Approval	02/07/1997	62 FR 1187
Emission Statement	11/15/1992	11/12/1992	Approval	08/08/2003	68 FR 40789
Nonattainment NSR rules	11/15/1992		Approval	08/08/2003	68 FR 40789
Ozone Attainment Plan UAM	11/15/1994	03/19/1999	Approval	09/13/2000	65 FR 49499
RACT Catch-ups	11/15/1992	07/13/1994	Approval	07/08/1996	61 FR 20453
RACT Fix-ups [CA Rule 323]	11/15/1991	05/24/1995	Approval	08/14/1995	60 FR 36227
RACT Fix-ups [CA Rule 339]	11/15/1991	04/13/1995	Approval	08/14/1995	60 FR 36227
RACT Non-CTG VOC for Major Sources	11/15/1992	01/24/1995	Approval	04/12/1996	61 FR 5288
RACT NOX for Major Sources	11/15/1992	06/19/1992	Approval	02/07/1997	62 FR 1187
RACT VOC CTG Aerospace	11/15/1994	01/24/1995	Approval	04/12/1996	61 FR 5288
RACT VOC CTG Clean-up Solvents	11/15/1994	07/12/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG Industrial Wastewater	11/15/1994	07/12/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG Offset Lithography	11/15/1994	07/12/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994	07/12/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG Plastic Parts (Other)	11/15/1994	07/12/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG Shipbuilding/repair	11/15/1994	07/12/1996	Approval	09/29/1997	62 FR 40934
RACT VOC CTG SOCMI Batch	11/15/1994		Approval	10/25/2002	67 FR 54739
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995		Approval	10/25/2002	67 FR 54739
RACT VOC CTG VOL Storage	11/15/1994	03/29/1994	Approval	07/05/1996	61 FR 20136
RACT VOC CTG Wood Furniture	11/15/1994	03/26/1996	Approval	10/25/2002	67 FR 2002
VOC 15% Plan	11/15/1993	11/14/1994	Approval	02/08/1997	62 FR 1150

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California: Ozone-1Hr (1979) / Southeast Desert Modified AQMA Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	11/15/1992	11/07/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	11/15/1994		Clean Data Determination	05/15/2015	80 FR 20166
Emission Inventory	11/15/1992	03/30/1995	Approval	02/07/1997	62 FR 1159
Emission Statement	11/15/1992	11/12/1992	Approval	07/26/2004	69 FR 29880
Employee Commute Opt Trip Red.	11/15/1992	01/14/1993	Completeness	05/17/1993	
Enhanced Monitoring (PAMS)	See Note	11/15/1993	Approval	10/30/2017	82 FR 45191
Nonattainment NSR rules	11/15/1992	06/02/1994	Approval	12/13/1996	61 FR 58133
Ozone Attainment Plan UAM	11/15/1994	11/15/1994	Approval	02/07/1997	62 FR 1150
RACT Catch-ups	11/15/1992	07/13/1994	Approval	03/06/1995	60 FR 38
RACT Fix-ups	11/15/1991	11/18/1993	Approval	01/03/1995	59 FR 61545
RACT Non-CTG VOC for Major Sources	11/15/1992	12/29/1994	Approval	09/11/1995	60 FR 47074
RACT NOX for Major Sources	11/15/1992	06/29/1995	Approval	06/12/2000	65 FR 30355
RACT VOC CTG Aerospace [Kern County (part)]	11/15/1994				
RACT VOC CTG Aerospace [Mojave Desert]	11/15/1994				
RACT VOC CTG Clean-up Solvents [Kern County (part)]	11/15/1994	05/30/1991	Approval	03/17/1995	60 FR 8565
RACT VOC CTG Clean-up Solvents [Mojave Desert]	11/15/1994	11/30/1994	Approval	07/01/1996	61 FR 18962
RACT VOC CTG Industrial Wastewater [Kern County (part)]	11/15/1994	05/10/1996	Approval	08/17/1998	63 FR 43884
RACT VOC CTG Industrial Wastewater [Mojave Desert]	11/15/1994	08/07/1995	Approval	12/31/1996	61 FR 56474
RACT VOC CTG Offset Lithography [Kern County (part)]	11/15/1994	05/30/1991	Approval	08/12/1996	61 FR 29659
RACT VOC CTG Offset Lithography [Mojave Desert]	11/15/1994	08/07/1995	Approval	12/31/1996	61 FR 56472
RACT VOC CTG Plastic Parts (Business Machine) [Kern County (part)]	11/15/1994				
RACT VOC CTG Plastic Parts (Business Machine) [Mojave Desert]	11/15/1994	08/07/1995	Approval	12/31/1996	61 FR 56472
RACT VOC CTG Plastic Parts (Other) [Kern County (part)]	11/15/1994				
RACT VOC CTG Plastic Parts (Other) [Mojave Desert]	11/15/1994	08/07/1995	Approval	12/31/1996	61 FR 56472
RACT VOC CTG Shipbuilding/repair [Kern County (part)]	11/15/1994				
RACT VOC CTG Shipbuilding/repair [Mojave Desert]	11/15/1994	08/07/1995	Approval	12/31/1996	61 FR 56474
RACT VOC CTG SOCMI Batch [Kern County (part)]	11/15/1994				
RACT VOC CTG SOCMI Batch [Mojave Desert]	11/15/1994	08/07/1995	Approval	12/31/1996	61 FR 56472
RACT VOC CTG SOCMI Distillation and Reactor Processes [Kern County (part)]	03/23/1995				

RACT VOC CTG SOCMI Distillation and Reactor Processes [Mojave Desert]	03/23/1995	08/07/1995	Approval	12/31/1996	61 FR 56474
RACT VOC CTG VOL Storage [Kern County (part)]	11/15/1994	05/10/1996	Approval	02/06/1998	63 FR 6073
RACT VOC CTG VOL Storage [Mojave Desert]	11/15/1994	01/11/1993	Approval	06/02/1995	60 FR 21702
RACT VOC CTG Wood Furniture [Kern County (part)]	11/15/1994				
RACT VOC CTG Wood Furniture [Mojave Desert]	11/15/1994	03/31/1995	Approval	07/01/1996	61 FR 18962
Severe/Extreme Area Fee Program (Section 185) [Antelope Valley]	12/31/2000	04/22/2011	Completeness	05/19/2011	
Severe/Extreme Area Fee Program (Section 185) [Coachella Valley-South Coast AQMD]	12/31/2000	04/22/2011	Approval	01/14/2013	77 FR 74372
Severe/Extreme Area Fee Program (Section 185) [Mojave Desert]	12/31/2000	04/22/2011	Completeness	05/19/2011	
Stage II or Equivalent	11/15/1992	01/11/1993	Approval	10/07/1996	61 FR 52297
VMT - TCMs to Offset Growth	11/15/1992	04/18/1994	Approval	02/07/1997	62 FR 1150
VOC 15% Plan	11/15/1993	12/28/1994	Completeness	01/30/1995	
VOC-NOX Post96 Rate of Progress	11/15/1994	12/29/1994	Completeness	01/30/1995	
VOC-NOX Post99 Rate of Progress	See Note	12/29/1994	Completeness	01/30/1995	

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California: Ozone-1Hr (1979) / Ventura County Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	11/15/1992	11/07/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	11/15/1994		Clean Data Determination	07/27/2009	74 FR 25153
Emission Inventory	11/15/1992	03/30/1995	Approval	02/07/1997	62 FR 1150
Emission Statement	11/15/1992	11/12/1992	Approval	01/08/2001	65 FR 76567
Employee Commute Opt Trip Red.	11/15/1992	11/18/1993	Completeness	05/18/1994	
Enhanced Monitoring (PAMS)	See Note	11/10/1993	Approval	10/30/2017	82 FR 45191
Nonattainment NSR rules	11/15/1992	05/10/1996	Approval	03/31/2003	68 FR 9561
Ozone Attainment Plan UAM	11/15/1994	11/15/1994	Approval	02/07/1997	62 FR 1150
RACT Catch-ups	11/15/1992	04/05/1991	Approval	03/13/1996	61 FR 5288
RACT Fix-ups	11/15/1991	04/05/1991	Approval	03/24/1992	57 FR 10136
RACT Non-CTG VOC for Major Sources	11/15/1992	04/05/1991	Approval	03/13/1996	61 FR 5288
RACT NOX for Major Sources	11/15/1992	06/29/1995	Approval	03/24/1997	62 FR 3220
RACT VOC CTG Aerospace	11/15/1994	04/05/1991	Approval	04/12/1996	61 FR 5288
RACT VOC CTG Clean-up Solvents	11/15/1994	02/16/1999	Approval	07/04/2002	
RACT VOC CTG Industrial Wastewater	11/15/1994				
RACT VOC CTG Offset Lithography	11/15/1994	11/12/1992	Approval	11/03/1994	59 FR 50498
RACT VOC CTG Plastic Parts (Business Machine)	11/15/1994	01/11/1993	Approval	01/19/1994	58 FR 66286
RACT VOC CTG Plastic Parts (Other)	11/15/1994				
RACT VOC CTG Shipbuilding/repair	11/15/1994	05/24/1994	Approval	11/03/1997	62 FR 59284
RACT VOC CTG SOCMI Batch	11/15/1994				
RACT VOC CTG SOCMI Distillation and Reactor Processes	03/23/1995				
RACT VOC CTG VOL Storage	11/15/1994	10/16/1990	Approval	01/05/1994	58 FR 64157
RACT VOC CTG Wood Furniture	11/15/1994	07/13/1994	Approval	07/01/1996	61 FR 18962
Severe/Extreme Area Fee Program (Section 185)	12/31/2000		Approval	07/27/2009	74 FR 25153
Stage II or Equivalent	11/15/1992	11/18/1993	Approval	02/13/1995	59 FR 64330
VMT - TCMs to Offset Growth	11/15/1992	04/18/1994	Approval	02/07/1997	62 FR 1150
VOC 15% Plan	11/15/1993	11/15/1994	Approval	02/07/1997	62 FR 1150
VOC-NOX Post96 Rate of Progress	11/15/1994	12/29/1994	Approval	02/07/1997	62 FR 1150
VOC-NOX Post99 Rate of Progress	See Note	12/29/1994	Approval	02/07/1997	62 FR 1150

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California: Ozone-1Hr (1979) / Yuba City Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Nonattainment NSR rules	11/15/1992	03/25/1993	Completeness	06/02/1993	
RACT NOX for Major Sources	11/15/1992				

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California: Ozone-8Hr (1997) / Amador and Calaveras Cos. (Central Mountain Cos.)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551

Emission Inventory	06/13/2013				
Emission Statement	06/13/2013				
Nonattainment NSR rules - Moderate	06/13/2013				
Ozone Attainment Demonstration	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551
RACT Non-CTG VOC for Major Sources	06/13/2013				
RACT NOX for Major Sources	06/13/2013				
RACT VOC CTG Aerospace	06/13/2013				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	06/13/2013				
RACT VOC CTG Bulk Gasoline Plants	06/13/2013				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	06/13/2013				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	06/13/2013				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	06/13/2013				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	06/13/2013				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	06/13/2013				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	06/13/2013				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	06/13/2013				
RACT VOC CTG Industrial Cleaning Solvents (2006)	06/13/2013				
RACT VOC CTG Large Appliance Coatings (2007)	06/13/2013				
RACT VOC CTG Large Petroleum Dry Cleaners	06/13/2013				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	06/13/2013				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	06/13/2013				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	06/13/2013				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	06/13/2013				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	06/13/2013				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	06/13/2013				
RACT VOC CTG Metal Furniture Coatings (2007)	06/13/2013				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	06/13/2013				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	06/13/2013				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	06/13/2013				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	06/13/2013				
RACT VOC CTG Plastic Parts Coatings (2008)	06/13/2013				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	06/13/2013				
RACT VOC CTG SOCMI Air Oxidation Processes	06/13/2013				
RACT VOC CTG SOCMI Distillation and Reactor Processes	06/13/2013				
RACT VOC CTG Shipbuilding/repair	06/13/2013				
RACT VOC CTG Solvent Metal Cleaning	06/13/2013				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	06/13/2013				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	06/13/2013				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	06/13/2013				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	06/13/2013				
RACT VOC CTG Surface Coating of Cans	06/13/2013				
RACT VOC CTG Surface Coating of Coils	06/13/2013				
RACT VOC CTG Surface Coating of Fabrics	06/13/2013				
RACT VOC CTG Surface Coating of Large Appliances	06/13/2013				
RACT VOC CTG Surface Coating of Metal Furniture	06/13/2013				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	06/13/2013				
RACT VOC CTG Surface Coating of Paper	06/13/2013				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	06/13/2013				
RACT VOC CTG Use of Cutback Asphalt	06/13/2013				
RACT VOC CTG Wood Furniture	06/13/2013				
RFP VOC and NOX - Moderate	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551

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California: Ozone-8Hr (1997) / Chico

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice

Emission Inventory	06/13/2013				
Emission Statement	06/13/2013				
Nonattainment NSR rules - Marginal	06/13/2013				

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California: Ozone-8Hr (1997) / Imperial County Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	12/31/2008		Clean Data Determination	01/04/2010	74 FR 63309
Emission Inventory	06/15/2006				
Emission Statement	06/15/2007		Approval	02/05/2013	77 FR 72968
Nonattainment NSR rules - Marginal	06/15/2007				
Nonattainment NSR rules - Moderate	12/31/2008				
Ozone Attainment Demonstration	12/31/2008		Clean Data Determination	01/04/2010	74 FR 63309
RACT Non-CTG VOC for Major Sources	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT NOX for Major Sources	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Aerospace	12/31/2008	07/20/2010	Approval	12/01/2011	76 FR 67369
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	09/30/2009	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Bulk Gasoline Plants	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	09/30/2009	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Flat Wood Paneling Coatings (2006)	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Flexible Packaging Printing Materials (2006)	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Industrial Cleaning Solvents (2006)	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Large Appliance Coatings (2007)	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Large Petroleum Dry Cleaners	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Leaks from Petroleum Refinery Equipment	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Metal Furniture Coatings (2007)	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	09/30/2009	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	09/30/2009	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Plastic Parts Coatings (2008)	09/30/2009	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG SOCMI Air Oxidation Processes	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG SOCMI Distillation and Reactor Processes	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Shipbuilding/repair	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Solvent Metal Cleaning	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating of Cans	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating of Coils	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating of Fabrics	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating of Large Appliances	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating of Metal Furniture	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876

RACT VOC CTG Surface Coating of Paper	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Tank Truck Gasoline Loading Terminals	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Use of Cutback Asphalt	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RACT VOC CTG Wood Furniture	12/31/2008	12/21/2010	Approval	12/14/2015	80 FR 69876
RFP VOC and NOX - Moderate	12/31/2008		Clean Data Determination	01/04/2010	74 FR 63309

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California: Ozone-8Hr (1997) / Kern County (Eastern Kern)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551
Emission Inventory	06/13/2013				
Emission Statement	06/13/2013				
Nonattainment NSR rules - Moderate	06/13/2013				
Ozone Attainment Demonstration	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551
RACT Non-CTG VOC for Major Sources	06/13/2013				
RACT NOX for Major Sources	06/13/2013				
RACT VOC CTG Aerospace	06/13/2013				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	06/13/2013				
RACT VOC CTG Bulk Gasoline Plants	06/13/2013				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	06/13/2013				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	06/13/2013				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	06/13/2013				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	06/13/2013				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	06/13/2013				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	06/13/2013				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	06/13/2013				
RACT VOC CTG Industrial Cleaning Solvents (2006)	06/13/2013				
RACT VOC CTG Large Appliance Coatings (2007)	06/13/2013				
RACT VOC CTG Large Petroleum Dry Cleaners	06/13/2013				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	06/13/2013				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	06/13/2013				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	06/13/2013				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	06/13/2013				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	06/13/2013				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	06/13/2013				
RACT VOC CTG Metal Furniture Coatings (2007)	06/13/2013				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	06/13/2013				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	06/13/2013				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	06/13/2013				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	06/13/2013				
RACT VOC CTG Plastic Parts Coatings (2008)	06/13/2013				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	06/13/2013				
RACT VOC CTG SOCMI Air Oxidation Processes	06/13/2013				
RACT VOC CTG SOCMI Distillation and Reactor Processes	06/13/2013				
RACT VOC CTG Shipbuilding/repair	06/13/2013				
RACT VOC CTG Solvent Metal Cleaning	06/13/2013				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	06/13/2013				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	06/13/2013				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	06/13/2013				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	06/13/2013				
RACT VOC CTG Surface Coating of Cans	06/13/2013				
RACT VOC CTG Surface Coating of Coils	06/13/2013				
RACT VOC CTG Surface Coating of Fabrics	06/13/2013				
RACT VOC CTG Surface Coating of Large Appliances	06/13/2013				
RACT VOC CTG Surface Coating of Metal Furniture	06/13/2013				

RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	06/13/2013				
RACT VOC CTG Surface Coating of Paper	06/13/2013				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	06/13/2013				
RACT VOC CTG Use of Cutback Asphalt	06/13/2013				
RACT VOC CTG Wood Furniture	06/13/2013				
RFP VOC and NOX - Moderate	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551

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California: Ozone-8Hr (1997) / Los Angeles and San Bernardino Counties (Western Mojave Desert)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	See Note	11/07/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	06/15/2007		Completeness	01/22/2009	
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emission Inventory	06/15/2006		Completeness	01/22/2009	
Emission Statement	06/15/2007				
I/M Enhanced	See Note	06/05/2009	Approval	08/02/2010	75 FR 38023
Nonattainment NSR rules - Moderate [Antelope Valley]	06/15/2007				
Nonattainment NSR rules - Moderate [Mojave Desert]	06/15/2007				
Nonattainment NSR rules - Severe 15 [Antelope Valley]	See Note				
Nonattainment NSR rules - Severe 15 [Mojave Desert]	See Note				
Ozone Attainment Demonstration	06/15/2007	07/22/2008	Completeness	01/22/2009	
RACT Non-CTG VOC for Major Sources [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT Non-CTG VOC for Major Sources [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT NOX for Major Sources [Antelope Valley]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT NOX for Major Sources [Mojave Desert]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Aerospace [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Aerospace [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Antelope Valley]	09/30/2009				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Mojave Desert]	09/30/2009				
RACT VOC CTG Bulk Gasoline Plants [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Bulk Gasoline Plants [Mojave Desert]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Antelope Valley]	09/30/2009				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Mojave Desert]	09/30/2009		Approval	03/30/2020	85 FR 11812
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Antelope Valley]	09/29/2007				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Mojave Desert]	09/29/2007				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Antelope Valley]	09/29/2007				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Mojave Desert]	09/29/2007				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Mojave Desert]	09/15/2006	10/22/2010	Approval	07/19/2011	76 FR 29152
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Industrial Cleaning Solvents (2006) [Antelope Valley]	09/29/2007				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Mojave Desert]	09/29/2007				
RACT VOC CTG Large Appliance Coatings (2007) [Antelope Valley]	09/28/2008				
RACT VOC CTG Large Appliance Coatings (2007) [Mojave Desert]	09/28/2008				

RACT VOC CTG Large Petroleum Dry Cleaners [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Large Petroleum Dry Cleaners [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Mojave Desert]	09/15/2006	10/21/2010	Approval	07/19/2011	76 FR 19152
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Antelope Valley]	09/29/2007				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Mojave Desert]	09/29/2007				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Mojave Desert]	09/15/2006	10/22/2010	Approval	07/19/2011	76 FR 29152
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Metal Furniture Coatings (2007) [Antelope Valley]	09/28/2008				
RACT VOC CTG Metal Furniture Coatings (2007) [Mojave Desert]	09/28/2008				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Antelope Valley]	09/30/2009				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Mojave Desert]	09/30/2009				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Antelope Valley]	09/30/2009				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Mojave Desert]	09/30/2009		Approval	03/30/2020	85 FR 11812
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Antelope Valley]	09/28/2008				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Mojave Desert]	09/28/2008				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Mojave Desert]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Plastic Parts Coatings (2008) [Antelope Valley]	09/30/2009				
RACT VOC CTG Plastic Parts Coatings (2008) [Mojave Desert]	09/30/2009		Approval	03/30/2020	85 FR 11812
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG SOCMI Air Oxidation Processes [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG SOCMI Air Oxidation Processes [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG SOCMI Distillation and Reactor Processes [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG SOCMI Distillation and Reactor Processes [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Shipbuilding/repair [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Shipbuilding/repair [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Solvent Metal Cleaning [Antelope Valley]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Solvent Metal Cleaning [Mojave Desert]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Mojave Desert]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Mojave Desert]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153

RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Antelope Valley]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Surface Coating of Cans [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Cans [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Surface Coating of Coils [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Coils [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Surface Coating of Fabrics [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Fabrics [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Surface Coating of Large Appliances [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Large Appliances [Mojave Desert]	09/15/2006	07/11/2007	Approval	07/19/2011	76 FR 29153
RACT VOC CTG Surface Coating of Metal Furniture [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Metal Furniture [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Paper [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Paper [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Antelope Valley]	09/15/2006	01/31/2007	Approval	08/30/2011	76 FR 38572
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Mojave Desert]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Use of Cutback Asphalt [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Use of Cutback Asphalt [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Wood Furniture [Antelope Valley]	09/15/2006	01/31/2007	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Wood Furniture [Mojave Desert]	09/15/2006	07/11/2007	Approval	03/14/2018	83 FR 5921
RFP VOC and NOX - Moderate	06/15/2007	07/22/2008	Completeness	10/02/2008	
RFP VOC and NOX - Severe 15	See Note				
Severe/Extreme Area Fee Program (Section 185) [Antelope Valley]	See Note				
Severe/Extreme Area Fee Program (Section 185) [Mojave Desert]	See Note				
VMT - TCMs to Offset Growth	See Note				

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California: Ozone-8Hr (1997) / Los Angeles-South Coast Air Basin Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Boilers	See Note	03/21/1994	Approval	12/09/1996	61 FR 57775
Clean Fuels for Fleets 182(c)(4)	06/15/2007	11/28/2007	Approval	04/30/2012	77 FR 12674
Contingency Measures VOC and NOX	06/15/2007	11/28/2007	Approval	04/30/2012	77 FR 12674
Contingency Provisions for RFP Milestones 182(c)(9)	06/15/2007	11/28/2007	Approval	04/30/2012	77 FR 12674
Emission Inventory	06/15/2006	11/28/2007	Approval	04/30/2012	77 FR 12674
Emission Statement	06/15/2007	11/28/2007	Proposed approval	06/17/2019	84 FR 28132
I/M Enhanced	05/08/2007	11/28/2007	Approval	04/30/2012	77 FR 12674
Nonattainment NSR rules - Severe 17	06/15/2007				
Nonattainment NSR rules - Extreme	See Note	08/28/1996	Approval	12/03/1997	61 FR 64291
Ozone Attainment Demonstration	06/15/2007	11/28/2007	Approval	10/01/2019	84 FR 52005
RACT Non-CTG VOC for Major Sources	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT NOX for Major Sources	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Aerospace	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	09/30/2009				
RACT VOC CTG Bulk Gasoline Plants	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	09/30/2009				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	09/29/2007				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	09/29/2007				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Industrial Cleaning Solvents (2006)	09/29/2007				
RACT VOC CTG Large Appliance Coatings (2007)	09/28/2008				

RACT VOC CTG Large Petroleum Dry Cleaners	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Leaks from Petroleum Refinery Equipment	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	09/29/2007				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Metal Furniture Coatings (2007)	09/28/2008				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	09/30/2009				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	09/30/2009				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	09/28/2008				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Plastic Parts Coatings (2008)	09/30/2009				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG SOCMI Air Oxidation Processes	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG SOCMI Distillation and Reactor Processes	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Shipbuilding/repair	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Solvent Metal Cleaning	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Cans	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Coils	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Fabrics	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Large Appliances	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Metal Furniture	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Paper	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Tank Truck Gasoline Loading Terminals	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Use of Cutback Asphalt	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Wood Furniture	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RFP VOC and NOX - Severe 17	06/15/2007	11/28/2007	Approval	04/30/2012	77 FR 12674
RFP VOC and NOX - Extreme	See Note	11/28/2007	Approval	04/30/2012	77 FR 12674
Severe/Extreme Area Fee Program (Section 185)	See Note				
Stage II or Equivalent	06/15/2007		Approval	06/12/2006	71 FR 18216
VMT - TCMs to Offset Growth	06/15/2007	11/28/2007	Approval	10/03/2014	79 FR 52539

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California: Ozone-8Hr (1997) / Mariposa and Tuolumne Cos. (Southern Mountain Counties)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551
Emission Inventory	06/13/2013				
Emission Statement	06/13/2013				
Nonattainment NSR rules - Moderate	06/13/2013				
Ozone Attainment Demonstration	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551
RACT Non-CTG VOC for Major Sources	06/13/2013				
RACT NOX for Major Sources	06/13/2013				
RACT VOC CTG Aerospace	06/13/2013				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	06/13/2013				
RACT VOC CTG Bulk Gasoline Plants	06/13/2013				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	06/13/2013				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	06/13/2013				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	06/13/2013				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	06/13/2013				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	06/13/2013				

RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	06/13/2013				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	06/13/2013				
RACT VOC CTG Industrial Cleaning Solvents (2006)	06/13/2013				
RACT VOC CTG Large Appliance Coatings (2007)	06/13/2013				
RACT VOC CTG Large Petroleum Dry Cleaners	06/13/2013				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	06/13/2013				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	06/13/2013				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	06/13/2013				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	06/13/2013				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	06/13/2013				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	06/13/2013				
RACT VOC CTG Metal Furniture Coatings (2007)	06/13/2013				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	06/13/2013				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	06/13/2013				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	06/13/2013				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	06/13/2013				
RACT VOC CTG Plastic Parts Coatings (2008)	06/13/2013				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	06/13/2013				
RACT VOC CTG SOCMI Air Oxidation Processes	06/13/2013				
RACT VOC CTG SOCMI Distillation and Reactor Processes	06/13/2013				
RACT VOC CTG Shipbuilding/repair	06/13/2013				
RACT VOC CTG Solvent Metal Cleaning	06/13/2013				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	06/13/2013				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	06/13/2013				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	06/13/2013				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	06/13/2013				
RACT VOC CTG Surface Coating of Cans	06/13/2013				
RACT VOC CTG Surface Coating of Coils	06/13/2013				
RACT VOC CTG Surface Coating of Fabrics	06/13/2013				
RACT VOC CTG Surface Coating of Large Appliances	06/13/2013				
RACT VOC CTG Surface Coating of Metal Furniture	06/13/2013				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	06/13/2013				
RACT VOC CTG Surface Coating of Paper	06/13/2013				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	06/13/2013				
RACT VOC CTG Use of Cutback Asphalt	06/13/2013				
RACT VOC CTG Wood Furniture	06/13/2013				
RFP VOC and NOX - Moderate	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551

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California: Ozone-8Hr (1997) / Morongo Band of Mission Indians

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	See Note				
Contingency Measures VOC and NOX	See Note				
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emission Inventory	See Note				
Emission Statement	See Note				
Nonattainment NSR rules - Severe 17	See Note				
Ozone Attainment Demonstration	See Note				
RACT Non-CTG VOC for Major Sources	See Note				
RACT NOX for Major Sources	See Note				
RACT VOC CTG Aerospace	See Note				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	See Note				
RACT VOC CTG Bulk Gasoline Plants	See Note				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	See Note				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	See Note				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	See Note				

RACT VOC CTG Flat Wood Paneling Coatings (2006)	See Note				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	See Note				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	See Note				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	See Note				
RACT VOC CTG Industrial Cleaning Solvents (2006)	See Note				
RACT VOC CTG Large Appliance Coatings (2007)	See Note				
RACT VOC CTG Large Petroleum Dry Cleaners	See Note				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	See Note				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	See Note				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	See Note				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	See Note				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	See Note				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	See Note				
RACT VOC CTG Metal Furniture Coatings (2007)	See Note				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	See Note				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	See Note				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	See Note				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	See Note				
RACT VOC CTG Plastic Parts Coatings (2008)	See Note				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	See Note				
RACT VOC CTG SOCMI Air Oxidation Processes	See Note				
RACT VOC CTG SOCMI Distillation and Reactor Processes	See Note				
RACT VOC CTG Shipbuilding/repair	See Note				
RACT VOC CTG Solvent Metal Cleaning	See Note				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	See Note				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	See Note				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	See Note				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	See Note				
RACT VOC CTG Surface Coating of Cans	See Note				
RACT VOC CTG Surface Coating of Coils	See Note				
RACT VOC CTG Surface Coating of Fabrics	See Note				
RACT VOC CTG Surface Coating of Large Appliances	See Note				
RACT VOC CTG Surface Coating of Metal Furniture	See Note				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	See Note				
RACT VOC CTG Surface Coating of Paper	See Note				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	See Note				
RACT VOC CTG Use of Cutback Asphalt	See Note				
RACT VOC CTG Wood Furniture	See Note				
RFP VOC and NOX - Severe 17	See Note				
Severe/Extreme Area Fee Program (Section 185)	See Note				
Stage II or Equivalent	See Note				
VMT - TCMs to Offset Growth	See Note				

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California: Ozone-8Hr (1997) / Nevada County (Western part)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551
Emission Inventory	06/13/2013				
Emission Statement	06/13/2013	09/06/2016	Approval	08/21/2017	82 FR 28240
Nonattainment NSR rules - Moderate	06/13/2013				
Ozone Attainment Demonstration	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551
RACT Non-CTG VOC for Major Sources	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT NOX for Major Sources	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Aerospace	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	06/13/2013	05/17/2011	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Bulk Gasoline Plants	06/13/2013	09/27/2011	Approval	03/08/2013	78 FR 897

RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	06/13/2013	05/17/2011	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Flat Wood Paneling Coatings (2006)	06/13/2013	08/14/2008	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Flexible Packaging Printing Materials (2006)	06/13/2013	08/14/2008	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Industrial Cleaning Solvents (2006)	06/13/2013	08/14/2008	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Large Appliance Coatings (2007)	06/13/2013	08/14/2008	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Large Petroleum Dry Cleaners	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	06/13/2013	09/27/2011	Approval	03/08/2013	78 FR 897
RACT VOC CTG Leaks from Petroleum Refinery Equipment	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	06/13/2013	08/14/2008	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Metal Furniture Coatings (2007)	06/13/2013	08/14/2008	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	06/13/2013	05/17/2011	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	06/13/2013	09/27/2011	Approval	10/09/2012	77 FR 47536
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	06/13/2013	08/14/2008	Approval	06/18/2012	77 FR 23130
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Plastic Parts Coatings (2008)	06/13/2013	09/27/2011	Approval	10/09/2012	77 FR 47536
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG SOCMI Air Oxidation Processes	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG SOCMI Distillation and Reactor Processes	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Shipbuilding/repair	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Solvent Metal Cleaning	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	06/13/2013	09/27/2011	Approval	03/08/2013	78 FR 897
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	06/13/2013				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Surface Coating of Cans	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Surface Coating of Coils	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Surface Coating of Fabrics	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Surface Coating of Large Appliances	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Surface Coating of Metal Furniture	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	06/13/2013	09/27/2011	Approval	10/09/2012	77 FR 47536
RACT VOC CTG Surface Coating of Paper	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Tank Truck Gasoline Loading Terminals	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RACT VOC CTG Use of Cutback Asphalt	06/13/2013	03/07/2008	Approval	11/30/2009	74 FR 56120
RACT VOC CTG Wood Furniture	06/13/2013	02/07/2008	Approval	06/12/2015	80 FR 19544
RFP VOC and NOX - Moderate	06/13/2013		Clean Data Determination	01/02/2013	77 FR 71551

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California: Ozone-8Hr (1997) / Pechanga Band of Luise&#65533;o Mission Indians of the Pechanga Reservation

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	See Note		Redesignation approved	04/03/2015	80 FR 18120
Contingency Measures VOC and NOX	See Note		Redesignation approved	04/03/2015	80 FR 18120
Contingency Provisions for RFP Milestones 182(c)(9)	See Note		Redesignation approved	04/03/2015	80 FR 18120
Emission Inventory	See Note		Redesignation approved	04/03/2015	80 FR 18120
Emission Statement	See Note		Redesignation approved	04/03/2015	80 FR 18120
Nonattainment NSR rules - Severe 17	See Note		Redesignation approved	04/03/2015	80 FR 18120

Ozone Attainment Demonstration	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT Non-CTG VOC for Major Sources	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT NOX for Major Sources	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Aerospace	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Bulk Gasoline Plants	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Flat Wood Paneling Coatings (2006)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Flexible Packaging Printing Materials (2006)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Industrial Cleaning Solvents (2006)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Large Appliance Coatings (2007)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Large Petroleum Dry Cleaners	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Leaks from Petroleum Refinery Equipment	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Metal Furniture Coatings (2007)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Plastic Parts Coatings (2008)	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG SOCMI Air Oxidation Processes	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG SOCMI Distillation and Reactor Processes	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Shipbuilding/repair	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Solvent Metal Cleaning	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating of Cans	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating of Coils	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating of Fabrics	See Note		Redesignation approved	04/03/2015	80 FR 18120

RACT VOC CTG Surface Coating of Large Appliances	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating of Metal Furniture	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Surface Coating of Paper	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Tank Truck Gasoline Loading Terminals	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Use of Cutback Asphalt	See Note		Redesignation approved	04/03/2015	80 FR 18120
RACT VOC CTG Wood Furniture	See Note		Redesignation approved	04/03/2015	80 FR 18120
RFP VOC and NOX - Severe 17	See Note		Redesignation approved	04/03/2015	80 FR 18120
Severe/Extreme Area Fee Program (Section 185)	See Note		Redesignation approved	04/03/2015	80 FR 18120
Stage II or Equivalent	See Note		Redesignation approved	04/03/2015	80 FR 18120
VMT - TCMs to Offset Growth	See Note		Redesignation approved	04/03/2015	80 FR 18120

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California: Ozone-8Hr (1997) / Riverside County (Coachella Valley) Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	06/15/2007				
Contingency Measures VOC and NOX	06/15/2007				
Contingency Provisions for RFP Milestones 182(c)(9)	06/15/2007	11/28/2007	Completeness	05/28/2008	
Emission Inventory	06/15/2006	11/06/2014	Approval	07/12/2017	82 FR 26854
Emission Statement	06/15/2007	11/06/2014	Approval	07/12/2017	82 FR 26854
I/M Enhanced	05/08/2007	06/05/2009	Approval	08/02/2010	75 FR 38023
Nonattainment NSR rules - Serious	06/15/2007				
Nonattainment NSR rules - Severe 15	See Note	08/28/1996	Approval	02/03/1997	61 FR 64291
Ozone Attainment Demonstration	06/15/2007	11/28/2007	Approval	07/12/2017	82 FR 26854
RACT Non-CTG VOC for Major Sources	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT NOX for Major Sources	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Aerospace	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	09/30/2009				
RACT VOC CTG Bulk Gasoline Plants	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	09/30/2009				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	09/29/2007				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	09/29/2007				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Industrial Cleaning Solvents (2006)	09/29/2007				
RACT VOC CTG Large Appliance Coatings (2007)	09/28/2008				
RACT VOC CTG Large Petroleum Dry Cleaners	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Leaks from Petroleum Refinery Equipment	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	09/29/2007				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Metal Furniture Coatings (2007)	09/28/2008				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	09/30/2009				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	09/30/2009				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	09/28/2008				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Plastic Parts Coatings (2008)	09/30/2009				

RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG SOCMI Air Oxidation Processes	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG SOCMI Distillation and Reactor Processes	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Shipbuilding/repair	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Solvent Metal Cleaning	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Cans	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Coils	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Fabrics	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Large Appliances	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Metal Furniture	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Surface Coating of Paper	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Tank Truck Gasoline Loading Terminals	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Use of Cutback Asphalt	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RACT VOC CTG Wood Furniture	09/15/2006	01/31/2007	Approval	01/20/2009	73 FR 76947
RFP VOC and NOX - Serious	06/15/2007	02/19/2008	Approval	07/12/2017	82 FR 26854
RFP VOC and NOX - Severe 15	See Note	02/19/2008	Approval	07/12/2017	82 FR 26854
Severe/Extreme Area Fee Program (Section 185)	See Note				
Stage II or Equivalent	06/15/2007		Approval	01/20/2009	73 FR 76947
VMT - TCMs to Offset Growth	See Note	11/28/2007	Approval	07/12/2017	82 FR 26854

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California: Ozone-8Hr (1997) / Sacramento Metro Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	06/15/2007				
Contingency Measures VOC and NOX	06/15/2007	12/31/2013	Proposed approval	10/15/2014	79 FR 61799
Contingency Provisions for RFP Milestones 182(c)(9)	06/15/2007	12/31/2013	Proposed approval	10/15/2014	79 FR 61799
Emission Inventory	06/15/2006	12/31/2013	Proposed approval	10/15/2014	79 FR 61799
Emission Statement	06/15/2007	05/18/1998	Approval	08/05/2008	73 FR 32240
I/M Enhanced	05/08/2007	06/05/2009	Approval	08/02/2010	75 FR 38023
Nonattainment NSR rules - Serious [El Dorado]	06/15/2007				
Nonattainment NSR rules - Serious [Feather River]	06/15/2007				
Nonattainment NSR rules - Serious [Placer]	06/15/2007				
Nonattainment NSR rules - Serious [Sacramento]	06/15/2007				
Nonattainment NSR rules - Serious [Yolo-Solano]	06/15/2007	05/10/1996	Approval	09/05/1997	62 FR 36214
Nonattainment NSR rules - Severe 15 [El Dorado]	See Note	12/18/2001	Completeness	06/18/2002	
Nonattainment NSR rules - Severe 15 [Feather River]	06/04/2011				
Nonattainment NSR rules - Severe 15 [Placer]	06/04/2011				
Nonattainment NSR rules - Severe 15 [Sacramento]	06/04/2011				
Nonattainment NSR rules - Severe 15 [Yolo-Solano]	See Note	05/10/1996	Approval	09/05/1997	62 FR 36214
Ozone Attainment Demonstration	06/15/2007	12/31/2013	Approval	03/02/2015	80 FR 4795
RACT Non-CTG VOC for Major Sources [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT Non-CTG VOC for Major Sources [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT Non-CTG VOC for Major Sources [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT Non-CTG VOC for Major Sources [Sacramento]	09/15/2006	01/21/2009	Approval	01/03/2018	82 FR 57130
RACT Non-CTG VOC for Major Sources [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT NOX for Major Sources [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT NOX for Major Sources [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT NOX for Major Sources [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT NOX for Major Sources [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT NOX for Major Sources [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Aerospace [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Aerospace [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Aerospace [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Aerospace [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Aerospace [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [El Dorado]	09/30/2009				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Feather River]	09/30/2009	10/27/2009	Approval	09/08/2015	80 FR 38959

RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Placer]	09/30/2009	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Sacramento]	09/30/2009	07/12/2012	Approval	12/17/2012	77 FR 63743
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Yolo-Solano]	09/30/2009				
RACT VOC CTG Bulk Gasoline Plants [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT VOC CTG Bulk Gasoline Plants [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Bulk Gasoline Plants [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Bulk Gasoline Plants [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Bulk Gasoline Plants [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [El Dorado]	09/30/2009				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Feather River]	09/30/2009	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Placer]	09/30/2009	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Sacramento]	09/30/2009	07/12/2012	Approval	12/17/2012	77 FR 63743
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Yolo-Solano]	09/30/2009				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [El Dorado]	09/29/2007				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Feather River]	09/29/2007	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Placer]	09/29/2007	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Sacramento]	09/29/2007	01/21/2009	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Yolo-Solano]	09/29/2007				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [El Dorado]	09/29/2007				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Feather River]	09/29/2007	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Placer]	09/29/2007	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Sacramento]	09/29/2007	01/21/2009	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Yolo-Solano]	09/29/2007				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Feather River]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [El Dorado]	09/15/2006	09/30/2013	Approval	03/17/2014	79 FR 2375
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604

RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Industrial Cleaning Solvents (2006) [El Dorado]	09/29/2007				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Feather River]	09/29/2007	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Industrial Cleaning Solvents (2006) [Placer]	09/29/2007	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Industrial Cleaning Solvents (2006) [Sacramento]	09/29/2007	04/05/2011	Approval	11/28/2011	76 FR 60376
RACT VOC CTG Industrial Cleaning Solvents (2006) [Yolo-Solano]	09/29/2007				
RACT VOC CTG Large Appliance Coatings (2007) [El Dorado]	09/28/2008				
RACT VOC CTG Large Appliance Coatings (2007) [Feather River]	09/28/2008	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Large Appliance Coatings (2007) [Placer]	09/28/2008	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Large Appliance Coatings (2007) [Sacramento]	09/28/2008	01/21/2009	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Large Appliance Coatings (2007) [Yolo-Solano]	09/28/2008				
RACT VOC CTG Large Petroleum Dry Cleaners [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Large Petroleum Dry Cleaners [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Large Petroleum Dry Cleaners [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Large Petroleum Dry Cleaners [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Large Petroleum Dry Cleaners [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Leaks from Petroleum Refinery Equipment [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [El Dorado]	09/29/2007				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Feather River]	09/29/2007	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Placer]	09/29/2007	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Sacramento]	09/29/2007	04/29/2009	Approval	06/08/2010	75 FR 18068
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Yolo-Solano]	09/29/2007				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604

RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Sacramento]	09/15/2006	07/11/2007	Approval	01/03/2018	82 FR 57123
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Metal Furniture Coatings (2007) [El Dorado]	09/28/2008				
RACT VOC CTG Metal Furniture Coatings (2007) [Feather River]	09/28/2008	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Metal Furniture Coatings (2007) [Placer]	09/28/2008	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Metal Furniture Coatings (2007) [Sacramento]	09/28/2008	04/05/2011	Approval	01/20/2012	76 FR 71886
RACT VOC CTG Metal Furniture Coatings (2007) [Yolo-Solano]	09/28/2008				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [El Dorado]	09/30/2009				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Feather River]	09/30/2009	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Placer]	09/30/2009	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Sacramento]	09/30/2009				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Yolo-Solano]	09/30/2009				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [El Dorado]	09/30/2009				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Feather River]	09/30/2009				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Placer]	09/30/2009	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Sacramento]	09/30/2009	04/05/2011	Approval	01/20/2012	76 FR 71886
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Yolo-Solano]	09/30/2009				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [El Dorado]	09/28/2008				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Feather River]	09/28/2008	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Placer]	09/28/2008				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Sacramento]	09/28/2008	01/21/2009	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Yolo-Solano]	09/28/2008				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Plastic Parts Coatings (2008) [El Dorado]	09/30/2009				
RACT VOC CTG Plastic Parts Coatings (2008) [Feather River]	09/30/2009	10/27/2009	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Plastic Parts Coatings (2008) [Placer]	09/30/2009	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Plastic Parts Coatings (2008) [Sacramento]	09/30/2009	04/05/2011	Approval	01/20/2012	76 FR 71886
RACT VOC CTG Plastic Parts Coatings (2008) [Yolo-Solano]	09/30/2009				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG SOCMI Air Oxidation Processes [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG SOCMI Air Oxidation Processes [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG SOCMI Air Oxidation Processes [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG SOCMI Air Oxidation Processes [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG SOCMI Air Oxidation Processes [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG SOCMI Distillation and Reactor Processes [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG SOCMI Distillation and Reactor Processes [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959

RACT VOC CTG SOCMI Distillation and Reactor Processes [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG SOCMI Distillation and Reactor Processes [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG SOCMI Distillation and Reactor Processes [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Shipbuilding/repair [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Shipbuilding/repair [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Shipbuilding/repair [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Shipbuilding/repair [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Shipbuilding/repair [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Solvent Metal Cleaning [El Dorado]	09/15/2006	09/30/2013	Approval	03/17/2014	79 FR 2375
RACT VOC CTG Solvent Metal Cleaning [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Solvent Metal Cleaning [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Solvent Metal Cleaning [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Solvent Metal Cleaning [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Feather River]	09/15/2006	11/06/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Cans [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Surface Coating of Cans [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Cans [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Cans [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Surface Coating of Cans [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Coils [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Surface Coating of Coils [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Coils [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Coils [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Surface Coating of Coils [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Fabrics [El Dorado]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Fabrics [Feather River]	09/15/2006	07/11/2007	Completeness	01/11/2008	
RACT VOC CTG Surface Coating of Fabrics [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Fabrics [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Surface Coating of Fabrics [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Large Appliances [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Surface Coating of Large Appliances [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Large Appliances [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604

RACT VOC CTG Surface Coating of Large Appliances [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Surface Coating of Large Appliances [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Metal Furniture [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Surface Coating of Metal Furniture [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Metal Furniture [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Metal Furniture [Sacramento]	09/15/2006	04/05/2011	Approval	01/20/2012	76 FR 71886
RACT VOC CTG Surface Coating of Metal Furniture [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [El Dorado]	09/15/2006	09/30/2013	Approval	03/17/2014	79 FR 2375
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Sacramento]	09/15/2006	04/05/2011	Approval	01/20/2012	76 FR 71886
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Surface Coating of Paper [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Surface Coating of Paper [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Paper [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Paper [Sacramento]	09/15/2006	04/29/2009	Approval	06/08/2010	75 FR 18068
RACT VOC CTG Surface Coating of Paper [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Tank Truck Gasoline Loading Terminals [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Use of Cutback Asphalt [El Dorado]	09/15/2006	07/11/2007	Approval	04/14/2014	79 FR 14176
RACT VOC CTG Use of Cutback Asphalt [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Use of Cutback Asphalt [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Use of Cutback Asphalt [Sacramento]	09/15/2006	07/11/2007	Approval	09/30/2016	81 FR 53280
RACT VOC CTG Use of Cutback Asphalt [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RACT VOC CTG Wood Furniture [El Dorado]	09/15/2006	07/11/2007	Approval	05/19/2014	79 FR 21849
RACT VOC CTG Wood Furniture [Feather River]	09/15/2006	07/01/2007	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Wood Furniture [Placer]	09/15/2006	07/11/2007	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Wood Furniture [Sacramento]	09/15/2006	04/29/2009	Approval	06/08/2010	75 FR 18068
RACT VOC CTG Wood Furniture [Yolo-Solano]	09/15/2006	01/31/2007	Completeness	07/31/2007	
RFP VOC and NOX - Serious	06/15/2007	12/31/2013	Proposed approval	10/15/2014	79 FR 61799
RFP VOC and NOX - Severe 15	See Note	12/31/2013	Proposed approval	10/15/2014	79 FR 61799
Severe/Extreme Area Fee Program (Section 185) [El Dorado]	See Note				
Severe/Extreme Area Fee Program (Section 185) [Feather River]	See Note				
Severe/Extreme Area Fee Program (Section 185) [Placer]	See Note				
Severe/Extreme Area Fee Program (Section 185) [Sacramento]	See Note				
Severe/Extreme Area Fee Program (Section 185) [Yolo-Solano]	See Note				
Stage II or Equivalent	06/15/2007				
VMT - TCMs to Offset Growth	See Note	12/31/2013	Proposed approval	10/15/2014	79 FR 61799

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California: Ozone-8Hr (1997) / San Diego

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
Emission Inventory	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
Emission Statement	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
I/M Basic	06/13/2013	06/05/2009	Approval	08/02/2010	75 FR 38023
Nonattainment NSR rules - Moderate	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
Ozone Attainment Demonstration	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230

RACT Non-CTG VOC for Major Sources	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT NOX for Major Sources	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Aerospace	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Bulk Gasoline Plants	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Flat Wood Paneling Coatings (2006)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Flexible Packaging Printing Materials (2006)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Industrial Cleaning Solvents (2006)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Large Appliance Coatings (2007)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Large Petroleum Dry Cleaners	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Leaks from Petroleum Refinery Equipment	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Metal Furniture Coatings (2007)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Plastic Parts Coatings (2008)	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG SOCMI Air Oxidation Processes	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG SOCMI Distillation and Reactor Processes	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Shipbuilding/repair	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Solvent Metal Cleaning	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating of Cans	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating of Coils	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating of Fabrics	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating of Large Appliances	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230

RACT VOC CTG Surface Coating of Metal Furniture	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Surface Coating of Paper	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Tank Truck Gasoline Loading Terminals	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Use of Cutback Asphalt	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RACT VOC CTG Wood Furniture	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230
RFP VOC and NOX - Moderate	06/13/2013		Redesignation approved	07/05/2013	78 FR 33230

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California: Ozone-8Hr (1997) / San Francisco Bay Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory	06/15/2006				
Emission Statement	06/15/2007				
Nonattainment NSR rules - Marginal	06/15/2007		Approval	06/20/2018	83 FR 23372

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California: Ozone-8Hr (1997) / San Joaquin Valley Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Boilers	See Note	11/15/2004	Approval	04/07/2010	75 FR 10420
Clean Fuels for Fleets 182(c)(4)	06/15/2007		Approval	04/30/2012	77 FR 12652
Contingency Measures VOC and NOX	06/15/2007		Approval	04/30/2012	77 FR 12652
Contingency Provisions for RFP Milestones 182(c)(9)	06/15/2007	11/16/2007	Approval	04/30/2012	77 FR 12652
Emission Inventory	06/15/2006		Approval	04/30/2012	77 FR 12652
Emission Statement	06/15/2007				
I/M Enhanced	05/08/2007	06/05/2009	Approval	08/02/2010	75 FR 38023
Nonattainment NSR rules - Serious	06/15/2007				
Nonattainment NSR rules - Extreme	See Note	03/17/2009	Approval	12/06/2011	76 FR 76046
Ozone Attainment Demonstration	06/15/2007	11/16/2007	Approval	04/30/2012	77 FR 12652
RACT Non-CTG VOC for Major Sources	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT NOX for Major Sources	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Aerospace	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	09/30/2009	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Bulk Gasoline Plants	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	09/30/2009	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Flat Wood Paneling Coatings (2006)	09/29/2007	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Flexible Packaging Printing Materials (2006)	09/29/2007	06/18/2008	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Industrial Cleaning Solvents (2006)	09/29/2007	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Large Appliance Coatings (2007)	09/28/2008	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Large Petroleum Dry Cleaners	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Leaks from Petroleum Refinery Equipment	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	09/29/2007	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	09/15/2006	06/20/2011	Approval	04/30/2012	77 FR 12491
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	09/15/2006	06/18/2009	Approval	04/30/2012	77 FR 12491
RACT VOC CTG Metal Furniture Coatings (2007)	09/28/2008	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	09/30/2009	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	09/30/2009	06/18/2009	Approval	02/09/2012	77 FR 1417

RACT VOC CTG Paper, Film, and Foil Coatings (2007)	09/28/2008	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Plastic Parts Coatings (2008)	09/30/2009	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG SOCMI Air Oxidation Processes	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG SOCMI Distillation and Reactor Processes	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Shipbuilding/repair	09/15/2006	06/18/2009	Approval	04/30/2012	77 FR 12491
RACT VOC CTG Solvent Metal Cleaning	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Cans	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Coils	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Fabrics	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Large Appliances	09/15/2006	06/28/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Metal Furniture	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Surface Coating of Paper	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Tank Truck Gasoline Loading Terminals	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Use of Cutback Asphalt	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RACT VOC CTG Wood Furniture	09/15/2006	06/18/2009	Approval	02/09/2012	77 FR 1417
RFP VOC and NOX - Serious	06/15/2007	11/16/2007	Approval	04/30/2012	77 FR 12652
RFP VOC and NOX - Extreme	See Note	11/16/2007	Approval	04/30/2012	77 FR 12652
Severe/Extreme Area Fee Program (Section 185)	See Note				
Stage II or Equivalent	06/15/2007		Approval	11/30/2009	74 FR 56120
VMT - TCMs to Offset Growth	See Note	12/20/2013	Approval	05/05/2016	81 FR 19492

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California: Ozone-8Hr (1997) / Sutter County (part) (Sutter Buttes)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory	06/13/2013				
Emission Statement	06/13/2013				
Nonattainment NSR rules - Marginal	06/13/2013				

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California: Ozone-8Hr (1997) / Ventura County (part) Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	06/27/2008	11/04/1994	Approval	09/27/1999	64 FR 46849
Contingency Measures VOC and NOX	06/15/2007		Clean Data Determination	01/02/2013	77 FR 71551
Contingency Provisions for RFP Milestones 182(c)(9)	06/27/2008		Clean Data Determination	01/02/2013	77 FR 71551
Emission Inventory	06/15/2006				
Emission Statement	06/15/2007				
I/M Basic	05/08/2007				
I/M Enhanced	06/27/2008	06/05/2009	Approval	08/02/2010	75 FR 38023
Nonattainment NSR rules - Moderate	06/15/2007	06/16/2006	Approval	02/10/2010	75 FR 1284
Nonattainment NSR rules - Serious	06/27/2008	06/16/2006	Approval	02/10/2010	75 FR 1284
Ozone Attainment Demonstration	06/27/2008		Clean Data Determination	01/02/2013	77 FR 71551
RACT Non-CTG VOC for Major Sources	09/15/2006	06/27/2008	Approval	05/21/2009	74 FR 18149
RACT NOX for Major Sources	09/15/2006	06/27/2008	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Aerospace	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	09/30/2009	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Bulk Gasoline Plants	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149

RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	09/30/2009	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Flat Wood Paneling Coatings (2006)	09/29/2007	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Flexible Packaging Printing Materials (2006)	09/29/2007	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Industrial Cleaning Solvents (2006)	09/29/2007	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Large Appliance Coatings (2007)	09/28/2008	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Large Petroleum Dry Cleaners	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Leaks from Petroleum Refinery Equipment	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	09/29/2007	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Metal Furniture Coatings (2007)	09/28/2008	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	09/30/2009	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	09/30/2009	01/10/2010	Approval	07/25/2011	76 FR 30025
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	09/28/2008	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Plastic Parts Coatings (2008)	09/30/2009	11/17/2009	Completeness	05/17/2010	
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG SOCMI Air Oxidation Processes	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG SOCMI Distillation and Reactor Processes	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Shipbuilding/repair	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Solvent Metal Cleaning	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Cans	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Coils	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Fabrics	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Large Appliances	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Metal Furniture	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Surface Coating of Paper	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Tank Truck Gasoline Loading Terminals	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Use of Cutback Asphalt	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RACT VOC CTG Wood Furniture	09/15/2006	01/31/2007	Approval	05/21/2009	74 FR 18149
RFP VOC and NOX - Moderate	06/15/2007		Failure to submit	03/24/2008	
RFP VOC and NOX - Serious	06/27/2008		Clean Data Determination	01/02/2013	77 FR 71551
Stage II or Equivalent	06/27/2008				

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California: Ozone-8Hr (2008) / Calaveras County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory	07/20/2014	07/17/2014	Approval	12/19/2016	81 FR 71997
Emission Statement	07/20/2014	11/21/2018	Approval	11/29/2019	84 FR 57822
Nonattainment NSR rules - Marginal	07/20/2015	04/05/2019	Completeness	04/12/2019	

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California: Ozone-8Hr (2008) / Chico (Butte County)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory	07/20/2014	07/17/2014	Approval	12/19/2016	81 FR 71997
Emission Statement	07/20/2014	02/10/2014	Approval	08/10/2015	80 FR 33195

Nonattainment NSR rules - Marginal	07/20/2015	11/06/2014	Approval	07/06/2018	83 FR 26222

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California: Ozone-8Hr (2008) / Imperial County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	01/01/2017	11/14/2017	Approval	03/30/2020	85 FR 11817
Emission Inventory	07/20/2014	11/14/2017	Approval	03/30/2020	85 FR 11817
Emission Statement	07/20/2014	11/14/2017	Approval	03/30/2020	85 FR 11817
Nonattainment NSR rules - Marginal	07/20/2015	01/21/2014	Approval	10/05/2017	82 FR 41895
Nonattainment NSR rules - Moderate	01/01/2017	01/21/2014	Approval	10/05/2017	82 FR 41895
Ozone Attainment Demonstration	01/01/2017	11/14/2017	Approval	03/30/2020	85 FR 11817
RACT Non-CTG VOC for Major Sources	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT NOX for Major Sources	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Aerospace	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Bulk Gasoline Plants	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Flat Wood Paneling Coatings (2006)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Flexible Packaging Printing Materials (2006)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Industrial Cleaning Solvents (2006)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Large Appliance Coatings (2007)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Large Petroleum Dry Cleaners	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Leaks from Petroleum Refinery Equipment	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Metal Furniture Coatings (2007)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Plastic Parts Coatings (2008)	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG SOCMI Air Oxidation Processes	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG SOCMI Distillation and Reactor Processes	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Shipbuilding/repair	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Solvent Metal Cleaning	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Cans	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Coils	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Fabrics	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Large Appliances	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Metal Furniture	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Surface Coating of Paper	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Tank Truck Gasoline Loading Terminals	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202

RACT VOC CTG Use of Cutback Asphalt	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RACT VOC CTG Wood Furniture	01/01/2017	11/14/2017	Proposed approval	09/19/2019	84 FR 49202
RFP VOC and NOX - Moderate	01/01/2017	12/11/2018	Approval	03/30/2020	85 FR 11817

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California: Ozone-8Hr (2008) / Kern County (Eastern Kern)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	01/01/2017	10/25/2017	Completeness	04/25/2018	
Emission Inventory	07/20/2014	10/25/2017	Completeness	04/25/2018	
Emission Statement	07/20/2014	10/25/2017	Completeness	04/25/2018	
Nonattainment NSR rules - Marginal	07/20/2015	05/23/2018	Completeness	08/28/2018	
Nonattainment NSR rules - Moderate	01/01/2017	05/23/2018	Completeness	08/28/2018	
Nonattainment NSR rules - Serious	08/06/2019	05/23/2018	Completeness	08/28/2018	
Ozone Attainment Demonstration	01/01/2017	10/25/2017	Completeness	04/25/2018	
Ozone Attainment Demonstration - Serious	08/06/2019				
RACT Non-CTG VOC for Major Sources	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT NOX for Major Sources	01/01/2017	08/22/2018	Completeness	02/11/2019	
RACT VOC CTG Aerospace	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Bulk Gasoline Plants	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Flat Wood Paneling Coatings (2006)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Flexible Packaging Printing Materials (2006)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Industrial Cleaning Solvents (2006)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Large Appliance Coatings (2007)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Large Petroleum Dry Cleaners	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Leaks from Petroleum Refinery Equipment	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Metal Furniture Coatings (2007)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Plastic Parts Coatings (2008)	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG SOCMI Air Oxidation Processes	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG SOCMI Distillation and Reactor Processes	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Shipbuilding/repair	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Solvent Metal Cleaning	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating of Cans	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating of Coils	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating of Fabrics	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating of Large Appliances	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating of Metal Furniture	01/01/2017	08/09/2017	Completeness	02/09/2018	

RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Surface Coating of Paper	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Tank Truck Gasoline Loading Terminals	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Use of Cutback Asphalt	01/01/2017	08/09/2017	Completeness	02/09/2018	
RACT VOC CTG Wood Furniture	01/01/2017	08/09/2017	Completeness	02/09/2018	
RFP VOC and NOX - Moderate	01/01/2017	12/11/2018	Completeness	06/11/2019	
RFP VOC and NOX - Serious	08/06/2019	12/11/2018	Completeness	06/11/2019	

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California: Ozone-8Hr (2008) / Los Angeles-San Bernardino Counties (West Mojave Desert)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	07/20/2015				
Contingency Measures VOC and NOX	07/20/2016	06/02/2017	Completeness	11/22/2017	
Contingency Provisions for RFP Milestones 182(c)(9)	07/20/2016	06/02/2017	Completeness	11/22/2017	
Emission Inventory	07/20/2014	06/02/2017	Completeness	12/02/2017	
Emission Statement	07/20/2014	06/02/2017	Completeness	11/22/2017	
I/M Enhanced	07/20/2016				
Nonattainment NSR rules - Severe 15 [Antelope Valley]	07/20/2015	08/31/2018	Proposed approval	05/10/2019	84 FR 20604
Nonattainment NSR rules - Severe 15 [Mojave Desert]	07/20/2015	01/24/2017	Completeness	04/17/2017	
Ozone Attainment Demonstration	07/20/2016	06/02/2017	Completeness	11/22/2017	
RACT Non-CTG VOC for Major Sources [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT Non-CTG VOC for Major Sources [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT NOX for Major Sources [Antelope Valley]	07/20/2014	10/29/2018	Completeness	04/29/2019	
RACT NOX for Major Sources [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Aerospace [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Aerospace [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Antelope Valley]	07/20/2014	10/23/2015	Approval	06/25/2018	83 FR 24033
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Bulk Gasoline Plants [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Bulk Gasoline Plants [Mojave Desert]	07/20/2014	09/09/2015	Approval	06/01/2020	85 FR 25293
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/30/2020	85 FR 11812
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Industrial Cleaning Solvents (2006) [Antelope Valley]	07/20/2014	10/23/2015	Approval	08/01/2019	84 FR 31684
RACT VOC CTG Industrial Cleaning Solvents (2006) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Large Appliance Coatings (2007) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Large Appliance Coatings (2007) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Large Petroleum Dry Cleaners [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923

RACT VOC CTG Large Petroleum Dry Cleaners [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Metal Furniture Coatings (2007) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Metal Furniture Coatings (2007) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/30/2020	85 FR 11812
RACT VOC CTG Oil and Natural Gas Industry (2016) [Antelope Valley]	10/27/2018	05/01/2020	Submission	05/01/2020	
RACT VOC CTG Oil and Natural Gas Industry (2016) [Mojave Desert]	10/27/2018	12/20/2019	Submission	12/20/2019	
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Mojave Desert]	07/20/2014	09/09/2015	Approval	06/01/2020	85 FR 25293
RACT VOC CTG Plastic Parts Coatings (2008) [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Plastic Parts Coatings (2008) [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/30/2020	85 FR 11812
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG SOCMI Air Oxidation Processes [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG SOCMI Air Oxidation Processes [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG SOCMI Distillation and Reactor Processes [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG SOCMI Distillation and Reactor Processes [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Shipbuilding/repair [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Shipbuilding/repair [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Solvent Metal Cleaning [Antelope Valley]	07/20/2014	10/23/2015	Approval	08/01/2019	84 FR 31684
RACT VOC CTG Solvent Metal Cleaning [Mojave Desert]	07/20/2014	09/09/2015	Approval	08/01/2019	84 FR 31682
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Mojave Desert]	07/20/2014	09/09/2015	Approval	06/01/2020	85 FR 25293
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Mojave Desert]	07/20/2014	09/09/2015	Approval	06/01/2020	85 FR 25293
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923

RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Antelope Valley]	07/20/2014	08/09/2017	Approval	06/25/2018	83 FR 24033
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Cans [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Cans [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Coils [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Coils [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Fabrics [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Fabrics [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Large Appliances [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Large Appliances [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Metal Furniture [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Metal Furniture [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Mojave Desert]	07/20/2014	05/23/2018	Approval	03/30/2020	85 FR 11812
RACT VOC CTG Surface Coating of Paper [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Surface Coating of Paper [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Antelope Valley]	07/20/2014	10/23/2015	Approval	06/03/2019	84 FR 19681
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Mojave Desert]	07/20/2014	09/09/2015	Approval	06/01/2020	85 FR 25293
RACT VOC CTG Use of Cutback Asphalt [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Use of Cutback Asphalt [Mojave Desert]	07/20/2014	09/09/2015	Approval	03/14/2018	83 FR 5921
RACT VOC CTG Wood Furniture [Antelope Valley]	07/20/2014	10/23/2015	Approval	11/09/2017	82 FR 46923
RACT VOC CTG Wood Furniture [Mojave Desert]	07/20/2014	09/09/2015	Approval	08/01/2019	84 FR 31682
RFP VOC and NOX - Severe 15	07/20/2016	12/11/2018	Completeness	06/11/2019	
Severe/Extreme Area Fee Program (Section 185) [Antelope Valley]	07/20/2022				
Severe/Extreme Area Fee Program (Section 185) [Mojave Desert]	07/20/2022				
VMT - TCMs to Offset Growth	07/20/2015	06/02/2017	Completeness	11/22/2017	

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California: Ozone-8Hr (2008) / Los Angeles-South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Boilers	07/20/2015	04/27/2017	Approval	10/31/2019	84 FR 52005
Clean Fuels for Fleets 182(c)(4)	07/20/2015	04/27/2017	Approval	10/31/2019	84 FR 52005
Contingency Measures VOC and NOX	07/20/2016	04/27/2017	Completeness	10/23/2017	
Contingency Provisions for RFP Milestones 182(c)(9)	07/20/2016	04/27/2017	Approval	10/31/2019	84 FR 52005
Emission Inventory	07/20/2014	04/27/2017	Approval	10/31/2019	84 FR 52005
Emission Statement	07/20/2014	04/27/2017	Approval	10/31/2019	84 FR 52005
I/M Enhanced	07/20/2016	04/27/2017	Approval	10/31/2019	84 FR 52005
Nonattainment NSR rules - Extreme	07/20/2015	11/16/2017	Approval	01/14/2019	83 FR 64026
Ozone Attainment Demonstration	07/20/2016	04/27/2017	Approval	10/31/2019	84 FR 52005
RACT Non-CTG VOC for Major Sources	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT NOX for Major Sources	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Aerospace	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Bulk Gasoline Plants	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Flat Wood Paneling Coatings (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Flexible Packaging Printing Materials (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Industrial Cleaning Solvents (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Large Appliance Coatings (2007)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850

RACT VOC CTG Large Petroleum Dry Cleaners	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Leaks from Petroleum Refinery Equipment	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Metal Furniture Coatings (2007)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	12/11/2018	Completeness	06/11/2019	
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Plastic Parts Coatings (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG SOCMI Air Oxidation Processes	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG SOCMI Distillation and Reactor Processes	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Shipbuilding/repair	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Solvent Metal Cleaning	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Cans	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Coils	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Fabrics	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Large Appliances	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Metal Furniture	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Paper	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Tank Truck Gasoline Loading Terminals	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Use of Cutback Asphalt	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Wood Furniture	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RFP VOC and NOX - Extreme	07/20/2016	12/11/2018	Approval	10/31/2019	84 FR 52005
Severe/Extreme Area Fee Program (Section 185)	07/20/2022				
VMT - TCMs to Offset Growth	07/20/2015	04/27/2017	Approval	10/31/2019	84 FR 52005

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California: Ozone-8Hr (2008) / Mariposa County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	01/01/2017		Clean Data Determination	03/21/2017	81 FR 93624
Emission Inventory	07/20/2014	07/17/2014	Completeness	01/17/2015	
Emission Statement	07/20/2014	04/30/2019	Proposed approval	03/16/2020	85 FR 14845
Nonattainment NSR rules - Marginal	07/20/2015	04/05/2019	Completeness	04/12/2019	
Nonattainment NSR rules - Moderate	01/01/2017	04/05/2019	Completeness	04/12/2019	
Ozone Attainment Demonstration	01/01/2017		Clean Data Determination	03/21/2017	81 FR 93624
RACT Non-CTG VOC for Major Sources	01/01/2017				
RACT NOX for Major Sources	01/01/2017				
RACT VOC CTG Aerospace	01/01/2017				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	01/01/2017				
RACT VOC CTG Bulk Gasoline Plants	01/01/2017				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	01/01/2017				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	01/01/2017				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	01/01/2017				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	01/01/2017				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	01/01/2017				

RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	01/01/2017				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	01/01/2017				
RACT VOC CTG Industrial Cleaning Solvents (2006)	01/01/2017				
RACT VOC CTG Large Appliance Coatings (2007)	01/01/2017				
RACT VOC CTG Large Petroleum Dry Cleaners	01/01/2017				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	01/01/2017				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	01/01/2017				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	01/01/2017				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	01/01/2017				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	01/01/2017				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	01/01/2017				
RACT VOC CTG Metal Furniture Coatings (2007)	01/01/2017				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	01/01/2017				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	01/01/2017				
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	05/01/2020	Submission	05/01/2020	
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	01/01/2017				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	01/01/2017				
RACT VOC CTG Plastic Parts Coatings (2008)	01/01/2017				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	01/01/2017				
RACT VOC CTG SOCMI Air Oxidation Processes	01/01/2017				
RACT VOC CTG SOCMI Distillation and Reactor Processes	01/01/2017				
RACT VOC CTG Shipbuilding/repair	01/01/2017				
RACT VOC CTG Solvent Metal Cleaning	01/01/2017				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	01/01/2017				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	01/01/2017				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	01/01/2017				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	01/01/2017				
RACT VOC CTG Surface Coating of Cans	01/01/2017				
RACT VOC CTG Surface Coating of Coils	01/01/2017				
RACT VOC CTG Surface Coating of Fabrics	01/01/2017				
RACT VOC CTG Surface Coating of Large Appliances	01/01/2017				
RACT VOC CTG Surface Coating of Metal Furniture	01/01/2017				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	01/01/2017				
RACT VOC CTG Surface Coating of Paper	01/01/2017				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	01/01/2017				
RACT VOC CTG Use of Cutback Asphalt	01/01/2017				
RACT VOC CTG Wood Furniture	01/01/2017				
RFP VOC and NOX - Moderate	01/01/2017		Clean Data Determination	03/21/2017	81 FR 93624

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California: Ozone-8Hr (2008) / Morongo Band of Mission Indians

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	See Note				
Emission Inventory	See Note				
Emission Statement	See Note				
Nonattainment NSR rules - Serious	See Note				
Ozone Attainment Demonstration	See Note				
RACT Non-CTG VOC for Major Sources	See Note				
RACT NOX for Major Sources	See Note				
RACT VOC CTG Aerospace	See Note				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	See Note				
RACT VOC CTG Bulk Gasoline Plants	See Note				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	See Note				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	See Note				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	See Note				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	See Note				

RACT VOC CTG Flexible Packaging Printing Materials (2006)	See Note				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	See Note				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	See Note				
RACT VOC CTG Industrial Cleaning Solvents (2006)	See Note				
RACT VOC CTG Large Appliance Coatings (2007)	See Note				
RACT VOC CTG Large Petroleum Dry Cleaners	See Note				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	See Note				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	See Note				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	See Note				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	See Note				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	See Note				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	See Note				
RACT VOC CTG Metal Furniture Coatings (2007)	See Note				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	See Note				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	See Note				
RACT VOC CTG Oil and Natural Gas Industry (2016)	See Note				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	See Note				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	See Note				
RACT VOC CTG Plastic Parts Coatings (2008)	See Note				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	See Note				
RACT VOC CTG SOCMI Air Oxidation Processes	See Note				
RACT VOC CTG SOCMI Distillation and Reactor Processes	See Note				
RACT VOC CTG Shipbuilding/repair	See Note				
RACT VOC CTG Solvent Metal Cleaning	See Note				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	See Note				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	See Note				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	See Note				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	See Note				
RACT VOC CTG Surface Coating of Cans	See Note				
RACT VOC CTG Surface Coating of Coils	See Note				
RACT VOC CTG Surface Coating of Fabrics	See Note				
RACT VOC CTG Surface Coating of Large Appliances	See Note				
RACT VOC CTG Surface Coating of Metal Furniture	See Note				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	See Note				
RACT VOC CTG Surface Coating of Paper	See Note				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	See Note				
RACT VOC CTG Use of Cutback Asphalt	See Note				
RACT VOC CTG Wood Furniture	See Note				
RFP VOC and NOX - Serious	See Note				

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California: Ozone-8Hr (2008) / Nevada County (Western part)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	01/01/2017	12/07/2018	Completeness	06/07/2019	
Emission Inventory	07/20/2014	12/07/2018	Completeness	06/07/2019	
Emission Statement	07/20/2014	12/07/2018	Completeness	06/07/2019	
Nonattainment NSR rules - Marginal	07/20/2015	09/06/2016	Completeness	09/28/2016	
Nonattainment NSR rules - Moderate	01/01/2017	09/06/2016	Completeness	09/28/2016	
Nonattainment NSR rules - Serious	08/03/2020				
Ozone Attainment Demonstration	01/01/2017	12/07/2018	Completeness	06/07/2019	
Ozone Attainment Demonstration - Serious	08/03/2020				
RACT Non-CTG VOC for Major Sources	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT NOX for Major Sources	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Aerospace	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Bulk Gasoline Plants	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313

RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Flat Wood Paneling Coatings (2006)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Flexible Packaging Printing Materials (2006)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Industrial Cleaning Solvents (2006)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Large Appliance Coatings (2007)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Large Petroleum Dry Cleaners	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Leaks from Petroleum Refinery Equipment	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Metal Furniture Coatings (2007)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Plastic Parts Coatings (2008)	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG SOCMI Air Oxidation Processes	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG SOCMI Distillation and Reactor Processes	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Shipbuilding/repair	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Solvent Metal Cleaning	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Cans	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Coils	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Fabrics	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Large Appliances	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Metal Furniture	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Surface Coating of Paper	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Tank Truck Gasoline Loading Terminals	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Use of Cutback Asphalt	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RACT VOC CTG Wood Furniture	01/01/2017	06/07/2018	Approval	02/14/2020	85 FR 2313
RFP VOC and NOX - Moderate	01/01/2017	12/07/2018	Completeness	06/07/2019	
RFP VOC and NOX - Serious	08/03/2020	12/07/2018	Completeness	06/07/2019	

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California: Ozone-8Hr (2008) / Pechanga Band of Luise&#65533;o Mission Indians of the Pechanga Reservation

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	See Note				
Emission Inventory	See Note				
Emission Statement	See Note				
Nonattainment NSR rules - Moderate	See Note				
Ozone Attainment Demonstration	See Note				
RACT Non-CTG VOC for Major Sources	See Note				
RACT NOX for Major Sources	See Note				
RACT VOC CTG Aerospace	See Note				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	See Note				
RACT VOC CTG Bulk Gasoline Plants	See Note				

RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	See Note				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	See Note				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	See Note				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	See Note				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	See Note				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	See Note				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	See Note				
RACT VOC CTG Industrial Cleaning Solvents (2006)	See Note				
RACT VOC CTG Large Appliance Coatings (2007)	See Note				
RACT VOC CTG Large Petroleum Dry Cleaners	See Note				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	See Note				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	See Note				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	See Note				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	See Note				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	See Note				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	See Note				
RACT VOC CTG Metal Furniture Coatings (2007)	See Note				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	See Note				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	See Note				
RACT VOC CTG Oil and Natural Gas Industry (2016)	See Note				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	See Note				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	See Note				
RACT VOC CTG Plastic Parts Coatings (2008)	See Note				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	See Note				
RACT VOC CTG SOCMI Air Oxidation Processes	See Note				
RACT VOC CTG SOCMI Distillation and Reactor Processes	See Note				
RACT VOC CTG Shipbuilding/repair	See Note				
RACT VOC CTG Solvent Metal Cleaning	See Note				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	See Note				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	See Note				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	See Note				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	See Note				
RACT VOC CTG Surface Coating of Cans	See Note				
RACT VOC CTG Surface Coating of Coils	See Note				
RACT VOC CTG Surface Coating of Fabrics	See Note				
RACT VOC CTG Surface Coating of Large Appliances	See Note				
RACT VOC CTG Surface Coating of Metal Furniture	See Note				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	See Note				
RACT VOC CTG Surface Coating of Paper	See Note				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	See Note				
RACT VOC CTG Use of Cutback Asphalt	See Note				
RACT VOC CTG Wood Furniture	See Note				
RFP VOC and NOX - Moderate	See Note				

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California: Ozone-8Hr (2008) / Riverside County (Coachella Valley)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	07/20/2015	04/27/2017	Proposed approval	01/17/2020	85 FR 2949
Contingency Measures VOC and NOX	07/20/2016	05/05/2017	Completeness	10/23/2017	
Contingency Provisions for RFP Milestones 182(c)(9)	07/20/2016	04/27/2017	Proposed approval	01/17/2020	85 FR 2949
Emission Inventory	07/20/2014	04/27/2017	Proposed approval	01/17/2020	85 FR 2949
Emission Statement	07/20/2014	04/27/2017	Proposed approval	01/17/2020	85 FR 2949
I/M Enhanced	07/20/2016	04/27/2017	Proposed approval	01/17/2020	85 FR 2949
Nonattainment NSR rules - Severe 15	07/20/2015	11/16/2017	Approval	01/14/2019	83 FR 64026
Ozone Attainment Demonstration	07/20/2016	04/27/2017	Proposed approval	01/17/2020	85 FR 2949
RACT Non-CTG VOC for Major Sources	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT NOX for Major Sources	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850

RACT VOC CTG Aerospace	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Bulk Gasoline Plants	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Flat Wood Paneling Coatings (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Flexible Packaging Printing Materials (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Industrial Cleaning Solvents (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Large Appliance Coatings (2007)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Large Petroleum Dry Cleaners	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Leaks from Petroleum Refinery Equipment	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Metal Furniture Coatings (2007)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	12/11/2018	Completeness	06/11/2019	
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Plastic Parts Coatings (2008)	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG SOCMI Air Oxidation Processes	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG SOCMI Distillation and Reactor Processes	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Shipbuilding/repair	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Solvent Metal Cleaning	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Cans	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Coils	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Fabrics	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Large Appliances	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Metal Furniture	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Surface Coating of Paper	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Tank Truck Gasoline Loading Terminals	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Use of Cutback Asphalt	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RACT VOC CTG Wood Furniture	07/20/2014	07/18/2014	Approval	10/20/2017	82 FR 43850
RFP VOC and NOX - Severe 15	07/20/2016	12/11/2018	Proposed approval	01/17/2020	85 FR 2949
Severe/Extreme Area Fee Program (Section 185)	07/20/2022				
VMT - TCMs to Offset Growth	07/20/2015	04/27/2017	Proposed approval	01/17/2020	85 FR 2949

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California: Ozone-8Hr (2008) / Sacramento Metro

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Fleets 182(c)(4)	07/20/2015				
Contingency Measures VOC and NOX	07/20/2016	12/17/2018	Completeness	06/14/2018	
Contingency Provisions for RFP Milestones 182(c)(9)	07/20/2016	12/17/2018	Completeness	12/17/2018	
Emission Inventory	07/20/2014				

Emission Statement	07/20/2014				
I/M Enhanced	07/20/2016				
Nonattainment NSR rules - Severe 15 [El Dorado]	07/20/2015	03/21/2016	Completeness	03/30/2016	
Nonattainment NSR rules - Severe 15 [Feather River]	07/20/2015	11/06/2014	Approval	12/04/2015	80 FR 60047
Nonattainment NSR rules - Severe 15 [Placer]	07/20/2015	05/13/2014	Approval	11/28/2014	79 FR 58263
Nonattainment NSR rules - Severe 15 [Sacramento]	07/20/2015	09/26/2012	Approval	09/30/2013	78 FR 53270
Nonattainment NSR rules - Severe 15 [Yolo-Solano]	07/20/2015	06/19/2018	Approval	01/14/2019	83 FR 64026
Ozone Attainment Demonstration	07/20/2016	12/17/2018	Completeness	06/14/2018	
RACT Non-CTG VOC for Major Sources [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT Non-CTG VOC for Major Sources [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT Non-CTG VOC for Major Sources [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT Non-CTG VOC for Major Sources [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT Non-CTG VOC for Major Sources [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT NOX for Major Sources [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT NOX for Major Sources [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT NOX for Major Sources [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT NOX for Major Sources [Sacramento]	07/20/2014	08/20/2018	Completeness	08/23/2018	
RACT NOX for Major Sources [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Aerospace [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Aerospace [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Aerospace [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Aerospace [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Aerospace [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Bulk Gasoline Plants [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Bulk Gasoline Plants [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Bulk Gasoline Plants [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Bulk Gasoline Plants [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Bulk Gasoline Plants [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Flat Wood Paneling Coatings (2006) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072

RACT VOC CTG Flexible Packaging Printing Materials (2006) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Industrial Cleaning Solvents (2006) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Industrial Cleaning Solvents (2006) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Industrial Cleaning Solvents (2006) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Industrial Cleaning Solvents (2006) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Industrial Cleaning Solvents (2006) [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Large Appliance Coatings (2007) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Large Appliance Coatings (2007) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Large Appliance Coatings (2007) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Large Appliance Coatings (2007) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Large Appliance Coatings (2007) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Large Petroleum Dry Cleaners [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Large Petroleum Dry Cleaners [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Large Petroleum Dry Cleaners [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Large Petroleum Dry Cleaners [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Large Petroleum Dry Cleaners [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Leaks from Petroleum Refinery Equipment [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604

RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Yolo-Solano]	07/20/2014	08/20/2018	Completeness	08/23/2018	
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Metal Furniture Coatings (2007) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Metal Furniture Coatings (2007) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Metal Furniture Coatings (2007) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Metal Furniture Coatings (2007) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Metal Furniture Coatings (2007) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Oil and Natural Gas Industry (2016) [El Dorado]	10/27/2018	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Oil and Natural Gas Industry (2016) [Feather River]	10/27/2018	12/07/2018	Completeness	06/07/2019	
RACT VOC CTG Oil and Natural Gas Industry (2016) [Placer]	10/27/2018	01/23/2020	Submission	01/23/2020	
RACT VOC CTG Oil and Natural Gas Industry (2016) [Sacramento]	10/27/2018	12/11/2018	Completeness	06/11/2019	
RACT VOC CTG Oil and Natural Gas Industry (2016) [Yolo-Solano]	10/27/2018	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072

RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Plastic Parts Coatings (2008) [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Plastic Parts Coatings (2008) [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Plastic Parts Coatings (2008) [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Plastic Parts Coatings (2008) [Sacramento]	07/20/2014	05/23/2018	Completeness	08/23/2018	
RACT VOC CTG Plastic Parts Coatings (2008) [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG SOCMI Air Oxidation Processes [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG SOCMI Air Oxidation Processes [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG SOCMI Air Oxidation Processes [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG SOCMI Air Oxidation Processes [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG SOCMI Air Oxidation Processes [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG SOCMI Distillation and Reactor Processes [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG SOCMI Distillation and Reactor Processes [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG SOCMI Distillation and Reactor Processes [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG SOCMI Distillation and Reactor Processes [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG SOCMI Distillation and Reactor Processes [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Shipbuilding/repair [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Shipbuilding/repair [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Shipbuilding/repair [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Shipbuilding/repair [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Shipbuilding/repair [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Solvent Metal Cleaning [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Solvent Metal Cleaning [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Solvent Metal Cleaning [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Solvent Metal Cleaning [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Solvent Metal Cleaning [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Feather River]	07/20/2014	11/06/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Yolo-Solano]	07/20/2014	06/26/2015	Approval	04/11/2016	81 FR 6763
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696

RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating of Cans [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Cans [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Cans [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Cans [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Cans [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating of Coils [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Coils [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Coils [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Coils [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Coils [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating of Fabrics [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Fabrics [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Fabrics [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Fabrics [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Fabrics [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating of Large Appliances [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Large Appliances [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Large Appliances [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Large Appliances [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Large Appliances [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating of Metal Furniture [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Metal Furniture [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Metal Furniture [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Metal Furniture [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Metal Furniture [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Surface Coating of Paper [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Surface Coating of Paper [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Surface Coating of Paper [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Surface Coating of Paper [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Surface Coating of Paper [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RACT VOC CTG Tank Truck Gasoline Loading Terminals [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Use of Cutback Asphalt [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Use of Cutback Asphalt [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959

RACT VOC CTG Use of Cutback Asphalt [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Use of Cutback Asphalt [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Use of Cutback Asphalt [Yolo-Solano]	07/20/2014	11/13/2017	Completeness	08/23/2018	
RACT VOC CTG Wood Furniture [El Dorado]	07/20/2014	01/04/2017	Approval	01/30/2019	83 FR 67696
RACT VOC CTG Wood Furniture [Feather River]	07/20/2014	09/29/2014	Approval	09/08/2015	80 FR 38959
RACT VOC CTG Wood Furniture [Placer]	07/20/2014	07/18/2014	Approval	09/14/2017	82 FR 38604
RACT VOC CTG Wood Furniture [Sacramento]	07/20/2014	05/05/2017	Completeness	10/31/2017	
RACT VOC CTG Wood Furniture [Yolo-Solano]	07/20/2014	11/13/2017	Approval	08/02/2018	83 FR 31072
RFP VOC and NOX - Severe 15	07/20/2016	12/11/2018	Completeness	06/11/2019	
Severe/Extreme Area Fee Program (Section 185) [El Dorado]	07/20/2022				
Severe/Extreme Area Fee Program (Section 185) [Feather River]	07/20/2022				
Severe/Extreme Area Fee Program (Section 185) [Placer]	07/20/2022				
Severe/Extreme Area Fee Program (Section 185) [Sacramento]	07/20/2022				
Severe/Extreme Area Fee Program (Section 185) [Yolo-Solano]	07/20/2022				
VMT - TCMs to Offset Growth	07/20/2015	12/18/2017	Completeness	06/14/2018	

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California: Ozone-8Hr (2008) / San Diego County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	01/01/2017	04/12/2017	Completeness	10/12/2017	
Emission Inventory	07/20/2014				
Emission Statement	07/20/2014	04/12/2017	Completeness	10/12/2017	
I/M Basic	01/01/2017	04/12/2017	Completeness	10/12/2017	
I/M Enhanced	08/03/2020				
Nonattainment NSR rules - Marginal	07/20/2015	06/17/2016	Approval	11/05/2018	83 FR 50007
Nonattainment NSR rules - Moderate	01/01/2017	06/17/2016	Approval	11/05/2018	83 FR 50007
Nonattainment NSR rules - Serious	08/03/2020				
Ozone Attainment Demonstration	01/01/2017	04/12/2017	Completeness	10/12/2017	
Ozone Attainment Demonstration - Serious	08/03/2020				
RACT Non-CTG VOC for Major Sources	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT NOX for Major Sources	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Aerospace	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Bulk Gasoline Plants	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Flat Wood Paneling Coatings (2006)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Flexible Packaging Printing Materials (2006)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Industrial Cleaning Solvents (2006)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Large Appliance Coatings (2007)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Large Petroleum Dry Cleaners	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Leaks from Petroleum Refinery Equipment	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Metal Furniture Coatings (2007)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Plastic Parts Coatings (2008)	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG SOCMI Air Oxidation Processes	01/01/2017	04/12/2017	Completeness	10/12/2017	

RACT VOC CTG SOCMI Distillation and Reactor Processes	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Shipbuilding/repair	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Solvent Metal Cleaning	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Cans	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Coils	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Fabrics	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Large Appliances	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Metal Furniture	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Surface Coating of Paper	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Tank Truck Gasoline Loading Terminals	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Use of Cutback Asphalt	01/01/2017	04/12/2017	Completeness	10/12/2017	
RACT VOC CTG Wood Furniture	01/01/2017	04/12/2017	Completeness	10/12/2017	
RFP VOC and NOX - Moderate	01/01/2017	04/12/2017	Completeness	10/12/2017	
RFP VOC and NOX - Serious	08/03/2020				

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California: Ozone-8Hr (2008) / San Francisco Bay Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory	07/20/2014	07/17/2014	Approval	12/19/2016	81 FR 71997
Emission Statement	07/20/2014				
Nonattainment NSR rules - Marginal	07/20/2015	12/14/2017	Approval	06/20/2018	83 FR 23372

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California: Ozone-8Hr (2008) / San Joaquin Valley

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Clean Fuels for Boilers	07/20/2015	08/24/2016	Approval	03/14/2019	84 FR 3302
Clean Fuels for Fleets 182(c)(4)	07/20/2015		Approval	03/14/2019	84 FR 3302
Contingency Measures VOC and NOX	07/20/2016	08/24/2016	Approval	04/24/2019	84 FR 11198
Contingency Provisions for RFP Milestones 182(c)(9)	07/20/2016	08/24/2016	Approval	04/24/2019	84 FR 11198
Emission Inventory	07/20/2014	08/24/2016	Approval	04/24/2019	84 FR 11198
Emission Statement	07/20/2014	08/24/2016	Approval	03/14/2019	84 FR 3302
I/M Enhanced	07/20/2016		Approval	03/14/2019	84 FR 3302
Nonattainment NSR rules - Extreme	07/20/2015	06/19/2018	Approval	01/14/2019	83 FR 64026
Ozone Attainment Demonstration	07/20/2016	08/24/2016	Approval	03/14/2019	84 FR 3302
RACT Non-CTG VOC for Major Sources	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT NOX for Major Sources	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Aerospace	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Bulk Gasoline Plants	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Flat Wood Paneling Coatings (2006)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Flexible Packaging Printing Materials (2006)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Industrial Cleaning Solvents (2006)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Large Appliance Coatings (2007)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Large Petroleum Dry Cleaners	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Leaks from Petroleum Refinery Equipment	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006

RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Metal Furniture Coatings (2007)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	12/11/2018	Completeness	06/11/2019	
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Plastic Parts Coatings (2008)	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG SOCMI Air Oxidation Processes	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG SOCMI Distillation and Reactor Processes	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Shipbuilding/repair	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Solvent Metal Cleaning	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Cans	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Coils	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Fabrics	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Large Appliances	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Metal Furniture	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Surface Coating of Paper	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Tank Truck Gasoline Loading Terminals	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Use of Cutback Asphalt	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RACT VOC CTG Wood Furniture	07/20/2014	07/18/2014	Approval	09/17/2018	83 FR 41006
RFP VOC and NOX - Extreme	07/20/2016	12/11/2018	Approval	04/24/2019	84 FR 11198
Severe/Extreme Area Fee Program (Section 185)	07/20/2022				
VMT - TCMs to Offset Growth	07/20/2015	08/24/2016	Approval	03/14/2019	84 FR 3302

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California: Ozone-8Hr (2008) / San Luis Obispo (Eastern San Luis Obispo)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory	07/20/2014	07/17/2014	Approval	12/19/2016	81 FR 71997
Emission Statement	07/20/2014	11/06/2014	Approval	08/10/2015	80 FR 33195
Nonattainment NSR rules - Marginal	07/20/2015	06/20/2016	Completeness	10/14/2016	

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California: Ozone-8Hr (2008) / Tuscan Buttes

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory	07/20/2014	07/17/2014	Completeness	01/17/2015	
Emission Statement	07/20/2014				
Nonattainment NSR rules - Marginal	07/20/2015	11/13/2015	Completeness	01/19/2016	

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California: Ozone-8Hr (2008) / Ventura County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Contingency Measures VOC and NOX	07/20/2016	04/11/2017	Proposed approval	12/20/2019	84 FR 70109
Emission Inventory	07/20/2014	07/17/2014	Approval	03/30/2020	85 FR 11814
Emission Statement	07/20/2014	04/11/2017	Approval	03/30/2020	85 FR 11814

I/M Enhanced	07/20/2016		Approval	03/30/2020	85 FR 11814
Nonattainment NSR rules - Serious	07/20/2015	08/31/2018	Proposed approval	05/10/2019	84 FR 20604
Ozone Attainment Demonstration	07/20/2016	04/11/2017	Approval	03/30/2020	85 FR 11814
RACT Non-CTG VOC for Major Sources	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT NOX for Major Sources	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Aerospace	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Bulk Gasoline Plants	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Flat Wood Paneling Coatings (2006)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Flexible Packaging Printing Materials (2006)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Industrial Cleaning Solvents (2006)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Large Appliance Coatings (2007)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Large Petroleum Dry Cleaners	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Leaks from Petroleum Refinery Equipment	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Metal Furniture Coatings (2007)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Oil and Natural Gas Industry (2016)	10/27/2018	12/11/2018	Completeness	06/11/2019	
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Plastic Parts Coatings (2008)	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG SOCMI Air Oxidation Processes	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG SOCMI Distillation and Reactor Processes	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Shipbuilding/repair	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Solvent Metal Cleaning	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Cans	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Coils	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Fabrics	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Large Appliances	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Metal Furniture	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Surface Coating of Paper	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Tank Truck Gasoline Loading Terminals	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Use of Cutback Asphalt	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RACT VOC CTG Wood Furniture	07/20/2014	07/18/2014	Approval	02/17/2015	80 FR 2016
RFP VOC and NOX - Serious	07/20/2016	04/11/2017	Approval	03/30/2020	85 FR 11814

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California: Ozone-8Hr (2015) / Amador County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				

Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Butte County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Calaveras County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020	11/21/2018	Approval	11/29/2019	84 FR 57822
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Imperial County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Kern County (Eastern Kern)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(b)(1)) - Moderate	08/03/2021				
Contingency Measures VOC and NOX	08/03/2021				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Moderate	08/03/2021				
RACT Non-CTG VOC for Major Sources - Moderate	08/03/2020				
RACT NOX for Major Sources - Moderate	08/03/2020				
RACT VOC CTG Aerospace	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006)	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007)	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	08/03/2020				

RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007)	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016)	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008)	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes	08/03/2020				
RACT VOC CTG Shipbuilding/repair	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	08/03/2020				
RACT VOC CTG Surface Coating of Cans	08/03/2020				
RACT VOC CTG Surface Coating of Coils	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	08/03/2020				
RACT VOC CTG Surface Coating of Paper	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt	08/03/2020				
RACT VOC CTG Wood Furniture	08/03/2020				
RFP (172(c)(2) & 182(b)(1)) - Moderate	08/03/2021				

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California: Ozone-8Hr (2015) / Los Angeles-San Bernardino Counties (West Mojave Desert)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(c)(2)) - Severe	08/03/2022				
CAA section 185 penalty fee programs [Antelope Valley]	08/03/2028				
CAA section 185 penalty fee programs [Mojave Desert]	08/03/2028				
Clean Fuels for Fleets 182(c)(4)	02/03/2022				
Contingency Measures VOC and NOX	08/03/2022				
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020	12/20/2019	Submission	12/20/2019	
I/M Enhanced	08/03/2022				
Nonattainment New Source Review (NNSR) - Severe [Antelope Valley]	08/03/2021				
Nonattainment New Source Review (NNSR) - Severe [Mojave Desert]	08/03/2021				
RACT Non-CTG VOC for Major Sources - Severe [Antelope Valley]	08/03/2020				
RACT Non-CTG VOC for Major Sources - Severe [Mojave Desert]	08/03/2020				
RACT NOX for Major Sources - Severe [Antelope Valley]	08/03/2020				
RACT NOX for Major Sources - Severe [Mojave Desert]	08/03/2020				
RACT VOC CTG Aerospace [Antelope Valley]	08/03/2020				
RACT VOC CTG Aerospace [Mojave Desert]	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Antelope Valley]	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Mojave Desert]	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants [Antelope Valley]	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants [Mojave Desert]	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Antelope Valley]	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Mojave Desert]	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Antelope Valley]	08/03/2020				

RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Mojave Desert]	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Antelope Valley]	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Mojave Desert]	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Antelope Valley]	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Mojave Desert]	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Antelope Valley]	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Mojave Desert]	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Antelope Valley]	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Mojave Desert]	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Antelope Valley]	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Mojave Desert]	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Antelope Valley]	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Mojave Desert]	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007) [Antelope Valley]	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007) [Mojave Desert]	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners [Antelope Valley]	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners [Mojave Desert]	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Antelope Valley]	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Mojave Desert]	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Antelope Valley]	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Mojave Desert]	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Antelope Valley]	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Mojave Desert]	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Antelope Valley]	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Mojave Desert]	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Antelope Valley]	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Mojave Desert]	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Antelope Valley]	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Mojave Desert]	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007) [Antelope Valley]	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007) [Mojave Desert]	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Antelope Valley]	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Mojave Desert]	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Antelope Valley]	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Mojave Desert]	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016) [Antelope Valley]	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016) [Mojave Desert]	08/03/2020	12/20/2019	Submission	12/20/2019	
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Antelope Valley]	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Mojave Desert]	08/03/2020				

RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Antelope Valley]	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Mojave Desert]	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008) [Antelope Valley]	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008) [Mojave Desert]	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Antelope Valley]	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Mojave Desert]	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes [Antelope Valley]	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes [Mojave Desert]	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes [Antelope Valley]	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes [Mojave Desert]	08/03/2020				
RACT VOC CTG Shipbuilding/repair [Antelope Valley]	08/03/2020				
RACT VOC CTG Shipbuilding/repair [Mojave Desert]	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning [Antelope Valley]	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning [Mojave Desert]	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Antelope Valley]	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Mojave Desert]	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Antelope Valley]	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Cans [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Cans [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Coils [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Coils [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Mojave Desert]	08/03/2020				
RACT VOC CTG Surface Coating of Paper [Antelope Valley]	08/03/2020				
RACT VOC CTG Surface Coating of Paper [Mojave Desert]	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Antelope Valley]	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Mojave Desert]	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt [Antelope Valley]	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt [Mojave Desert]	08/03/2020				
RACT VOC CTG Wood Furniture [Antelope Valley]	08/03/2020				
RACT VOC CTG Wood Furniture [Mojave Desert]	08/03/2020				
RFP (172(c)(2) & 182(c)(2)(B)) - Severe	08/03/2022				
VMT - TCMs to Offset Growth	08/03/2020				

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California: Ozone-8Hr (2015) / Los Angeles-South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice

Attainment demonstrations (Section 182(c)(2)) - Extreme	08/03/2022				
CAA section 185 penalty fee programs	08/03/2028				
Clean Fuels for Boilers	08/03/2021				
Clean Fuels for Fleets 182(c)(4)	02/03/2022				
Contingency Measures VOC and NOX	08/03/2022				
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
I/M Enhanced	08/03/2022				
Nonattainment New Source Review (NNSR) - Extreme	08/03/2021				
RACT Non-CTG VOC for Major Sources - Extreme	08/03/2020				
RACT NOX for Major Sources - Extreme	08/03/2020				
RACT VOC CTG Aerospace	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006)	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007)	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007)	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016)	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008)	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes	08/03/2020				
RACT VOC CTG Shipbuilding/repair	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	08/03/2020				
RACT VOC CTG Surface Coating of Cans	08/03/2020				
RACT VOC CTG Surface Coating of Coils	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	08/03/2020				
RACT VOC CTG Surface Coating of Paper	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt	08/03/2020				
RACT VOC CTG Wood Furniture	08/03/2020				
RFP (172(c)(2) & 182(c)(2)(B)) - Extreme	08/03/2022				
VMT - TCMs to Offset Growth	08/03/2020				

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California: Ozone-8Hr (2015) / Mariposa County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Morongo Band of Mission Indians

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(c)(2)) - Serious	See Note				
Contingency Measures VOC and NOX	See Note				
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emissions Inventories (Section 182(a)(1))	See Note				
Emissions Statement Regulations (Section 182(a)(3)(B))	See Note				
Nonattainment New Source Review (NNSR) - Serious	See Note				
RACT Non-CTG VOC for Major Sources - Serious	See Note				
RACT NOX for Major Sources - Serious	See Note				
RACT VOC CTG Aerospace	See Note				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	See Note				
RACT VOC CTG Bulk Gasoline Plants	See Note				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	See Note				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	See Note				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	See Note				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	See Note				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	See Note				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	See Note				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	See Note				
RACT VOC CTG Industrial Cleaning Solvents (2006)	See Note				
RACT VOC CTG Large Appliance Coatings (2007)	See Note				
RACT VOC CTG Large Petroleum Dry Cleaners	See Note				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	See Note				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	See Note				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	See Note				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	See Note				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	See Note				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	See Note				
RACT VOC CTG Metal Furniture Coatings (2007)	See Note				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	See Note				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	See Note				
RACT VOC CTG Oil and Natural Gas Industry (2016)	See Note				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	See Note				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	See Note				
RACT VOC CTG Plastic Parts Coatings (2008)	See Note				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	See Note				
RACT VOC CTG SOCMI Air Oxidation Processes	See Note				
RACT VOC CTG SOCMI Distillation and Reactor Processes	See Note				
RACT VOC CTG Shipbuilding/repair	See Note				
RACT VOC CTG Solvent Metal Cleaning	See Note				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	See Note				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	See Note				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	See Note				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	See Note				

RACT VOC CTG Surface Coating of Cans	See Note				
RACT VOC CTG Surface Coating of Coils	See Note				
RACT VOC CTG Surface Coating of Fabrics	See Note				
RACT VOC CTG Surface Coating of Large Appliances	See Note				
RACT VOC CTG Surface Coating of Metal Furniture	See Note				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	See Note				
RACT VOC CTG Surface Coating of Paper	See Note				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	See Note				
RACT VOC CTG Use of Cutback Asphalt	See Note				
RACT VOC CTG Wood Furniture	See Note				
RFP (172(c)(2) & 182(c)(2)(B)) - Serious	See Note				

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California: Ozone-8Hr (2015) / Nevada County (Western part)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(b)(1)) - Moderate	08/03/2021				
Contingency Measures VOC and NOX	08/03/2021				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Moderate	08/03/2021				
RACT Non-CTG VOC for Major Sources - Moderate	08/03/2020				
RACT NOX for Major Sources - Moderate	08/03/2020				
RACT VOC CTG Aerospace	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006)	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007)	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007)	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016)	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008)	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes	08/03/2020				
RACT VOC CTG Shipbuilding/repair	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	08/03/2020				

RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	08/03/2020				
RACT VOC CTG Surface Coating of Cans	08/03/2020				
RACT VOC CTG Surface Coating of Coils	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	08/03/2020				
RACT VOC CTG Surface Coating of Paper	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt	08/03/2020				
RACT VOC CTG Wood Furniture	08/03/2020				
RFP (172(c)(2) & 182(b)(1)) - Moderate	08/03/2021				

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California: Ozone-8Hr (2015) / Pechanga Band of Luise&#65533;o Mission Indians of the Pechanga Reservation

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	See Note				
Emissions Statement Regulations (Section 182(a)(3)(B))	See Note				
Nonattainment New Source Review (NNSR) - Marginal	See Note				

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California: Ozone-8Hr (2015) / Riverside County (Coachella Valley)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(c)(2)) - Severe	08/03/2022				
CAA section 185 penalty fee programs	08/03/2028				
Clean Fuels for Fleets 182(c)(4)	02/03/2022				
Contingency Measures VOC and NOX	08/03/2022				
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
I/M Enhanced	08/03/2022				
Nonattainment New Source Review (NNSR) - Severe	08/03/2021				
RACT Non-CTG VOC for Major Sources - Severe	08/03/2020				
RACT NOX for Major Sources - Severe	08/03/2020				
RACT VOC CTG Aerospace	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006)	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007)	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007)	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	08/03/2020				

RACT VOC CTG Oil and Natural Gas Industry (2016)	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008)	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes	08/03/2020				
RACT VOC CTG Shipbuilding/repair	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	08/03/2020				
RACT VOC CTG Surface Coating of Cans	08/03/2020				
RACT VOC CTG Surface Coating of Coils	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	08/03/2020				
RACT VOC CTG Surface Coating of Paper	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt	08/03/2020				
RACT VOC CTG Wood Furniture	08/03/2020				
RFP (172(c)(2) & 182(c)(2)(B)) - Severe	08/03/2022				
VMT - TCMs to Offset Growth	08/03/2020				

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California: Ozone-8Hr (2015) / Sacramento Metro

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(b)(1)) - Moderate	08/03/2021				
Contingency Measures VOC and NOX	08/03/2021				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
I/M Enhanced	08/03/2022				
Nonattainment New Source Review (NNSR) - Moderate [El Dorado]	08/03/2021				
Nonattainment New Source Review (NNSR) - Moderate [Feather River]	08/03/2021				
Nonattainment New Source Review (NNSR) - Moderate [Placer]	08/03/2021				
Nonattainment New Source Review (NNSR) - Moderate [Sacramento]	08/03/2021				
Nonattainment New Source Review (NNSR) - Moderate [Yolo-Solano]	08/03/2021				
RACT Non-CTG VOC for Major Sources - Moderate [El Dorado]	08/03/2020				
RACT Non-CTG VOC for Major Sources - Moderate [Feather River]	08/03/2020				
RACT Non-CTG VOC for Major Sources - Moderate [Placer]	08/03/2020				
RACT Non-CTG VOC for Major Sources - Moderate [Sacramento]	08/03/2020				
RACT Non-CTG VOC for Major Sources - Moderate [Yolo-Solano]	08/03/2020				
RACT NOX for Major Sources - Moderate [El Dorado]	08/03/2020				
RACT NOX for Major Sources - Moderate [Feather River]	08/03/2020				
RACT NOX for Major Sources - Moderate [Placer]	08/03/2020				
RACT NOX for Major Sources - Moderate [Sacramento]	08/03/2020				
RACT NOX for Major Sources - Moderate [Yolo-Solano]	08/03/2020				
RACT VOC CTG Aerospace [El Dorado]	08/03/2020				
RACT VOC CTG Aerospace [Feather River]	08/03/2020				
RACT VOC CTG Aerospace [Placer]	08/03/2020				
RACT VOC CTG Aerospace [Sacramento]	08/03/2020				
RACT VOC CTG Aerospace [Yolo-Solano]	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [El Dorado]	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Feather River]	08/03/2020				

RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Placer]	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Sacramento]	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants [El Dorado]	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants [Feather River]	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants [Placer]	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants [Sacramento]	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants [Yolo-Solano]	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [El Dorado]	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Feather River]	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Placer]	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Sacramento]	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants [Yolo-Solano]	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [El Dorado]	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Feather River]	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Placer]	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Sacramento]	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling [Yolo-Solano]	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [El Dorado]	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Feather River]	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Placer]	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Sacramento]	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [El Dorado]	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Feather River]	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Placer]	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Sacramento]	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [El Dorado]	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Feather River]	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Placer]	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Sacramento]	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [El Dorado]	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Feather River]	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Placer]	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Sacramento]	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment [Yolo-Solano]	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [El Dorado]	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Feather River]	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Placer]	08/03/2020				

RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Sacramento]	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography [Yolo-Solano]	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006) [El Dorado]	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Feather River]	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Placer]	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Sacramento]	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007) [El Dorado]	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007) [Feather River]	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007) [Placer]	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007) [Sacramento]	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners [El Dorado]	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners [Feather River]	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners [Placer]	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners [Sacramento]	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners [Yolo-Solano]	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [El Dorado]	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Feather River]	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Placer]	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Sacramento]	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems [Yolo-Solano]	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment [El Dorado]	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Feather River]	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Placer]	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Sacramento]	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment [Yolo-Solano]	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [El Dorado]	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Feather River]	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Placer]	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Sacramento]	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [El Dorado]	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Feather River]	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Placer]	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Sacramento]	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins [Yolo-Solano]	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [El Dorado]	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Feather River]	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Placer]	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Sacramento]	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires [Yolo-Solano]	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [El Dorado]	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Feather River]	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Placer]	08/03/2020				

RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Sacramento]	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products [Yolo-Solano]	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007) [El Dorado]	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007) [Feather River]	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007) [Placer]	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007) [Sacramento]	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [El Dorado]	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Feather River]	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Placer]	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Sacramento]	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [El Dorado]	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Feather River]	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Placer]	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Sacramento]	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016) [El Dorado]	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016) [Feather River]	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016) [Placer]	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016) [Sacramento]	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [El Dorado]	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Feather River]	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Placer]	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Sacramento]	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [El Dorado]	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Feather River]	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Placer]	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Sacramento]	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks [Yolo-Solano]	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008) [El Dorado]	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008) [Feather River]	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008) [Placer]	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008) [Sacramento]	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008) [Yolo-Solano]	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [El Dorado]	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Feather River]	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Placer]	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Sacramento]	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds [Yolo-Solano]	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes [El Dorado]	08/03/2020				

RACT VOC CTG SOCMI Air Oxidation Processes [Feather River]	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes [Placer]	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes [Sacramento]	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes [Yolo-Solano]	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes [El Dorado]	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes [Feather River]	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes [Placer]	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes [Sacramento]	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes [Yolo-Solano]	08/03/2020				
RACT VOC CTG Shipbuilding/repair [El Dorado]	08/03/2020				
RACT VOC CTG Shipbuilding/repair [Feather River]	08/03/2020				
RACT VOC CTG Shipbuilding/repair [Placer]	08/03/2020				
RACT VOC CTG Shipbuilding/repair [Sacramento]	08/03/2020				
RACT VOC CTG Shipbuilding/repair [Yolo-Solano]	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning [El Dorado]	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning [Feather River]	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning [Placer]	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning [Sacramento]	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning [Yolo-Solano]	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [El Dorado]	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Feather River]	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Placer]	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Sacramento]	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations [Yolo-Solano]	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [El Dorado]	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Feather River]	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Placer]	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Sacramento]	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Placer]	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Cans [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Cans [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating of Cans [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Cans [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Cans [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Coils [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Coils [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating of Coils [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Coils [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Coils [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics [Feather River]	08/03/2020				

RACT VOC CTG Surface Coating of Fabrics [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products [Yolo-Solano]	08/03/2020				
RACT VOC CTG Surface Coating of Paper [El Dorado]	08/03/2020				
RACT VOC CTG Surface Coating of Paper [Feather River]	08/03/2020				
RACT VOC CTG Surface Coating of Paper [Placer]	08/03/2020				
RACT VOC CTG Surface Coating of Paper [Sacramento]	08/03/2020				
RACT VOC CTG Surface Coating of Paper [Yolo-Solano]	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals [El Dorado]	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Feather River]	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Placer]	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Sacramento]	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals [Yolo-Solano]	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt [El Dorado]	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt [Feather River]	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt [Placer]	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt [Sacramento]	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt [Yolo-Solano]	08/03/2020				
RACT VOC CTG Wood Furniture [El Dorado]	08/03/2020				
RACT VOC CTG Wood Furniture [Feather River]	08/03/2020				
RACT VOC CTG Wood Furniture [Placer]	08/03/2020				
RACT VOC CTG Wood Furniture [Sacramento]	08/03/2020				
RACT VOC CTG Wood Furniture [Yolo-Solano]	08/03/2020				
RFP (172(c)(2) & 182(b)(1)) - Moderate	08/03/2021				

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California: Ozone-8Hr (2015) / San Diego County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(b)(1)) - Moderate	08/03/2021				
Contingency Measures VOC and NOX	08/03/2021				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
I/M Basic	08/03/2021				
Nonattainment New Source Review (NNSR) - Moderate	08/03/2021				
RACT Non-CTG VOC for Major Sources - Moderate	08/03/2020				
RACT NOX for Major Sources - Moderate	08/03/2020				
RACT VOC CTG Aerospace	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants	08/03/2020				

RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006)	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007)	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007)	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016)	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008)	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes	08/03/2020				
RACT VOC CTG Shipbuilding/repair	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	08/03/2020				
RACT VOC CTG Surface Coating of Cans	08/03/2020				
RACT VOC CTG Surface Coating of Coils	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	08/03/2020				
RACT VOC CTG Surface Coating of Paper	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt	08/03/2020				
RACT VOC CTG Wood Furniture	08/03/2020				
RFP (172(c)(2) & 182(b)(1)) - Moderate	08/03/2021				

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California: Ozone-8Hr (2015) / San Francisco Bay Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / San Joaquin Valley

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice

Attainment demonstrations (Section 182(c)(2)) - Extreme	08/03/2022				
CAA section 185 penalty fee programs	08/03/2028				
Clean Fuels for Boilers	08/03/2021				
Clean Fuels for Fleets 182(c)(4)	02/03/2022				
Contingency Measures VOC and NOX	08/03/2022				
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
I/M Enhanced	08/03/2022				
Nonattainment New Source Review (NNSR) - Extreme	08/03/2021				
RACT Non-CTG VOC for Major Sources - Extreme	08/03/2020				
RACT NOX for Major Sources - Extreme	08/03/2020				
RACT VOC CTG Aerospace	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	08/03/2020				
RACT VOC CTG Industrial Cleaning Solvents (2006)	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007)	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007)	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016)	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008)	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes	08/03/2020				
RACT VOC CTG Shipbuilding/repair	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	08/03/2020				
RACT VOC CTG Surface Coating of Cans	08/03/2020				
RACT VOC CTG Surface Coating of Coils	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	08/03/2020				
RACT VOC CTG Surface Coating of Paper	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt	08/03/2020				
RACT VOC CTG Wood Furniture	08/03/2020				
RFP (172(c)(2) & 182(c)(2)(B)) - Extreme	08/03/2022				
VMT - TCMs to Offset Growth	08/03/2020				

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California: Ozone-8Hr (2015) / San Luis Obispo (Eastern part)

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Sutter Buttes

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Tuolumne County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Tuscan Buttes

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
Nonattainment New Source Review (NNSR) - Marginal	08/03/2021				

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California: Ozone-8Hr (2015) / Ventura County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Attainment demonstrations (Section 182(c)(2)) - Serious	08/03/2022				
Contingency Measures VOC and NOX	08/03/2022				
Contingency Provisions for RFP Milestones 182(c)(9)	See Note				
Emissions Inventories (Section 182(a)(1))	08/03/2020				
Emissions Statement Regulations (Section 182(a)(3)(B))	08/03/2020				
I/M Enhanced	08/03/2022				
Nonattainment New Source Review (NNSR) - Serious	08/03/2021				
RACT Non-CTG VOC for Major Sources - Serious	08/03/2020				
RACT NOX for Major Sources - Serious	08/03/2020				
RACT VOC CTG Aerospace	08/03/2020				
RACT VOC CTG Auto and Light-Duty Truck Assembly Coatings (2008)	08/03/2020				
RACT VOC CTG Bulk Gasoline Plants	08/03/2020				
RACT VOC CTG Equipment Leaks from Natural Gas/Gasoline Processing Plants	08/03/2020				
RACT VOC CTG Factory Surface Coating of Flat Wood Paneling	08/03/2020				
RACT VOC CTG Fiberglass Boat Manufacturing Materials (2008)	08/03/2020				
RACT VOC CTG Flat Wood Paneling Coatings (2006)	08/03/2020				
RACT VOC CTG Flexible Packaging Printing Materials (2006)	08/03/2020				
RACT VOC CTG Fugitive Emissions from Synthetic Organic Chemical Polymer and Resin Manufacturing Equipment	08/03/2020				
RACT VOC CTG Graphic Arts - Rotogravure and Flexography	08/03/2020				

RACT VOC CTG Industrial Cleaning Solvents (2006)	08/03/2020				
RACT VOC CTG Large Appliance Coatings (2007)	08/03/2020				
RACT VOC CTG Large Petroleum Dry Cleaners	08/03/2020				
RACT VOC CTG Leaks from Gasoline Tank Trucks and Vapor Collection Systems	08/03/2020				
RACT VOC CTG Leaks from Petroleum Refinery Equipment	08/03/2020				
RACT VOC CTG Lithographic Printing Materials and Letterpress Printing Materials (2006)	08/03/2020				
RACT VOC CTG Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins	08/03/2020				
RACT VOC CTG Manufacture of Pneumatic Rubber Tires	08/03/2020				
RACT VOC CTG Manufacture of Synthesized Pharmaceutical Products	08/03/2020				
RACT VOC CTG Metal Furniture Coatings (2007)	08/03/2020				
RACT VOC CTG Miscellaneous Industrial Adhesives (2008)	08/03/2020				
RACT VOC CTG Miscellaneous Metal Products Coatings (2008)	08/03/2020				
RACT VOC CTG Oil and Natural Gas Industry (2016)	08/03/2020				
RACT VOC CTG Paper, Film, and Foil Coatings (2007)	08/03/2020				
RACT VOC CTG Petroleum Liquid Storage in External Floating Roof Tanks	08/03/2020				
RACT VOC CTG Plastic Parts Coatings (2008)	08/03/2020				
RACT VOC CTG Refinery Vacuum Producing Systems, Wastewater Separators, and Process Unit Turnarounds	08/03/2020				
RACT VOC CTG SOCMI Air Oxidation Processes	08/03/2020				
RACT VOC CTG SOCMI Distillation and Reactor Processes	08/03/2020				
RACT VOC CTG Shipbuilding/repair	08/03/2020				
RACT VOC CTG Solvent Metal Cleaning	08/03/2020				
RACT VOC CTG Stage I Vapor Control Systems - Gasoline Service Stations	08/03/2020				
RACT VOC CTG Storage of Petroleum Liquids in Fixed Roof Tanks	08/03/2020				
RACT VOC CTG Surface Coating for Insulation of Magnet Wire	08/03/2020				
RACT VOC CTG Surface Coating of Automobiles and Light-Duty Trucks	08/03/2020				
RACT VOC CTG Surface Coating of Cans	08/03/2020				
RACT VOC CTG Surface Coating of Coils	08/03/2020				
RACT VOC CTG Surface Coating of Fabrics	08/03/2020				
RACT VOC CTG Surface Coating of Large Appliances	08/03/2020				
RACT VOC CTG Surface Coating of Metal Furniture	08/03/2020				
RACT VOC CTG Surface Coating of Miscellaneous Metal Parts and Products	08/03/2020				
RACT VOC CTG Surface Coating of Paper	08/03/2020				
RACT VOC CTG Tank Truck Gasoline Loading Terminals	08/03/2020				
RACT VOC CTG Use of Cutback Asphalt	08/03/2020				
RACT VOC CTG Wood Furniture	08/03/2020				
RFP (172(c)(2) & 182(c)(2)(B)) - Serious	08/03/2022				

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California: PM-10 (1987) / Coso Junction

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	05/28/2010	Proposed approval	06/24/2010	75 FR 36316
PM-10 Nonattainment NSR	06/30/1992		Redesignation approved	10/04/2010	75 FR 54031
PM-10 SIP	11/15/1991	05/28/2010	Proposed approval	06/24/2010	75 FR 36316

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California: PM-10 (1987) / East Kern County Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	08/19/2003	Approval	10/30/2006	71 FR 63642
PM-10 Nonattainment NSR	06/30/1992	02/11/1994	Approval	06/16/2004	69 FR 27837
PM-10 Section 189(d) requirement	See Note				
PM-10 SIP	11/15/1991	08/19/2003	Approval	06/25/2004	69 FR 30006

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California: PM-10 (1987) / Imperial County; Imperial Valley planning area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	01/14/1994	Completeness	02/17/1994	
PM-10 Nonattainment NSR	06/30/1992	01/21/2014	Approval	10/05/2017	82 FR 41895
PM-10 Section 189(d) requirement	12/11/2008				
PM-10 SIP	11/15/1991	01/11/1994	Completeness	02/17/1994	

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California: PM-10 (1987) / Indian Wells

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	10/28/1993	Approval	06/06/2003	68 FR 24368
PM-10 Nonattainment NSR	06/30/1992		Redesignation approved	06/06/2003	68 FR 24368
PM-10 SIP	11/15/1991	10/28/1993	Approval	06/06/2003	68 FR 24368

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California: PM-10 (1987) / Inyo County; Owens Valley planning area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	01/09/1992	Approval	10/04/1999	64 FR 48305
PM-10 Nonattainment NSR	06/30/1992				
PM-10 Section 189(d) requirement	12/31/2007	06/09/2016	Approval	04/12/2017	82 FR 13390
PM-10 SIP	02/08/1992	12/10/1998	Approval	10/04/1999	64 FR 48305

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California: PM-10 (1987) / Mono County; Mammoth Lake planning area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	09/11/1991	Approval	08/23/1996	61 FR 32341
PM-10 Nonattainment NSR	06/30/1992		Redesignation approved	11/04/2015	80 FR 60049
PM-10 SIP	11/15/1991	09/11/1991	Approval	08/23/1996	61 FR 32341

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California: PM-10 (1987) / Mono County; Mono Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	06/29/1995				
PM-10 Nonattainment NSR	06/29/1995				
PM-10 SIP	06/29/1995				

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California: PM-10 (1987) / Riverside County; Coachella Valley planning area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	11/15/1991	Approval	12/14/2005	70 FR 69081
PM-10 Nonattainment NSR	06/30/1992				
PM-10 SIP	11/15/1991	11/15/1991	Approval	12/14/2005	70 FR 69081

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California: PM-10 (1987) / Riverside, Los Angeles, Orange, and San Bernardino Counties; South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993		Approval	12/14/2005	70 FR 69081
PM-10 Nonattainment NSR	06/30/1992	08/28/1996	Approval	01/03/1997	61 FR 64291

PM-10 SIP	11/15/1991	11/19/1991	Approval	12/14/2005	70 FR 69081

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California: PM-10 (1987) / Sacramento County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	07/20/1995		Proposed approval	07/23/2013	78 FR 44494
PM-10 Nonattainment NSR	07/20/1995		Redesignation approved	10/28/2013	78 FR 59261
PM-10 SIP	07/20/1995		Proposed approval	07/23/2013	78 FR 44494

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California: PM-10 (1987) / San Bernardino County (part); excluding Searles Valley Planning area and South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	07/20/1995				
PM-10 Nonattainment NSR	07/20/1995	03/29/1994	Approval	12/13/1996	61 FR 58133
PM-10 SIP	07/20/1995				

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California: PM-10 (1987) / San Joaquin Valley Air Basin; Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, Tulare Counties

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	08/19/2003	Approval	10/30/2006	71 FR 63642
PM-10 Nonattainment NSR	06/30/1992	02/11/1994	Approval	06/16/2004	69 FR 27837
PM-10 SIP	11/15/1991	08/19/2003	Approval	06/25/2004	69 FR 30006

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California: PM-10 (1987) / Trona

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
PM-10 contingency measures	11/15/1993	10/28/1993	Completeness	02/17/1994	
PM-10 Nonattainment NSR	06/30/1992				
PM-10 SIP	11/15/1991	10/28/1993	Completeness	02/17/1994	

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California: PM-2.5 (1997) / Los Angeles-South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	04/05/2008	11/28/2007	Approval	01/09/2012	76 FR 69928
RACM/RACT (Subpart 1) (Moderate)	04/05/2008	11/28/2007	Approval	01/09/2012	76 FR 69928
RACM/RACT (Subpart 4) (Moderate)	12/31/2014		Clean Data Determination	08/24/2016	81 FR 48350
Attainment Demonstration (Moderate)	04/05/2008	11/28/2007	Approval	01/09/2012	76 FR 69928
RFP (Moderate)	12/31/2014	11/28/2007	Approval	01/09/2012	76 FR 69928
Quantitative Milestones (Moderate)	12/31/2014		Clean Data Determination	08/24/2016	81 FR 48350
Contingency Measures (Moderate)	04/05/2008	11/14/2011	Approval	11/29/2013	78 FR 64402
Nonattainment NSR (Moderate)	12/31/2014	12/29/2014	Approval	06/01/2015	80 FR 24821

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California: PM-2.5 (1997) / San Joaquin Valley

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	04/05/2008	06/30/2008	Approval	01/09/2012	76 FR 69896

RACM/RACT (Subpart 1) (Moderate)	04/05/2008	06/30/2008	Approval	01/09/2012	76 FR 69896
RACM/RACT (Subpart 4) (Moderate)	12/31/2014	05/10/2019	Completeness	11/10/2019	
Attainment Demonstration (Moderate)	04/05/2008	06/30/2008	Approval	01/09/2012	76 FR 69896
RFP (Moderate)	12/31/2014	06/30/2008	Approval	01/09/2012	76 FR 69896
Quantitative Milestones (Moderate)	12/31/2014	06/30/2008	Approval	01/09/2012	76 FR 69896
Contingency Measures (Moderate)	04/05/2008	07/02/2013	Approval	12/14/2017	82 FR 58747
Nonattainment NSR (Moderate)	12/31/2014	05/19/2011	Approval	10/17/2014	79 FR 55637
Emission Inventory (Serious)	12/31/2015	05/10/2019	Completeness	11/10/2019	
BACM/BACT (Serious)	12/31/2015	05/10/2019	Completeness	11/10/2019	
Attainment Demonstration (Serious)	12/31/2015	05/10/2019	Completeness	11/10/2019	
RFP (Serious)	12/31/2015	05/10/2019	Completeness	11/10/2019	
Quantitative Milestones (Serious)	12/31/2015	05/10/2019	Completeness	11/10/2019	
Contingency Measures (Serious)	12/31/2015		Approval	12/14/2017	82 FR 58747
Nonattainment NSR (Serious)	05/07/2016	11/20/2019	Completeness	05/07/2020	
Section 189(d) - Emissions Inventory (Serious)	12/31/2016	05/10/2019	Completeness	11/10/2019	
Section 189(d) - Control Measures Including 5% Emission Reduction (Serious)	12/31/2016	05/10/2019	Completeness	11/10/2019	
Section 189(d) - Attainment Demonstration (Serious)	12/31/2016	05/10/2019	Completeness	11/10/2019	
Section 189(d) - RFP (Serious)	12/31/2016	05/10/2019	Completeness	11/10/2019	
Section 189(d) - Quantitative Milestones (Serious)	12/31/2016	05/10/2019	Completeness	11/10/2019	
Section 189(d) - Contingency Measures (Serious)	12/31/2016	10/23/2017	Completeness	04/23/2018	
Section 189(d) - Nonattainment NSR (Serious)	12/31/2016				

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California: PM-2.5 (2006) / Chico

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	12/14/2012	11/15/2012	Approval	05/13/2014	79 FR 14404
RACM/RACT (Subpart 4) (Moderate)	12/31/2014		Redesignation approved	08/10/2018	83 FR 32064
Attainment Demonstration (Moderate)	12/31/2014		Redesignation approved	08/10/2018	83 FR 32064
RFP (Moderate)	12/31/2014		Redesignation approved	08/10/2018	83 FR 32064
Quantitative Milestones (Moderate)	12/31/2014		Redesignation approved	08/10/2018	83 FR 32064
Contingency Measures (Moderate)	12/31/2014		Redesignation approved	08/10/2018	83 FR 32064
Nonattainment NSR (Moderate)	12/31/2014	06/12/2017	Approval	07/06/2018	83 FR 26222

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California: PM-2.5 (2006) / Imperial County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	12/31/2014	01/09/2015	Approval	05/12/2017	82 FR 13392
RACM/RACT (Subpart 4) (Moderate)	12/31/2014	01/09/2015	Completeness	07/09/2015	
Attainment Demonstration (Moderate)	12/31/2014	01/09/2015	Completeness	07/09/2015	
RFP (Moderate)	12/31/2014	01/09/2015	Completeness	07/09/2015	
Quantitative Milestones (Moderate)	12/31/2014	01/09/2015	Completeness	07/09/2015	
Contingency Measures (Moderate)	12/31/2014	01/09/2015	Completeness	07/09/2015	
Nonattainment NSR (Moderate)	12/31/2014	10/05/2018	Approval	10/05/2017	82 FR 41895

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California: PM-2.5 (2006) / Los Angeles-South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	12/31/2014	02/13/2013	Approval	05/16/2016	81 FR 22025
RACM/RACT (Subpart 1) (Moderate)	12/31/2014	02/13/2013	Approval	03/14/2018	83 FR 5923
RACM/RACT (Subpart 4) (Moderate)	12/31/2014	02/13/2013	Approval	03/14/2018	83 FR 5923
Attainment Demonstration (Moderate)	12/31/2014	02/13/2013	Approval	02/12/2016	81 FR 1514
RFP (Moderate)	12/31/2014	02/13/2013	Approval	03/14/2018	83 FR 5923
Quantitative Milestones (Moderate)	12/31/2014				
Contingency Measures (Moderate)	12/31/2014	02/13/2013	Proposed approval	10/20/2015	80 FR 63640
Nonattainment NSR (Moderate)	12/31/2014	12/29/2014	Approval	06/01/2015	80 FR 24821
Emission Inventory (Serious)	08/14/2017	04/27/2017	Approval	03/14/2019	84 FR 3305
BACM/BACT (Serious)	08/14/2017	04/27/2017	Approval	03/14/2019	84 FR 3305

Attainment Demonstration (Serious)	08/14/2017	04/27/2017	Approval	03/14/2019	84 FR 3305
RFP (Serious)	08/14/2017	04/27/2017	Approval	03/14/2019	84 FR 3305
Quantitative Milestones (Serious)	08/14/2017	04/27/2017	Approval	03/14/2019	84 FR 3305
Contingency Measures (Serious)	08/14/2017	04/27/2017	Completeness	10/27/2017	
Nonattainment NSR (Serious)	08/14/2017	05/08/2017	Approval	12/31/2018	83 FR 61551

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California: PM-2.5 (2006) / Sacramento

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	12/31/2014	03/25/2014	Completeness	09/25/2014	
RACM/RACT (Subpart 4) (Moderate)	12/31/2014		Clean Data Determination	08/14/2013	78 FR 42018
Attainment Demonstration (Moderate)	12/31/2014		Clean Data Determination	08/14/2013	78 FR 42018
RFP (Moderate)	12/31/2014		Clean Data Determination	08/14/2013	78 FR 42018
Quantitative Milestones (Moderate)	12/31/2014		Clean Data Determination	08/14/2013	78 FR 42018
Contingency Measures (Moderate)	12/31/2014		Clean Data Determination	08/14/2013	78 FR 42018
Nonattainment NSR (Moderate) [El Dorado]	12/31/2014				
Nonattainment NSR (Moderate) [Placer]	12/31/2014	11/18/2011	Approval	10/24/2013	78 FR 58460
Nonattainment NSR (Moderate) [Sacramento]	12/31/2014	09/26/2012	Approval	09/30/2013	78 FR 53270
Nonattainment NSR (Moderate) [Yolo-Solano]	12/31/2014	08/16/2017	Completeness	05/08/2016	

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California: PM-2.5 (2006) / San Francisco Bay Area

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	12/14/2012	01/14/2013	Approval	05/13/2014	79 FR 14404
RACM/RACT (Subpart 4) (Moderate)	12/31/2014		Clean Data Determination	02/08/2013	78 FR 1760
Attainment Demonstration (Moderate)	12/31/2014		Clean Data Determination	02/08/2013	78 FR 1760
RFP (Moderate)	12/31/2014		Clean Data Determination	02/08/2013	78 FR 1760
Quantitative Milestones (Moderate)	12/31/2014		Clean Data Determination	02/08/2013	78 FR 1760
Contingency Measures (Moderate)	12/31/2014		Clean Data Determination	02/08/2013	78 FR 1760
Nonattainment NSR (Moderate)	12/31/2014	12/14/2017	Approval	06/20/2018	83 FR 23372

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California: PM-2.5 (2006) / San Joaquin Valley

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	12/31/2014	03/04/2013	Approval	09/30/2016	81 FR 59876
RACM/RACT (Subpart 1) (Moderate)	12/31/2014	03/04/2013	Approval	09/30/2016	81 FR 59876
RACM/RACT (Subpart 4) (Moderate)	12/31/2014	11/06/2014	Approval	09/30/2016	81 FR 59876
Attainment Demonstration (Moderate)	12/31/2014	03/04/2013	Approval	02/19/2016	81 FR 2993
RFP (Moderate)	12/31/2014	03/04/2013	Approval	09/30/2016	81 FR 59876
Quantitative Milestones (Moderate)	12/31/2014				
Contingency Measures (Moderate)	12/31/2014				
Nonattainment NSR (Moderate)	12/31/2014	05/19/2011	Approval	10/17/2014	79 FR 55637
Emission Inventory (Serious)	08/21/2017	05/10/2019	Proposed approval	03/27/2020	85 FR 17832
BACM/BACT (Serious)	08/21/2017	05/10/2019	Proposed approval	03/27/2020	85 FR 17832
Attainment Demonstration (Serious)	08/21/2017	05/10/2019	Proposed approval	03/27/2020	85 FR 17832
RFP (Serious)	08/21/2017	05/10/2019	Proposed approval	03/27/2020	85 FR 17832
Quantitative Milestones (Serious)	08/21/2017	05/10/2019	Proposed approval	03/27/2020	85 FR 17832
Contingency Measures (Serious)	08/21/2017	12/11/2018	Completeness	06/11/2019	
Nonattainment NSR (Serious)	02/21/2017	11/20/2019	Completeness	05/07/2020	

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California: PM-2.5 (2006) / Yuba City-Marysville

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	12/31/2014	05/23/2013	Approval	01/08/2015	79 FR 72981
RACM/RACT (Subpart 4) (Moderate)	12/31/2014		Approval	01/08/2015	79 FR 72981
Attainment Demonstration (Moderate)	12/31/2014		Approval	01/08/2015	79 FR 72981
RFP (Moderate)	12/31/2014		Approval	01/08/2015	79 FR 72981
Contingency Measures (Moderate)	12/31/2014		Approval	01/08/2015	79 FR 72981
Nonattainment NSR (Moderate)	12/31/2014	09/21/2012	Proposed approval	02/22/2013	78 FR 12267

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California: PM-2.5 (2012) / Imperial County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	10/15/2016	07/18/2018	Completeness	03/19/2019	
RACM/RACT (Moderate)	10/15/2016	07/18/2018	Completeness	03/19/2019	
Attainment Demonstration (Moderate)	10/15/2016	07/18/2018	Completeness	03/19/2019	
RFP (Moderate)	10/15/2016	07/18/2018	Completeness	03/19/2019	
Quantitative Milestones (Moderate)	10/15/2016	07/18/2018	Completeness	03/19/2019	
Contingency Measures (Moderate)	10/15/2016	10/29/2018	Completeness	12/12/2018	
Nonattainment NSR (Moderate)	10/15/2016	10/05/2018	Approval	10/05/2017	82 FR 41895

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California: PM-2.5 (2012) / Los Angeles-South Coast Air Basin

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	10/15/2016	04/27/2017	Completeness	10/27/2017	
RACM/RACT (Moderate)	10/15/2016	04/27/2017	Completeness	10/27/2017	
Attainment Demonstration (Moderate)	10/15/2016	04/27/2017	Completeness	10/27/2017	
RFP (Moderate)	10/15/2016	04/27/2017	Completeness	10/27/2017	
Quantitative Milestones (Moderate)	10/15/2016	04/27/2017	Completeness	10/27/2017	
Contingency Measures (Moderate)	10/15/2016	04/27/2017	Completeness	10/27/2017	
Nonattainment NSR (Moderate)	10/15/2016	05/08/2017	Approval	12/31/2018	83 FR 61551

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California: PM-2.5 (2012) / Plumas County

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	10/15/2016	02/28/2017	Approval	04/24/2019	84 FR 11208
RACM/RACT (Moderate)	10/15/2016	02/28/2017	Approval	04/24/2019	84 FR 11208
Attainment Demonstration (Moderate)	10/15/2016	02/28/2017	Approval	04/24/2019	84 FR 11208
RFP (Moderate)	10/15/2016	02/28/2017	Approval	04/24/2019	84 FR 11208
Quantitative Milestones (Moderate)	10/15/2016	02/28/2017	Approval	04/24/2019	84 FR 11208
Contingency Measures (Moderate)	10/15/2016	02/28/2017	Completeness	08/28/2017	
Nonattainment NSR (Moderate)	10/15/2016	09/06/2016	Completeness	09/28/2016	

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California: PM-2.5 (2012) / San Joaquin Valley

SIP Requirement	Deadline	Submittal Date	Latest Action	Date of Latest Action	FR Citation Click to view FR notice
Emission Inventory (Moderate)	10/15/2016	05/10/2019	Completeness	11/10/2019	
RACM/RACT (Moderate)	10/15/2016	05/10/2019	Completeness	11/10/2019	
Attainment Demonstration (Moderate)	10/15/2016	05/10/2019	Completeness	11/10/2019	
RFP (Moderate)	10/15/2016	05/10/2019	Completeness	11/10/2019	
Quantitative Milestones (Moderate)	10/15/2016	05/10/2019	Completeness	11/10/2019	
Contingency Measures (Moderate)	10/15/2016	12/11/2018	Completeness	06/11/2019	
Nonattainment NSR (Moderate)	10/15/2016	11/20/2019	Completeness	05/07/2020	

We have made our best effort to ensure that the data contained in these reports is accurate. We note that there may be brief delays in updating the reports as we receive new state submissions and we take rulemaking action on plans. In order to assist us in providing accurate information, we request that you contact us by clicking on the "Contact Us" link near the top of this page with any comments regarding or corrections to the posted information, including concerns about whether the entries reflect the most recent status.

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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 31

Staff Report

South Coast 8-Hour Ozone SIP Update

Release Date: November 8, 2019
Hearing Date: December 12, 2019

CALIFORNIA
AIR RESOURCES BOARD

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COMPLETENESS CHECKLIST FOR SIP REVISION

California State Implementation Plan
Revision to South Coast 8-hour Ozone State Implementation Plan
(Ozone SIP Update)

Planning Area: South Coast Air Basin

Title 40 CFR, Part 51, Appendix V Criteria for Determining the Completeness of Plan Submissions	Enclosed	Notes
2.1 ADMINISTRATIVE MATERIALS		
2.1(a) Submittal Letter from Governor's Designee	✓	Letter from Richard W. Corey, CARB Executive Officer, to Mike Stoker, U.S. EPA
2.1(b) Evidence of Adoption	✓	CARB Resolution #19-31
2.1(c) Legal Authority Citation	✓	CARB Resolution #19-31
2.1(d) Copy of: • Emission Inventories	✓	District *Contingency Measure Plan, Planning for Attainment of the 1997 80 ppb 8-hour Ozone Standard in the South Coast Air Basin*
2.1(e) Evidence of Compliance with State's Procedural Requirements	✓	CARB Resolution #19-31
2.1(f) Evidence of Public Notice Consistent with 40 CFR part 51.102	✓	CARB Notice of public meeting to consider the South Coast 8-hour Ozone Update
2.1(g) Certification of Public Hearing in Accordance with Notice	✓	CARB Resolution #19-31
2.1(h) Compilation of Public Comments and Responses	✓	CARB Public Comment enclosure
2.2 TECHNICAL SUPPORT		
2.2(a) Identification of Regulated Pollutant	✓	District *Contingency Measure Plan, Planning for Attainment of the 1997 80 ppb 8-hour Ozone Standard in the South Coast Air Basin*
2.2(b) Identification of Attainment Area/Status	✓	District *Contingency Measure Plan, Planning for Attainment of the 1997 80 ppb 8-hour Ozone Standard in the South Coast Air Basin*
2.2(c) Estimate of Impact on Emissions	✓	District *Contingency Measure Plan, Planning for Attainment of the 1997 80 ppb 8-hour Ozone Standard in the South Coast Air Basin*

2.2(d) Demonstration that Plan Protects NAAQS	✓	District *Contingency Measure Plan, Planning for Attainment of the 1997 80 ppb 8-hour Ozone Standard in the South Coast Air Basin*
2.2(e) Modeling Support	N/A	
2.2(h) Compliance/Enforcement	N/A	
2.2(i) Justification	N/A	

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Executive Summary

On June 15, 2004, the South Coast Air Basin (South Coast) was designated nonattainment for the 80 part per billion (ppb) 8-hour ozone national ambient air quality standard (ozone standard), and ultimately classified as an extreme ozone nonattainment area. As an extreme area, the South Coast is required by the Clean Air Act (Act) to develop a State Implementation Plan (SIP) to achieve the ozone standard in 2023, the full ozone season prior to the attainment date of June 15, 2024. California prepared SIPs in 2007, 2012, and 2016 as part of its efforts to implement the ozone standard.

Most recently, the South Coast Air Quality Management District (District) *2016 Air Quality Management Plan* (2016 AQMP) included a SIP demonstrating attainment of the ozone standard in 2023. Air quality modeling in the 2016 AQMP projected that reaching the ozone standard would require significant emissions reductions in oxides of nitrogen (NOx). The 2016 AQMP ozone attainment strategy for 2023 was based on existing and new District control measures in addition to the California Air Resources Board (CARB) measures from the *2016 State Strategy for the State Implementation Plan* (State SIP Strategy). The State SIP Strategy provides the State's commitment to achieve emissions reductions in the South Coast by 2023 from mobile sources and consumer products.

The Act includes a provision in Section 182(e)(5) specifically for extreme ozone nonattainment areas to rely in part on emissions reductions from measures that anticipate future technologies and control techniques will be developed and deployed in time to provide the emissions reductions needed for attainment. While the 2016 AQMP relied on reductions from existing regulations and defined measures for the majority of the emissions reductions needed to achieve the ozone standard, the last increment of emissions reductions needed for attainment utilized the Section 182(e)(5) advanced technology provision of the Act.

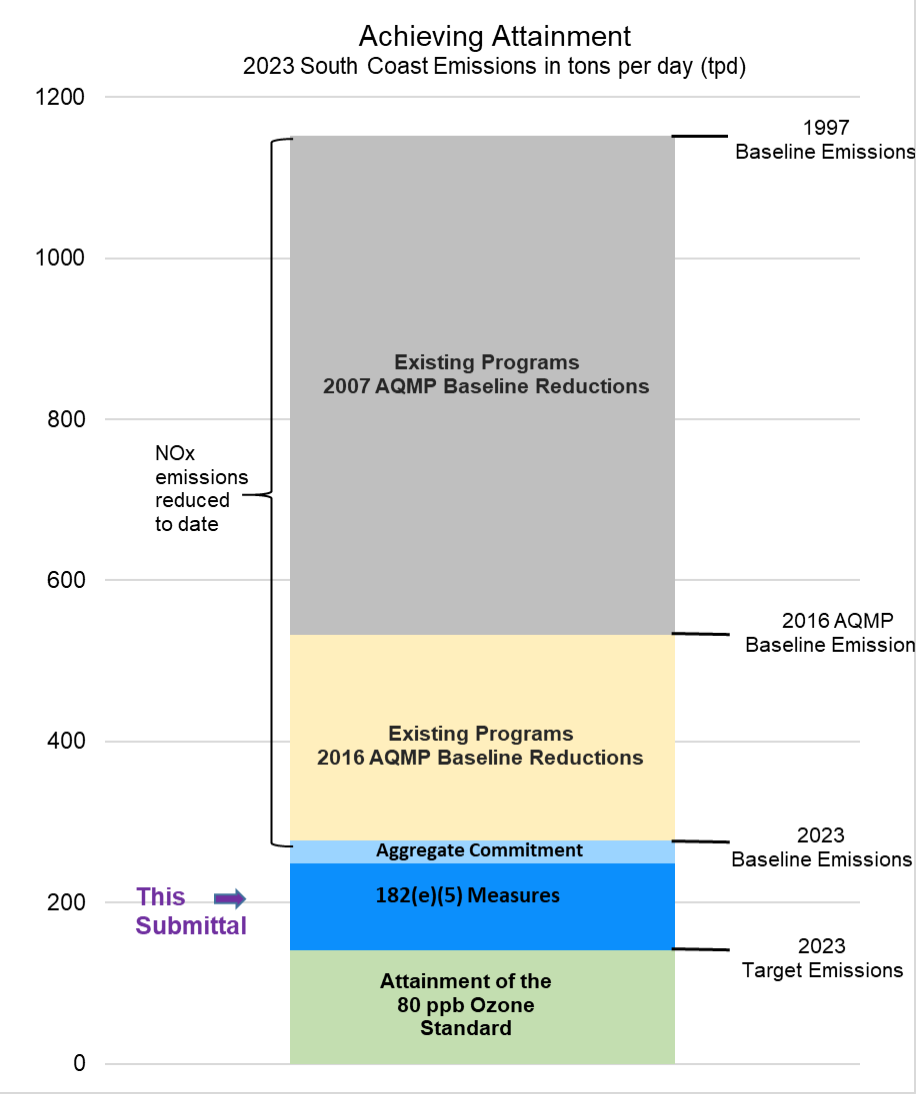
The Act also requires that areas utilizing Section 182(e)(5) measures include a commitment to submit a SIP update three years before the measures are needed. The SIP update must demonstrate that the area will achieve the emissions reductions assigned to the 182(e)(5) provision by the attainment date, or include contingency measures to be implemented if the anticipated technologies do not achieve the planned emissions reductions.

To meet the Section 182(e)(5)(B) requirement, the District and CARB staff developed the *Contingency Measure Plan, Planning for Attainment of the 1997 80 ppb 8-hour Ozone Standard in the South Coast Air Basin* (Ozone SIP Update). The Ozone SIP Update includes a joint CARB/District strategy to

achieve the remaining NOx emissions reductions needed to achieve the ozone standard in 2023.

Figure ES-1 demonstrates the progress that CARB and the District have made reducing NOx emissions since the ozone standard was set in 1997. Since that time, CARB and District programs have reduced NOx emissions by 76 percent. The area marked "182(e)(5) Measures" is the subject of this SIP submittal and represents the final increment of emissions reductions needed to achieve the ozone standard.

Figure ES-1: NOx emissions in the South Coast since the 8-hour Ozone Standard was set



The Ozone SIP Update lays out an aggressive approach to achieve the final 108 tons per day (tpd) increment of NOx reductions needed to achieve the ozone standard. The Ozone SIP Update includes three specific elements. The first two of these elements describe the actions CARB and the District will take to achieve reductions. The last describes anticipated federal actions. Given the challenge, the South Coast cannot meet the ozone standard without timely federal action. Therefore, CARB and the District anticipate federal reductions will occur and so this submittal reflects those anticipated reductions:

1. Identified Emission Reduction Strategies – Since the adoption of the 2016 AQMP, CARB and the District have identified additional emissions reductions that can be credited toward the Section 182(e)(5) reduction commitments in 2023. These reductions are based on adopted regulations and new regulations or programs to be adopted by 2020, clean mobile source technologies being implemented which were not reflected in the 2023 emissions inventory, and a series of innovative new measures designed to achieve further reductions;

2. Additional Incentive Funding – Accelerating the penetration of the cleanest technologies into the current fleet of motor vehicles and other combustion technologies is key to achieving the necessary reductions. Emissions reductions from both existing and new sources of incentive funding are a key element of the plan to achieve the anticipated emissions reductions needed. The Ozone SIP Update sets out an approach for securing additional incentive funding; and

3. Federal sources and federal measures – Without further reductions from sources primarily subject to federal jurisdiction (i.e., ocean-going vessels (OGV), aircraft, locomotives, out-of-state trucks), which account for 36 percent of NOx emissions in the South Coast, attainment of the ozone standard is not possible by 2023. The Act allocated primary responsibility to control emissions to the states. And CARB and the District have exercised our authority to the fullest to secure emissions reductions with technology-forcing standards for mobile, industrial, and commercial sources. But the Act also recognizes that federal leadership is essential. Section 101(a)(4) of the Act specifies that Congress found that federal financial assistance and leadership is essential for the development of cooperative federal, state, regional, and local programs to prevent and control air pollutions. This is especially true since U.S. EPA retains excusive authority to regulate some of the most polluting sources in California. Therefore, the Ozone SIP Update outlines the federal actions, which would be needed for the region to achieve the standard by 2023, and which the District and CARB anticipate will occur based on U.S. EPA's authority to control emissions and responsibility to act as a good partner to achieve healthy air.

Table ES-1 shows the anticipated emissions reductions for the three elements of the Ozone SIP Update.

Table ES-1: Ozone SIP Update Elements

Plan Element	2023 Reductions (tpd)
1. Identified Emissions Reduction Strategies	24-26
2. Additional Incentive Funding	15
3. Federal Measures and/or Funding	67-69
Total	**108**

How does this submittal enhance the 2016 AQMP?

Implementation of the Act was intended to be a partnership with all levels of government participating. Further, Congress recognized that certain areas, such as the South Coast, face a greater air quality challenge and require a coordinated effort to clean up all source categories to meet air quality standards. States and local air districts can address many source categories, but have limited authority for some source categories. Federal action is needed to fully address these source categories, and reductions from these categories are key to success in meeting the ozone standard in the South Coast.

Since submittal of the 2016 AQMP, CARB and the District have been working hard to adopt the measures committed to in the 2016 AQMP for sources that we have the authority to control. But at the same time, as CARB and the District have done with all prior SIPs, we have continued to identify measures beyond those originally identified in the 2016 AQMP, including already adopted new regulations, to achieve additional emissions reductions. The new measures we have identified through that work that go beyond those in the 2016 AQMP are summarized in Table ES-2 and described in detail in Chapter 2.

Table ES-2: Identified Emission Reduction Strategies

	Agency	NOx Reductions (tpd)
RECLAIM BARCT Rules	South Coast AQMD	**2**
Ports MOU	South Coast AQMD	**3.2-5.2**
Airports MOU	South Coast AQMD	**0.5**
Metrolink Locomotives	South Coast AQMD	**3**
Incentives (Expected Future Funding)	South Coast AQMD	**1.5**
Low Carbon Fuel Standard and Alternative Diesel Fuels Regulation	CARB	**1.7**
ATCM for Portable Engines, Statewide Portable Equipment Registration Program	CARB	**0.25**
HD Inspection and Maintenance Program	CARB	**4.2**
Innovative New Measures: – **Tier 5 Off-Road Diesel Engine Standard** – **State Green Contracting** – **Reduction in Growth of Single-Occupancy Vehicle Travel** – **Locomotive Emission Reduction Measure** – **VMT and Land Conservation** – **Regional VMT Reductions** – **Co-benefits from Electrification of Buildings due to 2017 Climate Change Scoping Plan**	CARB and other agencies	**3**
Total Reductions Towards 182(e)(5) Commitment*		**24-26**

* Estimated reductions including 4.2 tpd of NOx reductions associated with updated OGV emissions inventory and CARB's SIP Strategy for OGV.

Emissions reductions from both existing and new sources of incentive funding are a key element of the plan to increase the penetration of the cleanest technologies and achieve the anticipated emissions reductions needed. Moving forward, through 2023, CARB and the District will advocate for several funding sources including: (1) additional Greenhouse Gas Reduction Funds (GGRF), (2) Statewide Bond Funding, and (3) Voting District Authorization for Clean Air Legislation, SB 732 (Allen), as described later. In addition, CARB and the District will continue working hard to explore all additional options to help secure sufficient funding to achieve the ozone standard in 2023.

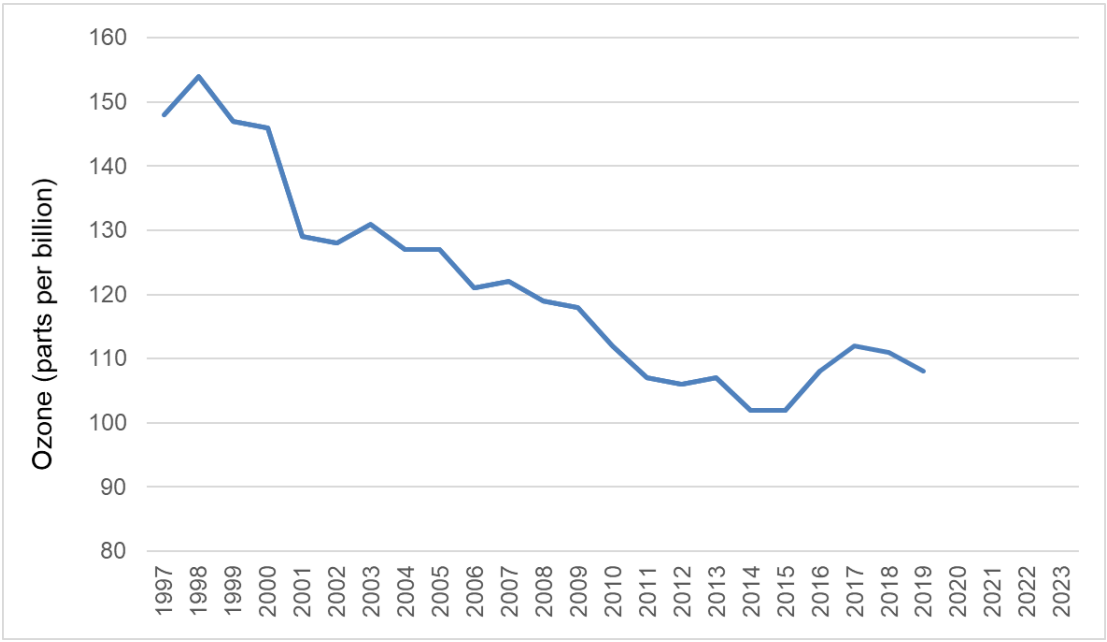
The remaining actions needed to complete the transition to cleaner technologies in all sectors and to achieve the necessary reductions by 2023 can be achieved through efforts at the federal level. To this end, CARB and the District anticipate U.S. EPA will adopt cleaner emissions standards for locomotives and heavy-duty trucks, among other sources under primarily federal control. California understands that U.S. EPA could also choose to achieve reductions by providing incentive funding to accelerate the transition to clean technologies. CARB and the district estimate that up to 78 tpd of reductions in NOx emissions could be achieved by transitioning sources under federal jurisdiction to the cleanest technologies in a timely manner. California believes that federal actions can produce the emissions reductions needed for attainment in 2023.

Inclusion of assumed reductions from actions by U.S. EPA in this Ozone SIP Update, do not constitute a legally binding requirement by California on U.S. EPA. We understand that as a matter of law that is not permitted. Rather, CARB and the District are making the reasonable assumption that U.S. EPA will fulfill its responsibilities under the Act in such a way and in time to allow California to meet its Act mandates. We note that if, due to federal inaction, we do not achieve the standard by 2023, the Act will require a new SIP setting a new attainment date, up to ten years later. As a contingency for federal inaction, California is already adopting regulations and planning for future regulations that will continue to reduce emissions beyond the current attainment date. We have included an analysis showing the actions CARB and the District anticipate taking in that circumstance.

Chapter 1 - Background

Ozone levels in the South Coast have declined by nearly a third since 1997 when the first 8-hour ozone standard of 80 parts per billion (ppb) (ozone standard) was set by U.S. EPA, Figure 1. While South Coast 8-hour ozone levels in the 1990s often exceeded 200 ppb, the South Coast has not had a monitored 8-hour ozone measurement over 200 ppb since 1998 or even over 150 ppb of ozone since 2003. With the exception of an uptick in ozone levels in recent years most likely due to unusual heat and drought conditions, South Coast was making significant progress towards attaining the ozone standard in 2023.

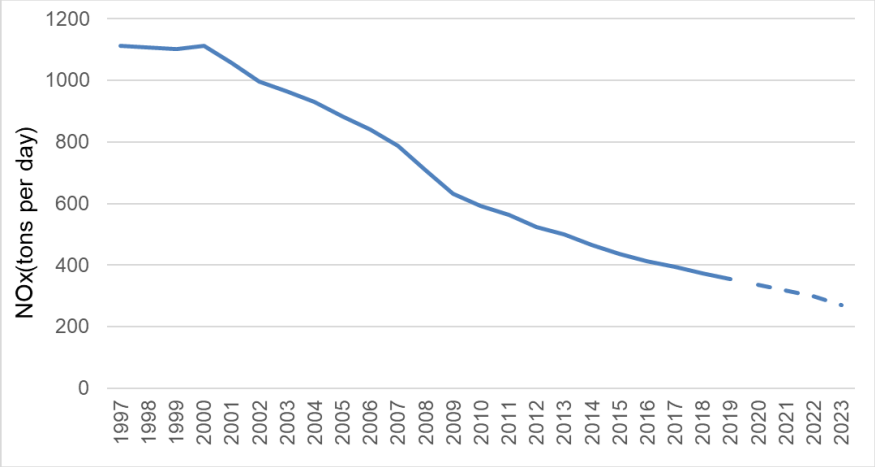
Figure 1: 8-hour Ozone Design Values in the South Coast from 1997 to 2019*



*2019 Ozone measurements are unofficial draft values, subject to change.

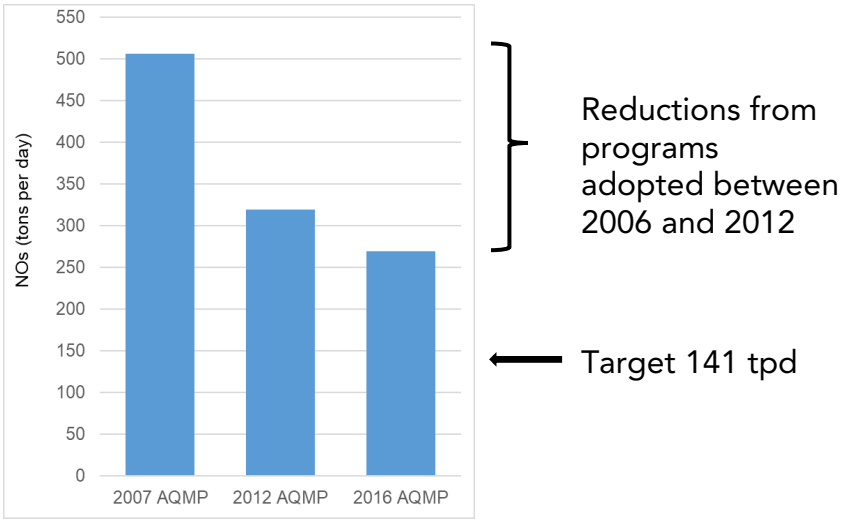
The improvement in air quality in the South Coast has been achieved through State and District programs primarily aimed at reducing NOx emissions. Total NOx emissions in the South Coast have decreased from well over 1100 tpd of NOx in 1997, when the 80 ppb 8-hour ozone standard was set, to 356 tpd today and is projected to be reduced to 269 tpd in 2023, Figure 2.

Figure 2: NOx emissions in the South Coast from 1997 to 2023



On November 28, 2007, CARB submitted the first SIP for the South Coast to achieve the ozone standard in 2023. The 2007 AQMP, 2012 AQMP, and 2016 AQMP all included emission inventories and detailed the steady progress that has been achieved by the District and the State in securing emissions reductions in NOx and reactive organic gases (ROG) emissions in 2023 from sources within the South Coast. The 2016 AQMP air quality modeling demonstrated that substantial NOx emissions reductions are key to reaching attainment. Figure 3 demonstrates how projected 2023 emissions in the South Coast have been reduced from adopted rules and programs (baseline emissions) in successive AQMPs. The 2016 AQMP emission inventory demonstrated that the NOx baseline emissions in 2023 have been reduced by nearly 50 percent from the 2023 NOx emissions in the 2007 AQMP, Figure 3.

Figure 3: 2023 baseline emissions in the South Coast from three successive AQMPs over nine years



Today, NOx emissions in the South Coast have been reduced by almost 70 percent since U.S. EPA set the ozone standard in 1997. The State has focused its efforts to reduce on-road and off-road mobile source emissions since the majority of the NOx emissions in the South Coast comes from these sources. In addition to stationary controls, the District's controls in the 2007 AQMP also focused on mobile source reductions.

CARB is implementing numerous regulations aimed at reducing NOx emissions from light–duty on-road vehicles such as cars, heavy-duty on-road vehicles such as diesel trucks, and off-road sources like forklifts and large construction equipment. Phased implementation of these regulations continue to lower emissions from mobile sources through 2023 and beyond as newer vehicles and engines are introduced with cleaner technologies, and the older, dirtier vehicles and engines are replaced. In addition to regulations targeting vehicles and other combustion sources, CARB is requiring cleaner fuels that provide for additional emissions reductions in vehicles and equipment. Further details of the State's mobile source program are provided in the Ozone SIP Update.

These State programs along with District stationary and area sources programs and incentive programs have reduced NOx emissions in the South Coast in 2023 to 269 tpd.

2016 AQMP Attainment Demonstration

The 2016 AQMP attainment demonstration specified that NOx emissions in the South Coast need to be reduced to a level of 141 tpd of NOx to achieve the ozone standard. As stated above, baseline NOx emissions in 2023 have been reduced to 269 tpd due to current regulations, leaving an additional 128 tpd of NOx emissions reductions to be achieved. The 2016 AQMP attainment strategy provides for these emissions reductions through traditional defined measures and measures utilizing Section 182(e)(5) of the Act, titled in the 2016 AQMP as Further Deployment of Cleaner Technologies as shown in Table 1.

Table 1: 2023 NOx Reductions Needed to Achieve the Ozone Standard

Total Emissions Reductions to Achieve the Ozone Standard	128*
District Defined Measures	*23*
CARB Defined Measures	*4.3*
Further Deployment of Cleaner Technologies	*108*

*additional emissions reductions beyond 128 tpd are required to accommodate a 3 tpd set aside and an additional 4.2 tpd correction in the ocean-going vessel (OGV) emissions

On March 7, 2017, CARB adopted the State SIP Strategy to provide the emissions reductions needed to achieve the ozone standard in the South Coast. In the State SIP Strategy, CARB committed to providing 113 tpd of NOx reductions in the South Coast in 2023. These measures were separated into two types of commitments: defined measures that comprise an aggregate commitment and 108 tpd of NOx emissions reductions from further deployment of new technologies measures approved under Section 182(e)(5) of the Act.

Since adopting the State SIP Strategy, CARB has been hard at work implementing the measures that were defined in the State SIP Strategy according to the schedule set forth in the aggregate commitment. Several of these measures have been adopted by CARB and are detailed in Table 2. Other measures are in the development stage, either undergoing public workshops or staff concept development.

Table 2: 2016 State SIP Strategy Approved Aggregate Commitment Measures

Measure Title	Board Adoption
South Coast On-Road Heavy Duty Vehicle Incentive Measure	March 22, 2018
Heavy-Duty Diesel Vehicle Emission Control System Warranty Regulation Amendments	June 28, 2018
Innovative Clean Transit Regulation	December 14, 2018
Zero-Emission Airport Shuttle Regulation	June 27, 2019
Zero-Emission Powertrain Certification Regulation	June 27, 2019
Electric Vehicle Supply Equipment Standards	June 27, 2019
Ocean-Going Vessel At Berth And At Anchor Regulation	Scheduled December, 2019

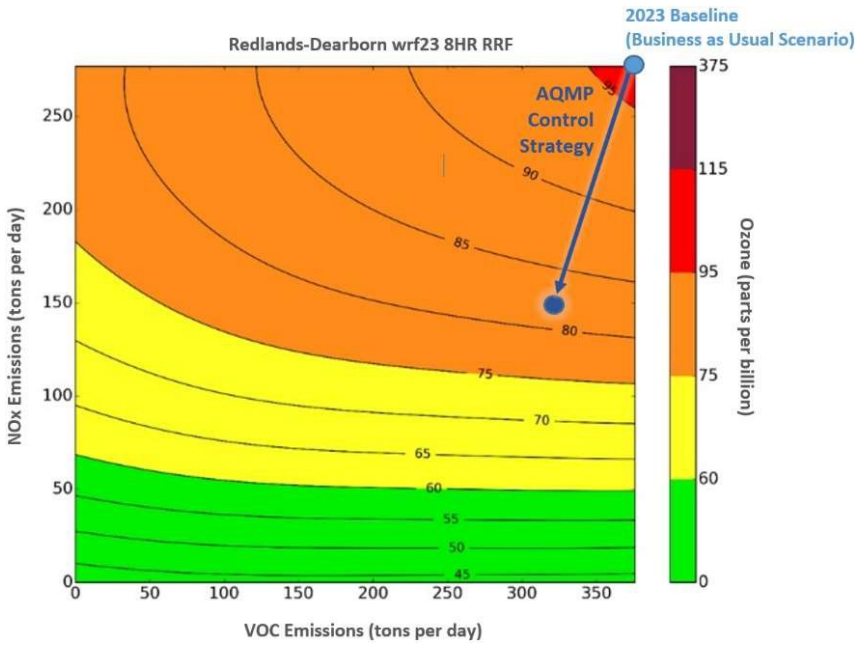
The further deployment of cleaner technology measures represent the remainder of the emissions reductions needed, 108 tpd of NOx. These measures include incentive programs to accelerate technology penetration in time to achieve the ozone standard and further federal actions to achieve emissions reductions from sources under federal and international regulatory authority.

In addition to committing to 113 tpd of NOx reductions in the 2023 ozone attainment strategy, reductions in ROG emissions were also included in the attainment demonstration as concurrent benefits from the State SIP Strategy measures. While these emissions reductions were included in the attainment demonstration in the 2016 AQMP, ROG reductions have limited effect on reducing 8-hour ozone levels in 2023 as determined by the air quality modeling and shown by the shape of the curve in Figure 4. Figure 4 demonstrates the

relationship between the ozone precursors, NOx and ROG emissions and ozone levels, and demonstrates that reductions in NOx emissions are significantly more beneficial to reducing ozone levels in 2023 than are reductions in ROG emissions.

The Ozone SIP Update is required to address the NOx and ROG emissions in 2023 from further deployment of cleaner technology measures. As discussed above, reductions from measures targeting ROG emissions in 2023 will produce only a minor benefit to meeting the ozone standard. For this reason, the Ozone SIP Update focuses on NOx emissions reductions to provide for attainment of the ozone standard.

Figure 4: 2023 Isopleth of Redlands monitor in 2023 demonstrating NOx sensitivity



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Chapter 2- Contingency Measure Plan

Achieving the ozone standard in the South Coast by 2023 is a tremendous challenge. The State SIP Strategy demonstrated that reducing NOx emissions in the South Coast will require significant deployment of near-zero and zero-emission technologies including substantial levels of incentive funding needed to accelerate the turnover to these cleaner technologies. While CARB and the District continue to implement on-going and new control programs for the sources under California's control, U.S. EPA action is critical to reduce the NOx emissions from federal and international sources to the level necessary to achieve the ozone standard in 2023.

The proposed contingency measure plan discussed in the Ozone SIP Update and outlined in this report lays out an aggressive approach for achieving the 108 tons per day of NOx reductions allocated to "Further Deployment of Cleaner Technologies" under Section 182(e)(5) of the Act. The contingency management plan is comprised of three specific elements, as described below:

1. Identified Emission Reduction Strategies – Since the adoption of the 2016 AQMP, CARB and the District have identified additional emissions reductions that can be credited toward the Section 182(e)(5) reduction commitments in 2023. These reductions are based on adopted regulations and new regulations or programs to be adopted by 2020, clean mobile source technologies being implemented which were not reflected in the 2023 emissions inventory, and a series of innovative new measures designed to achieve further reductions;

2. Additional Incentive Funding – Accelerating the penetration of the cleanest technologies into the current fleet of motor vehicles and other combustion technologies is key to achieving the necessary reductions. Emissions reductions from both existing and new sources of incentive funding are a key element of the plan to achieve the anticipated emissions reductions needed. The Ozone SIP Update sets out an approach for securing additional incentive funding; and

3. Federal sources and federal measures – Without further reductions from sources primarily subject to federal jurisdiction (i.e., OGV, aircraft, locomotives, out-of-state trucks), which account for 36 percent of NOx emissions in the South Coast, attainment of the ozone standard is not possible by 2023. The Act allocated primary responsibility to control emissions to the states. And CARB and the District have exercised our authority to the fullest to secure emissions reductions with technology-forcing standards for mobile, industrial, and commercial sources. But the Act also recognizes that federal leadership is essential. Section 101(a)(4) of the Act specifies that Congress found that federal financial

assistance and leadership is essential for the development of cooperative federal, state, regional, and local programs to prevent and control air pollutions. This is especially true since U.S. EPA retains excusive authority to regulate some of the most polluting sources in California. Therefore, the Ozone SIP Update outlines the federal actions, which would be needed for the region to achieve the standard by 2023, and which the District and CARB anticipate will occur based on U.S. EPA's authority to control emissions and responsibility to act as a good partner to achieve healthy air.

Table 3 presents the anticipated emissions reductions for the contingency measure plan that is included in the Ozone SIP Update.

Table 3: Ozone SIP Update Contingency Measure Plan Elements

Plan Elements	2023 Reductions (tpd)
1. Identified Emissions Reduction Strategies	24-26
2. Additional Incentive Funding	15
3. Federal Measures and/or Funding	67-69
Total	**108**

Further detail for these three elements is provided below.

1) Identified Emissions Reduction Strategies

In addition to implementing the measures specified in the 2016 AQMP, CARB and District staffs have identified additional emissions reduction strategies needed to reach attainment. Table 4 lists the resulting newly identified strategies and the anticipated emissions reductions. These efforts have been, or will soon be, adopted. Reductions from these measures were not included in the 2023 ozone standard attainment demonstration in the 2016 AQMP. Altogether, these will provide up to 26 tpd of NOx reductions in 2023 with the District actions accounting for 10 to 12 tpd. Further detail on the strategies are provided below.

Table 4: Identified Emission Reduction Strategies

	Agency	NOx Reductions (tpd)
RECLAIM BARCT Rules	District	2
Ports MOU	District	3.2-5.2
Airports MOU	District	0.5
Metrolink Locomotives	District	3
Incentives (Expected Future Funding)	District	1.5
Low Carbon Fuel Standard and Alternative Diesel Fuels Regulation	CARB	1.7
ATCM for Portable Engines, Statewide Portable Equipment Registration Program	CARB	0.25
HD Inspection and Maintenance Program	CARB	4.2
Innovative New Measures	CARB	3
Total Reductions Towards 182(e)(5) Commitment*		**24-26**

* Estimated reductions including 4.2 tpd of NOx reductions associated with updated OGV emissions inventory and CARB's SIP Strategy for OGV.

District Identified Emission Reduction Strategy

RECLAIM BARCT Rules

Pursuant to directives listed in control measure CMB-05 of the 2016 AQMP and in recently adopted State statute (AB 617), the REgional CLean Air Incentives Market (RECLAIM) Program facilities are subject to an expedited implementation schedule to install additional best available retrofit control technology (BARCT) no later than December 31, 2023, which has accelerated the implementation schedule of CMB-05 from 2025 to 2023. In 2020, the District is scheduled to adopt rules implementing CMB-05 including Rule 1109.1 for refinery equipment, Rule 1150.3 for landfills and Rule 1179.1 for combustion equipment and publicly owned treatment work facilities.

Ports and Airports MOUs

On May 4, 2018, the District's Governing Board directed staff to pursue a voluntary Memorandum of Understanding (MOU) approach with marine ports and commercial airports and pursue regulatory approaches for warehouses/distribution centers, railyards and new and re-development. The MOUs with the marine ports and commercial airports will implement the

facility-based mobile source measures MOB-01 and MOB-04 in the 2016 AQMP, with quantifiable emissions reductions. Reductions from these measures were not included in the 2016 AQMP ozone attainment demonstration.

Metrolink Locomotives

The District's Governing Board has awarded Metrolink a total of $101.85 million since February 2013 for the replacement of 37 older locomotives (Tier 0 and Tier 2) with Tier 4 locomotives and the new purchase of three Tier 4 locomotives. As of September 2019, 27 Tier 4 locomotives have been delivered to Metrolink with 23 units deployed in revenue service or undergoing testing to prepare for service. Metrolink anticipates all 40 Tier 4 locomotives will be deployed in service by the end of 2020.

Incentives (Expected Future Funding)

Additional NOx emissions reductions are anticipated from continued implementation of existing incentive programs with future funding also generating surplus reductions to the 2016 AQMP's 2023 commitments.

CARB Identified Emission Reduction Strategies – New Mobile Source Measures

Low Carbon Fuels Standard Amendment

On September 27, 2018, the Board approved amendments to the Low Carbon Fuel Standard (LCFS), which sets annual carbon intensity standards for gasoline, diesel, and the fuels that replace them consistent with California's 2030 GHG target enacted through SB32. The LCFS will lower GHGs and improve California's air quality by lowering statewide NOx and PM2.5 emissions from 2019 through 2030.

ATCM for Diesel Particulate Matter from Portable Engines Rated At 50 Horsepower and Greater, and the Statewide Portable Equipment Registration Program Regulation

On November 16, 2017, CARB approved amendments to the Portable Equipment ATCM and Portable Equipment Registration Program (PERP Regulation). The PERP Regulation requires operators to upgrade their equipment to meet emissions requirements by 2020. The latest PERP Regulation restructures the emissions requirements so that implementation and enforcement of the regulation is feasible and achieves NOx emissions reductions not anticipated in the 2016 AQMP.

Heavy Duty Truck Inspection and Maintenance Program

Scheduled for consideration by CARB in 2020, the Heavy-Duty Truck Inspection and Maintenance Program (HD I/M program) will incentivize vehicle owner and driver behavior to ensure that heavy-duty vehicles are well maintained and properly repaired. The HD I/M program will ensure that vehicles' emissions control systems are operating as designed to reduce emissions, and will also remove gross polluting HD vehicles from the roads.

CARB Identified Emission Reduction Strategies – Innovative New Measures

In addition to the regulations identified above, CARB has identified additional innovative new measures. The innovative new measures represents the next step to achieving more reductions at the State level and go beyond those regulations identified above. These actions, in some cases, go beyond the historical model of programs and regulations and represent the level of transformation needed from every sector to achieve clean air. These measures are listed in Table 5 and further detailed is provided below.

The Innovative New Measures represent a new SIP commitment by the Board.

Table 5: CARB Innovative New Measures

Innovative New Measures	Reductions
Tier 5 Off-Road Diesel Engine Standard	**3.0**
State Green Contracting	
Reduction in Growth of Single-Occupancy Vehicle Travel	
Locomotive Emission Reduction Measure	
Regional VMT Reductions	
VMT and Land Conservation	
Co-benefits from Electrification of Buildings due to 2017 Climate Change Scoping Plan	

Tier 5 Off-Road Diesel Engine Standard

Since 1995, CARB has adopted four increasingly stringent tiers of engine standards to reduce emissions and adverse health effects from off-road diesel engines. However, it has been almost 14 years since the off-road diesel emissions standards were last updated (Tier 4 in 2005), which now lag behind the European Stage V nonroad diesel standards in stringency. As a result, the emissions contribution from off-road diesel engines continues to increase and will exceed the contribution from on-road diesel engines by 2025, making off-road diesel the single largest source of mobile NOx emissions in California. This measure would include adopting more-stringent engine standards that reduce NOx and PM emissions by up to 90 percent below the current Tier 4

engine standards, as well as potential requirements to offer off-road vehicles with zero-emission technology for sale.

State Green Contracting

California's State Transportation Agency (i.e. Caltrans) spends approximately $5 billion annually on building and maintaining California roads. In addition, State government purchases new vehicles and equipment each year. This measure would consider requiring that contractors use the cleanest equipment available in order to be considered for these government contracts and that State agencies purchase the cleanest vehicles and equipment that are available. This measure builds on Governor Newsom's recent directive for State government to immediately redouble efforts to reduce greenhouse gas emissions and mitigate the impacts of climate change while building a sustainable, inclusive economy.

Reduction in Growth of Single-Occupancy Vehicle Travel

This measure would consider applying a regional transportation system pricing program in conjunction with requirements to use funding generated to encourage people to take public transit, carpool, bike, walk, and/or adjust trip times at congested times of day. The regional pricing program would implement a suite of regional and locally focused pricing strategies for use of certain lanes, driving into certain areas, parking in prime locations, driving at peak times, and/or utilizing non-pooled ride hailing services. Funds generated from the program must be used to either encourage use of existing identified clean transportation options or to provide additional clean transportation options. Some examples include, but are not limited to: reducing the cost of transit via transit passes, providing rebates for e-bikes, providing lower cost or reserved parking spaces for carpools, educating the public about the availability of per-mile car insurance pricing options, and provide traveler incentives to encourage travel at times when roads are less congested.

Locomotive Emission Reduction Measure

CARB is evaluating concepts for a potential regulation to reduce criteria, toxics, and greenhouse gas emissions from locomotives. These concepts address in-use locomotive emissions, idling, and maintenance activities. The potential regulation includes elements that could be implemented at the State and/or District level. Previously, State action to limit rail emissions has been through enforceable agreements. Although a regulation will take more time to implement than an agreement, it will not sunset like previous MOUs, it will be more transparent in its development, it will be enforceable, and it will achieve additional emissions reductions.

Specifically, one of CARB's concepts, called the Locomotive Emissions Reduction Spending Account (Account) requires that the Class 1 railroads set aside funds each year to purchase Tier 4 or cleaner locomotives. The amount to be set aside is based on the usage of Tier 3 and lower (dirtier) locomotives in California. The charge increases with the emissions level of the locomotive used, which should encourage cleaner locomotive operation within the State. The Account could begin implementation by the end of 2022, with potential PM and NOx reductions by the end of 2023. CARB staff will coordinate with the District to ensure this measure does not duplicate the District's railyard indirect source rule.

VMT and Land Conservation

Integrating land and transportation strategies can have synergistic effects and help the state further reduce both criteria and greenhouse gas emissions by protecting land-based carbon while providing simultaneous reductions in emissions from transportation. Protection of lands that are at risk of conversion to urban or rural development through use of conservation easements or the implementation of local and regional planning policies that protect land from development result in the extinguishment of development rights, thereby avoiding increases in vehicle miles traveled (VMT) by limiting opportunities for expansive, vehicle-dependent forms of development. Currently, only some sustainable community strategies in regional transportation plans explicitly include conservation and management of natural and working lands. While cities and counties across California have developed local and county climate action plans to reduce GHG emissions and increase climate resilience, few capture the potential GHG reductions from conserving, restoring, and managing natural working lands. Although limited research is available on the direct effect of land conservation on VMT, the State is expanding efforts to understand the relationship and synergies of taking an integrated cross-sector approach.

Regional VMT Reductions

Today's California is shaped by historic patterns of growth in transportation and housing. While we have grown to be the fifth largest economy in the world, our residents, in search of an affordable place to live, and with insufficient transportation options, are too often left with little choice but to spend significant time and money driving from place to place. Where we put transportation and housing also imposes and often reinforces long-standing racial and economic injustices by placing a disproportionate burden on low-income residents, who end up paying the highest proportion of their wages for housing and commuting. Staff and elected officials of local, sub-regional, regional, and State government bodies all have critical authorities and roles to contribute and could take steps to improve these outcomes, but so far, all –

acting rationally within the State's current structure of incentives, political forces, and policy restrictions – have not been able to enact the magnitude of change needed. There are unique opportunities for elected officials to improve mobility options within the transportation sector to reduce emissions and help with attainment of health-based air quality standards in the South Coast.

Co-Benefits from Electrification of Buildings due to 2017 Climate Change Scoping Plan

Buildings contribute directly to emissions when fuel (primarily natural gas) is combusted on-site for space and water heating. As grid electricity in California transitions to 100 percent clean energy, building electrification can reduce fuel combustion emissions in buildings. The framework for this measure is contained in Alternative 1 of the 2017 Climate Change Scoping Plan adopted by the CARB Board in 2017, and includes measures pertaining to appliance technology substitution; demand reduction; and electrical efficiency in industry, agriculture, residential, and commercial lighting; and residential air conditioning, freezing, and refrigeration. An implementation framework for building electrification would consider mechanisms to require and incentivize early retirement/replacement and new installations of residential and commercial water heating, space heating, and air conditioning appliances with zero or near-zero emission technologies such as high efficiency electric heat pumps.

2) Additional Incentive Funding

The 2016 AQMP demonstrated that attainment of the ozone standard in 2023 would require over $1 billion per year in incentive funding for clean vehicles through 2023. This represents a substantial increase in funding beyond traditional incentive programs, and new incentive programs are being developed to provide the needed funding.

Recent programs that will provide continued incentive funding include AB 1274 (O'Donnell) that creates annual smog abatement fees that are transferred to the Carl Moyer Program. This bill is anticipated to create a sustainable funding source of about $25-30 million annually for the South Coast.

Moving forward, through 2023, CARB and the District will advocate for several funding sources including: (1) additional Greenhouse Gas Reduction Funds (GGRF), (2) Statewide Bond Funding, and (3) Voting District Authorization for Clean Air Legislation, SB 732 (Allen), as described below. In addition, CARB and the District will continue working hard to explore all additional options to help secure sufficient funding to achieve the ozone standard in 2023.

1. GGRF - Given that the South Coast already has three approved communities in the AB 617 program and is likely to add 2 more in 2020, the District will be advocating for at least $150 to $200 million in sustainable annual GGRF monies for incentive funding going forward, to benefit disadvantaged communities within the South Coast that are in the AB 617 program or are being considered for that program in future years.

2. Statewide Bond Funding – Currently, there are multiple pieces of State legislation that would result in bond measures for the statewide ballot (e.g. AB 352 (E. Garcia); AB 1298 (Mullin); and SB 45 (Allen)), that include funding at around the $4 billion level, for purposes that include the funding of zero and near-zero emission vehicle technologies and infrastructure. These bills are expected to be consolidated into one primary bond bill in 2020 and represent a substantial potential source of incentive funding to benefit air quality within the South Coast. District staff will be working with the California Air Pollution Control Officers Association to secure a portion of these bond monies for incentive funding for local air districts, including in the South Coast, to reduce air pollution and facilitate attainment of federal air quality standards.

3. Voting District Authorization for Clean Air Legislation, SB 732 (Allen) – The District is currently sponsoring State legislation, SB 732 (Allen), which seeks authorization from the Legislature to create a voting district in the South Coast to allow local funding measures to be placed on the ballot. The bill allows the people of the South Coast to decide for themselves whether they want to invest in clean air and address climate change. Once the bill passes the State legislature and is signed into law, it would allow a sales tax measure to be put on a ballot within the South Coast, either by voter initiative or by District Board action.

   This bill could result in the South Coast receiving a sustainable source of funding (estimated $1.4 billion dollars per year) to be used primarily for incentive funding for clean vehicles, infrastructure and equipment to facilitate implementation of the 2016 AQMP and future AQMPs within the South Coast.

3) Reductions from Federal Sources

Despite the many actions being taken by the District and CARB, the contribution of emissions from interstate sources coupled with limitations on regulatory authority over large and growing emissions from several off-road sources mean that achieving emissions reductions necessary to achieve federal standards will also require strong action at the federal level. CARB and the District continue to work with federal and international agencies to advocate for

more stringent emission standards for sources that are not under State and local regulatory purview, but federal action is still forthcoming.

Emissions from sources subject to federal jurisdiction and international sources are either increasing or not keeping pace with reductions in other sectors in the South Coast. The following actions regarding sources under federal and international control are needed to usher in the cleanest technology and reduce emissions from these sources. These measures represent the transition to cleaner technologies that is needed in all sectors to achieve the goals set forth in this document and to achieve air quality standards in the future. The estimated emissions reductions in Table 6 from these measures represent complete transitions of these fleets and the maximum potential reductions from these sources. Thus, the measures may achieve more reductions than necessary to meet the standard if every single measure were implemented to the maximum extent. California understands that U.S. EPA could also choose to achieve reductions by providing incentive funding to accelerate the transition to clean technologies. At a minimum, some combination of these federal measures are necessary, through regulations, incentives or other means, for California to achieve the final increment of emissions reductions needed to meet the ozone standard, Table 6.

Table 6: Reductions from Federal and International Sources

Measures	Measure Description	2023 NOx Reductions (tpd)
Low-NOx Heavy-Duty Vehicles	Heavy-duty vehicles (above 14,000 lbs. GVWR) powered by low-NOx standard in 2023	**Up to 35**
Low-NOx Ocean-Going Vessels	Ocean-going vessels coming to California powered by Tier 3 engines in 2023	**Up to 28**
Low-NOx Locomotives	Locomotives coming to California powered by Tier 4 engines in 2023	**Up to 11**
Low-NOx Aircraft	Aircraft NOx reduced 20% from 2012 levels	**Up to 4**
Total Reductions		**Up to 78**

The Ozone SIP Update will produce emissions reductions sufficient to achieve the 108 tpd of NOx reductions allocated to "Further Deployment of Cleaner Technologies" measures approved under Section 182(e)(5) of the Act.

Environmental Impacts

The District, as Lead Agency under the California Environmental Quality Act (CEQA), has reviewed the project pursuant to CEQA and the CEQA Guidelines. Pursuant to CEQA Guidelines section 15168, the District determined that the proposed Ozone SIP Update is considered a later activity within the scope of the programmatic project covered by the March 2017 Final Program Environmental Impact Report (PEIR) for the 2016 AQMP. It made this determination because no substantial changes or revisions to the project are necessary and no new significant environmental effects and no substantial increase in the severity of previously identified significant effects will occur as result of this later activity. As such, in accordance with CEQA Guidelines Section 15168(e)(2), the District found that the March 2017 Final PEIR for the 2016 AQMP adequately describes and analyzes the environmental effects of the project for the purposes of CEQA. Thus, the District found that no new environmental document is required pursuant to CEQA Guidelines Section 15168(c) and no subsequent CEQA document is required pursuant to CEQA Guidelines Section 15162.

To bolster its determination, the District found that the District adequately adopted mitigation measures in the March 2017 Final PEIR and made those measures a condition of approval of the 2016 AQMP. The District required and adopted an adequate Mitigation, Monitoring, and Reporting Plan, pursuant to Public Resources Code Section 21081.6 and CEQA Guidelines Section 15097, for the 2016 AQMP. Given the existing, adequate mitigation measures, the District found that it was not necessary to impose new or modified mitigation measures as a condition of the approval of this later activity, the proposed Ozone SIP Update. Further, the mitigation measures that were made a condition of approval of the 2016 AQMP as analyzed in the March 2017 Final PEIR and the corresponding Mitigation, Monitoring, and Reporting Plan that was adopted at that time will remain in effect through the life of the proposed project under consideration. In addition, Findings pursuant to CEQA Guidelines Section 15091 and a Statement of Overriding Considerations pursuant to CEQA Guidelines Section 15093 which were required and adopted for the 2016 AQMP, will remain in effect and applicable to the proposed project.

Since the District is the lead agency under CEQA, CARB acts as a responsible agency when it considers approving the proposed project. (CEQA Guidelines § 15096.) CEQA Guidelines, section 15096 dictates the responsible agency's role when reviewing a project that has been approved by a lead agency. Specifically, CARB must consider the environmental effects of the project as shown in the District's March 2017 Final PEIR prior to reaching a decision on the project. Under section 15096 of the CEQA Guidelines, if CARB finds that there are aspects of the EIR that do not adequately analyze the components of the Proposed Project that are within its authority to carry out, like the CARB

measures, then CARB "shall not approve the project as proposed if the agency finds any feasible alternative or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect the project would have on the environment."

After considering the March 2017 Final PEIR, there does not appear to be any additional alternatives or feasible mitigation measures within CARB's powers that would substantially lessen or avoid any significant effects that those parts of the project which it carries out would have on the environment. Specifically, the District's mitigation measures that it included in its March 2017 Final PEIR, identified in table 1.9-1, and the findings supporting its statement of overriding considerations adequately address impacts associated with CARB's measures in the proposed project. Many of the significant and unavoidable impacts triggering the statement of overriding considerations are not mitigable because the power to mitigate the impacts lies with other jurisdictions, not CARB or the District. Therefore, upon CARB's consideration of the March 2017 Final PEIR, as expressed in the associated resolution for this Board item, its approval of the proposed project would comply with its responsible agency requirements under CEQA Guidelines section 15096.

Chapter 3 – Conclusion and Recommendations

Conclusion

The Ozone SIP Update satisfies the requirements of Section 182(e)(5) of the Act, and articulates the joint strategy by the District and CARB for achieving the 108 tons per day of NOx reductions allocated to Section 182(e)(5) measures in the 2016 AQMP. The Ozone SIP Update calls for newly identified emission reduction strategies and innovative new measures; additional incentive funding to transition to the cleanest available technologies; and significant federal action and/or funding to achieve the required reductions from sources under federal responsibility. These reductions will achieve attainment of the ozone standard in 2023.

Staff Recommendations

The Ozone SIP Update satisfies the requirements of Section 182(e)(5) of the Act. CARB staff recommends that the Board adopt the Ozone SIP Update including the new commitment to develop the proposed Innovative New Measures, and direct the Executive Officer to submit it to U.S. EPA as a revision to the California SIP.

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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 32

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Appendix II

Current Air Quality

2016 AIR QUALITY MANAGEMENT PLAN

March 2017

FINAL 2016 AQMP
APPENDIX II

CURRENT AIR QUALITY

MARCH 2017

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

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Speaker of the Assembly Appointee

Vice Chairman: BEN BENOIT
Mayor Pro Tem, Wildomar
Cities of Riverside County

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County of Riverside

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Cities of Los Angeles County/Eastern Region

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County of Los Angeles

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Senate Rules Committee Appointee

DWIGHT ROBINSON
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SUMMARY

This appendix contains a detailed summary of air quality in 2015 and prior year trends for the South Coast Air Basin (Basin) and the Riverside County portion of Salton Sea Air Basin (SSAB), under the jurisdiction of the South Coast Air Quality Management District (SCAQMD or District). The Basin includes Orange County and the non-desert portions of Los Angeles, Riverside and San Bernardino counties. The Riverside County portion of the SSAB under the District's jurisdiction is the Coachella Valley Planning Area (Coachella Valley).

Chapter 1 of this appendix presents descriptions of the air quality setting for the SCAQMD jurisdiction, including the relevant boundaries, weather factors and emissions for both the Basin and the Coachella Valley. It also briefly describes the properties and health and welfare effects of the criteria pollutants, i.e., those pollutants that have an associated health-based National Ambient Air Quality Standard (NAAQS or federal standard). It also details the level and form of both the NAAQS and the California Ambient Air Quality Standards (CAAQS or State standards).

Chapters 2 and 3 present summaries of current air quality and trends for each of the criteria pollutants in the Basin and the Coachella Valley, respectively. These chapters include the 2015 peak concentrations and 2013–2015 3-year design values for comparison to federal and State standards, along with geographical, seasonal, and diurnal variations. Air quality statistics and trends presented in this appendix provide information on the recent history and current status and progress toward attainment of the NAAQS and CAAQS, providing a baseline for planning toward future attainment.

In the Basin, Ozone (O_3) and fine particulate matter (PM2.5, particles less than 2.5 microns in diameter) are the pollutants of primary concern. For these, the U.S. EPA has designated the Basin as a nonattainment area for the NAAQS. The Basin had the highest number of days exceeding the federal ozone NAAQS of any urban area nationwide in 2015. State standards for ozone, PM2.5, and PM10 are also not met in the Basin. The Basin is in attainment of the PM10 (particles less than 10 microns in diameter) NAAQS. Nitrogen dioxide (NO_2), carbon monoxide (CO), and sulfur dioxide (SO_2) levels are in attainment with both the federal and the State standards. The Basin is in attainment of the lead (Pb) NAAQS, with the final near-source monitoring location below the standard throughout the 2012 through 2015 time period. The District will request that U.S. EPA redesignate the Los Angeles County portion of the Basin as attainment for lead. The Basin is also in attainment of the State standards for lead, sulfates (SO_4^{2-}), and hydrogen sulfide (H_2S).

The Coachella Valley is a NAAQS nonattainment area for 8-hour ozone and 24-hour PM10 and also does not attain the California State standards for ozone and PM10. However, the Coachella Valley is now in attainment of the 1979 1-hour ozone NAAQS. All exceedances of the 24-hour PM10 NAAQS in the Coachella Valley are associated with high-wind natural events. PM2.5 concentrations remain below the federal and State standards in the Coachella Valley, along with the remainder of the criteria pollutants, except that the State hydrogen sulfide (H_2S) standard is exceeded due to naturally occurring emissions from the Salton Sea.

Detailed air quality statistics for each of the District's monitoring locations in the Basin and the SSAB are contained in the attachment to this appendix, for the years 1995 through 2015. Please refer to Appendix II from the 2003 AQMP[1] for the 1976–1989 prior-year statistics and to Appendix II from the 2007 AQMP[2] for 1990–2005 data.

[1] 2003 AQMP, Appendix II: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2003-air-quality-management-plan/2003-aqmp-appendix-ii.pdf?sfvrsn=2

[2] 2007 AQMP, Appendix II: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2007-air-quality-management-plan/2007-aqmp-appendix-ii.pdf?sfvrsn=2

CHAPTER 1

INTRODUCTION

Air Quality Setting

SCAQMD Jurisdiction and Air Quality Monitoring Network

Weather Factors

Emissions

Ambient Air Quality Standards

Design Values

Summary of Criteria Pollutants and Air Quality Standards

Air Quality Setting

SCAQMD Jurisdiction and Air Quality Monitoring Network

California's first local air pollution control agency, the Los Angeles County Air Pollution Control District (LAAPCD), was formed in 1947, and APCDs were formed in Orange, Riverside, and San Bernardino Counties soon afterward. These four agencies combined in 1976 to form the Southern California APCD, which was replaced by the South Coast Air Quality Management District (SCAQMD or District) by State legislation, effective February 1, 1977, with jurisdiction over the South Coast Air Basin (Basin). The Mojave Desert Air Quality Management District (MDAQMD) was also formed, which covers the Mojave Desert Air Basin (MDAB), except for a portion within SCAQMD jurisdiction in eastern Riverside County. Later, the Antelope Valley Air Pollution Control District (AVAPCD) was formed, which covers the Antelope Valley desert portion of Los Angeles County that is not within SCAQMD jurisdiction.

The Basin includes all of Orange County and the non-desert areas of Los Angeles, Riverside, and San Bernardino Counties. The District is also responsible for air quality in the Riverside County portion of the Salton Sea Air Basin (SSAB), which is primarily the Coachella Valley Planning Area (Coachella Valley). The region encompassed by the District is shown in Figure 1-1.

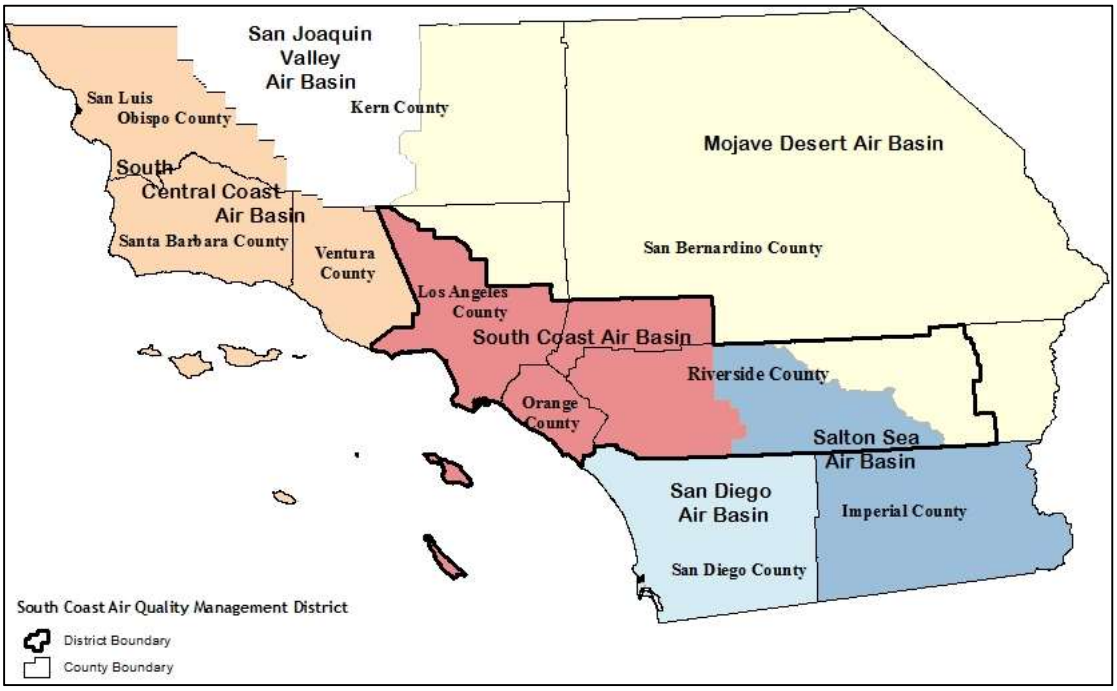

FIGURE 1-1

South Coast Air Quality Management District and Surrounding Jurisdictions

(The grey portion of Riverside County is the Coachella Valley Planning Area portion of the Salton Sea Air Basin)

The Basin has an area of 6,800 square miles with a population of approximately 16 million people in 2015. The Los Angeles urban area (the nation's second largest), the Anaheim-Fullerton urban area, and the Riverside-San Bernardino urban area lie within the Basin's boundaries. About two-thirds of the Basin's population lives within Los Angeles County.

The 2015 population in the Coachella Valley was approximately 465,000. SCAQMD also has jurisdiction over a small portion of the MDAB in Eastern Riverside County (see Figure 1-1). The area is sparsely populated desert and contains a portion of Joshua Tree National Park. The SSAB and the MDAB have a combined area of approximately 32,200 square miles. These two Basins include most of the desert portions of Los Angeles, Riverside, and San Bernardino Counties, as well as Imperial County and part of Kern County.

Table 1-1 summarizes the historic, current and future projections of the population of the Basin and the Coachella Valley.

TABLE 1-1

Historic and Projected Populations for South Coast Air Basin and Coachella Valley

AREA	Historic Population				Projected Population		
	1980	1990	2000	2010	2020	2031	2040
South Coast Air Basin	10,500,000	13,083,594	14,640,692	15,735,186	16,764,932	17,940,418	18,822,083
Coachella Valley	139,000	244,070	325,937	425,404	497,257	596,386	673,425

Source: Historic populations from Southern California Association of Governments, January 2016 CARB 2013 Almanac of Emissions and Air Quality, 2013 Edition, Appendix C [http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm]; Population projections from Southern California Association of Governments (SCAG) [January 2016 update]

U.S. EPA has set National Air Quality Standards (NAAQS) for six principal pollutants, which are called "criteria" pollutants," including O_3, PM (including both PM10 and PM2.5), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). In 2015, SCAQMD measured concentrations of air pollutants at 34 routine ambient air monitoring stations in its jurisdiction, with primary focus on these criteria pollutants. In addition to the ambient monitoring, lead concentrations continued to be monitored at five source-oriented monitoring sites, immediately downwind of stationary lead sources. By the beginning of 2015, the SCAQMD also added four new near-road monitoring stations. The near-road measurements focus on carbon monoxide (CO), nitrogen dioxide (NO_2), and PM2.5 near some of the most heavily trafficked roadways in southern California. Additions to the SCAQMD ambient air monitoring network since the previous 2012 AQMP, which included air quality data summaries through the 2011, include a new monitoring station in the southeastern Coachella Valley in the community of Mecca to measure PM10 and hydrogen sulfide (H_2S) and a station close to the Salton Sea to measure H_2S.

Monitoring Network Status

U.S. EPA has set National Air Quality Standards (NAAQS) and monitoring requirements for six principal pollutants, which are called "criteria" pollutants," including O_3, PM (including both PM10 and PM2.5), carbon

monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead (Pb). In 2015, SCAQMD measured concentrations of air pollutants at 34 routine ambient air monitoring stations in its jurisdiction, with primary focus on these criteria pollutants. In addition to the ambient monitoring, lead concentrations are monitored at five source-oriented monitoring sites, immediately downwind of stationary lead sources.

There have been several changes to the SCAQMD ambient air monitoring network since the previous AQMP, which was finalized in 2012 and summarized air quality through 2011. Long-term monitoring stations at North Long Beach and Burbank had to be closed in 2013 and 2014, respectively, due to lease decisions beyond the District's control; replacements for these two stations are being sought at this time. Filter-based PM2.5 measurements have continued at North Long Beach until a suitable replacement station can be obtained. The Ontario Fire Station monitoring station was closed in 2014, due to lack of sufficient space at the Ontario site measurements beyond the limited PM10 and PM2.5 sampling. The Riverside-Magnolia station was also closed, with those measurements (PM2.5, lead, CO and NO_2) consolidated at the nearby Riverside-Rubidoux station in 2015. Replacements for the Ontario Fire Station and Riverside-Magnolia air monitoring stations are not required by U.S. EPA and the measurements from these locations are well-represented by other SCAQMD stations.

A new special-purpose monitoring station was added, starting in January 2013, in the southeastern Coachella Valley in the community of Mecca to measure PM10 and hydrogen sulfide (H_2S). A second H_2S monitor was added on Torres-Martinez tribal property to measure naturally occurring odors from the Salton Sea close to the shoreline.

To implement recent U.S. EPA requirements to monitor NO_2, CO, and PM2.5 near major roadways in large urban areas, four new near-road monitoring stations were installed. The NO_2 measurements began on January 1, 2014 at a near-road site at Vernon Street in Anaheim, Orange County, adjacent to Interstate Highway 5. This was followed by a new near-road site near Etiwanda Avenue in San Bernardino County next to Interstate Highway 10 in July 2014. CO measurements began at both the I-5 and I-10 near-road sites in December 2014. These two sites represent high traffic volume routes. Near-road NO_2 and PM2.5 measurements began in 2015 next to California Highway 60, west of Vineyard Avenue near the San Bernardino/Riverside County border, and next to Interstate Highway 710, at Long Beach Blvd. in Los Angeles County. These two sites represent high traffic volumes with a high fraction of diesel truck traffic.

The near-road monitoring is source-specific, that is, the pollutant measurements are directly impacted by the close proximity of the traffic-related emissions from the roadways. As a result, higher measured air pollutant concentrations are generally expected at the near-road sites than those found further away from the freeways. The near-road measurements provide representative pollutant exposure information for people who live, work, or go to school adjacent to freeways or who spend significant time traveling on the busiest

southern California roadways. Once sufficient near-road data is collected for a full 3-year design value[3] calculation, it can be included in analyses for attainment of the NAAQS.

Figure 1-2 shows the locations of the regular ambient air monitoring stations along with the District boundaries. Table A-1 and Figure A-1 in the attachment to this appendix also show the District's current ambient air monitoring network.[4]

[3] A design value is a statistic that describes the air quality status of a given area relative to the level and form of the NAAQS. For most criteria pollutants, the design value is a 3-year average and takes into account the form of the short-term standard (e.g., 98th percentile, fourth high value, etc.). Design values can also be calculated for standards that are exceedance-based (e.g., 1-hour ozone and 24-hour PM10) so that they can be expressed as a concentration instead of an exceedance count, in order to allow a direct comparison to the level of the standard. Note that the modeling design values used for the AQMP attainment demonstration are based on a 5-year period, weighted toward the center year, as specified in U.S. EPA modeling guidelines.

[4] For more detailed current information and maps of the SCAQMD air monitoring network by pollutant measured and monitoring station details, please refer to SCAQMD's Annual Air Monitoring Network Plan, available on the web at http://www.aqmd.gov/home/library/clean-air-plans/monitoring-network-plan.

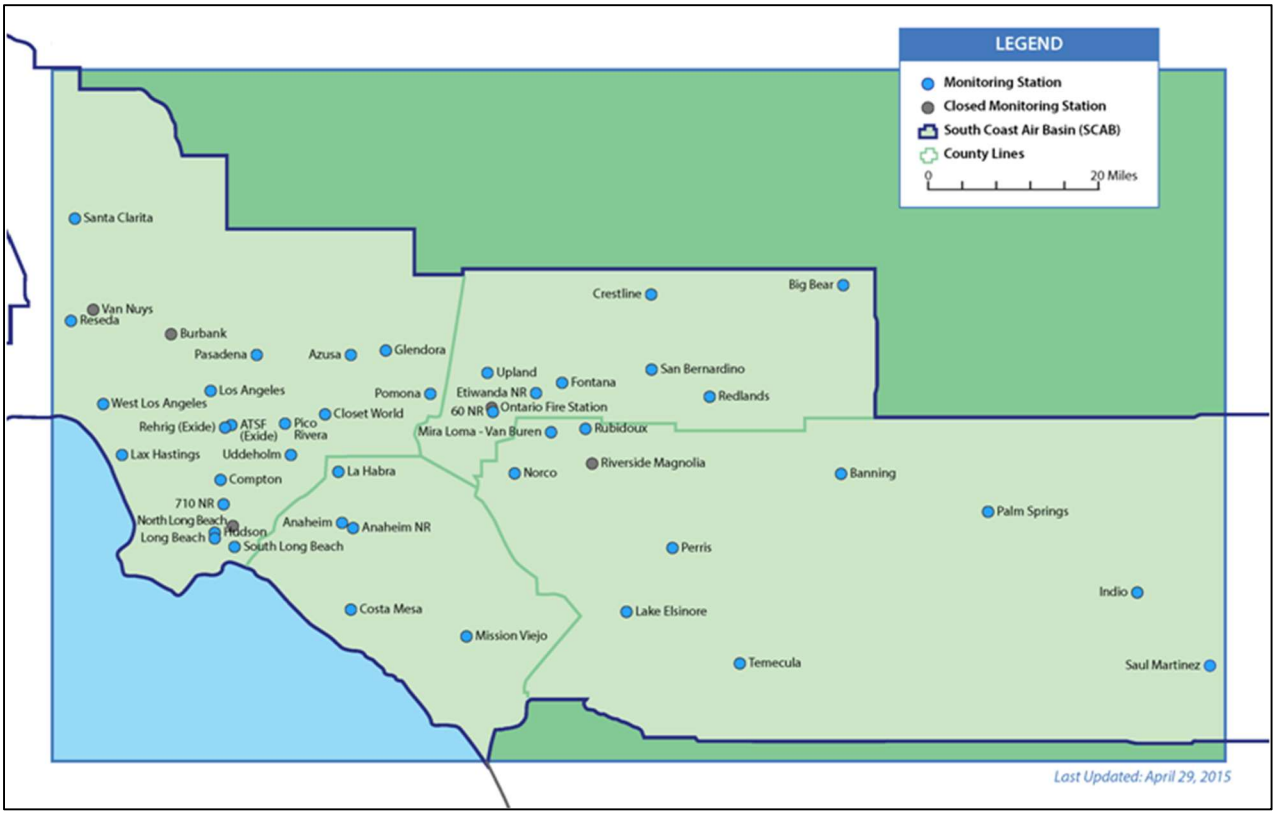

FIGURE 1-2

South Coast Air Quality Management District Ambient Air Monitoring Stations in 2015

[Note stations closed (grey dots): N. Long Beach in 2013 (FRM PM2.5 still operating), Burbank and Ontario Fire Station in 2014, Riverside-Magnolia in 2015, and Van Nuys Airport lead (Pb) monitor; Salton Sea Air Basin include: Palm Springs, Indio, and Mecca-Saul Martinez stations, in Riverside County's Coachella Valley; all other stations are in the South Coast Air Basin; I-710 (labeled 710 NR), CA-60 (60 NR), I-5 (Anaheim NR), and I-10 (Etiwanda NR) are near-road stations]

Weather Factors

The climate of the District varies considerably between the coastal zone, inland valleys, mountain areas, and deserts. Most of the Basin is relatively arid, with very little rainfall and abundant sunshine during the summer months. It has light winds and poor vertical mixing compared to most other large urban areas in the U.S. The combination of poor air dispersion and abundant sunshine provides conditions especially favorable to the formation of photochemical smog and the trapping of particulates and other pollutants. The Basin is bounded to the north and east by mountains with maximum elevations exceeding 10,000 feet. The unfavorable combination of meteorology, topography, and emissions from the nation's second largest urban area results in the Basin having some of the worst air quality in the U.S.

The prevailing daytime sea breeze tends to transport pollutants and precursor emissions from coastal areas into the Basin's inland valleys, and from there, still further inland into neighboring areas of the SSAB (especially the Coachella Valley) and the MDAB. Concentrations of primary pollutants (those emitted directly into the

air) are typically highest close to the sources which emit them. However, secondary pollutants (those formed in the air by chemical reactions, such as ozone and the majority of PM2.5) reach maximum concentrations some distance downwind of the sources that emit the precursors, due to the fact that the polluted air mass is moved inland by the prevailing winds many miles to areas where maximum concentrations are reached.

Emissions

The year 2012 emissions are the base year emissions used for the 2016 AQMP. In that year, the Basin's annual average daily emissions were approximately 2,123 tons of CO, 470 tons of volatile organic compounds (VOC), 540 tons of oxides of nitrogen (NOx), 18 tons of sulfur oxides (SOx), 152 tons of PM10, 66 tons of PM2.5, and 81 tons of ammonia (NH_3). The 2012 annual average daily emissions in the Coachella Valley are much lower than in the Basin: approximately 60 tons of CO, 14 tons of VOC, 27 tons of NOx, 0.2 tons of SOx, 15 tons of PM10, 3 tons of PM2.5, and 2.4 tons of NH_3. The difference in local emissions between these two areas under SCAQMD jurisdiction, along with the prevailing wind flows into the Coachella Valley from the Basin, illustrate the importance of pollutant transport to the Coachella Valley's air quality. Figure 1-3 shows the 2012 annual average daily emissions for the Basin and the Coachella Valley.

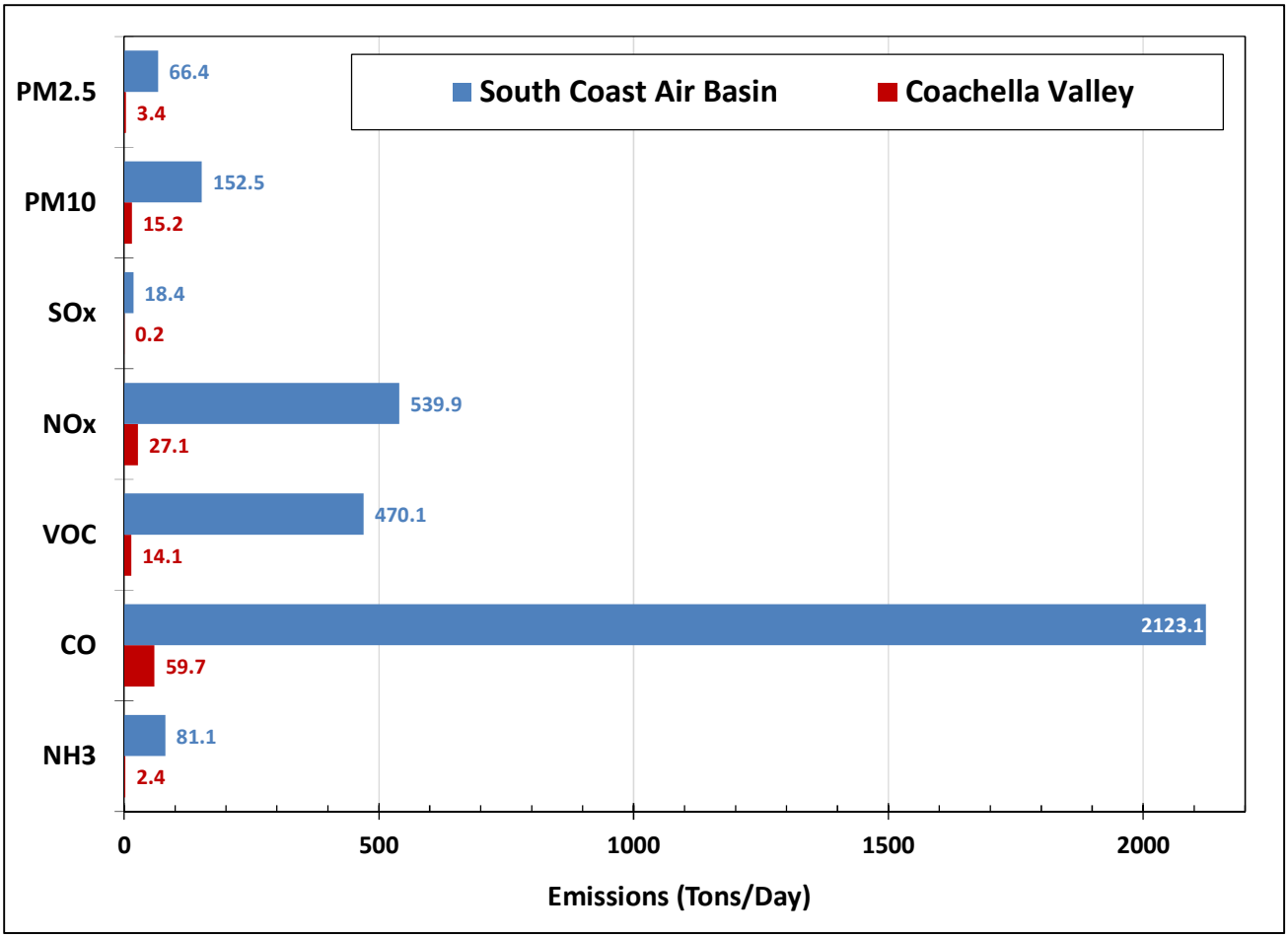

FIGURE 1-3
South Coast Air Basin and Coachella Valley 2012 Base Year Annual Average Daily Emissions
(Tons per Day)

Much of the directly emitted PM10 and PM2.5 is attributed to fugitive dust sources such as re-suspended road dust, construction activities, farming operations and wind-blown dust, but other directly-emitted substances such as diesel particulate are also significant. Additional PM10 and PM2.5 particles form in the atmosphere through secondary chemical reactions from gaseous precursor emissions. VOCs and NO_x are precursors of ozone, and they also react to form nitrates and solid organic compounds, which are a significant fraction of the ambient particulate matter. SO_2 reacts to form sulfates which are also significant contributors to the Basin's PM10 and PM2.5 levels. Most emissions vary relatively little by season, but there are large seasonal differences in the atmospheric concentrations of pollutants due to seasonal variations in the weather. Details of the 2012 base year and future-year projected emissions inventories are contained in Appendix III.

Ambient Air Quality Standards

Both the federal government and the State of California have adopted ambient air quality standards, which define the concentration below which long-term or short-term exposure to a pollutant is not expected to cause adverse effects to public health and welfare. The criteria pollutants, those that have federal health-based National Ambient Air Quality Standards (NAAQS or federal standards), are: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), coarse and fine particulate matter (PM10 and PM2.5, respectively), and lead. The State of California also has California Ambient Air Quality Standards (CAAQS or State standards) for these criteria pollutants, plus standards for, and sulfates (SO_4^{2-}), hydrogen sulfide (H_2S), and vinyl chloride, as well as a welfare-based standard for visibility-reducing particles.

For several of the NAAQS, there are both primary and secondary standards. Primary standards provide public health protection, including protecting the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. This document focuses mainly on the primary federal and State standards. The federal and State primary standards are summarized in Table 1-2, along with a brief summary of health and welfare effects. Further discussion of the health effects of air pollutants is presented in Chapter 2 and more detailed health information is presented in Appendix I: Health Effects.

TABLE 1-2

Ambient Air Quality Standards and Key Health and Welfare Effects

AIR POLLUTANT	FEDERAL STANDARD (NAAQS)	STATE STANDARD (CAAQS)	KEY HEALTH & WELFARE EFFECTS[#]
	Concentration, Averaging Time, Year of NAAQS Review	**Concentration, Averaging Time**	
Ozone (O_3)	**0.070 ppm, 8-Hour (2015)** 0.075 ppm, 8-Hour (2008) 0.08 ppm, 8-Hour (1997) 0.12 ppm, 1-Hour (1979)	**0.070 ppm, 8-Hour** **0.09 ppm, 1-Hour**	(a) Pulmonary function decrements and localized lung injury in humans and animals; (b) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) Increased mortality risk; (d) Increased respiratory related hospital admissions and emergency room visits; (e) Vegetation damage; (f) Property damage
Fine Particulate Matter (PM2.5)	**35 µg/m³, 24-Hour (2006)** **12.0 µg/m³, Annual (2012)** 15.0 µg/m³, Annual 1997)	**12 µg/m³, Annual**	(a) Exacerbation of symptoms in sensitive patients with respiratory or cardiovascular disease; (b) Decline in pulmonary function or growth in children; (c) Increased risk of premature death; (d) Increased risk of lung cancer; (e) increased asthma-related hospital admissions; (f) increased school absences and lost work days; (g) possible link to reproductive effects; (h) visibility reduction
Respirable Particulate Matter (PM10)	**150 µg/m³, 24-Hour (1997)**	**50 µg/m³, 24-Hour** **20 µg/m³, Annual**	
Carbon Monoxide (CO)	**35 ppm, 1-Hour (1971)** **9 ppm, 8-Hour (1971)**	**20 ppm, 1-Hour** **9.0 ppm, 8-Hour**	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Possible impairment of central nervous system functions; (d) Possible increased risk to fetuses
Nitrogen Dioxide (NO_2)	**100 ppb, 1-Hour (2010)** **0.053 ppm, Annual (1971)**	**0.18 ppm, 1-Hour** **0.030 ppm, Annual**	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in children with asthma; (b) Increased airway responsiveness in asthmatics; (c) Contribution to atmospheric discoloration
Sulfur Dioxide (SO_2)	**75 ppb, 1-Hour (2010)**	**0.25 ppm, 1-Hour** **0.04 ppm, 24-Hour**	Respiratory symptoms (bronchoconstriction, possible wheezing or shortness of breath) during exercise or physical activity in persons with asthma
Lead (Pb)	**0.15 µg/m³, rolling 3-month average (2008)**	**1.5 µg/m³, 30-day average**	(a) Learning disabilities; (b) Impairment of blood formation and nerve conduction; (c) cardiovascular effects, including coronary heart disease and hypertension
Sulfates-PM10 (SO_4^{2-})	**N/A**	**25 µg/m³, 24-Hour**	(a) Decrease in lung function; (b) Aggravation of asthmatic symptoms; (c) Vegetation damage; (d) Degradation of visibility; (e) Property damage
Hydrogen Sulfide (H_2S)	**N/A**	**0.03 ppm, 1-hour**	Exposure to lower ambient concentrations above the standard may result in objectionable odor and may be accompanied by symptoms such as headaches, nausea, dizziness, nasal irritation, cough, and shortness of breath

ppm – parts per million by volume; ppb – parts per billion by volume (0.01 ppm = 10 ppb)

Standards in bold are the current, most stringent standards; there may be continuing obligations for former standards

State standards are "not-to-exceed" values based on State designation value calculations

Federal standards follow the 3-year design value form of the NAAQS

[#] List of health and welfare effects is not comprehensive; detailed health effect information can be found in Appendix I: Health Effects or the U.S. EPA NAAQS documentation at http://www.epa.gov/ttn/naaqs/

Design Values

Air quality statistics are often presented in terms of the maximum concentrations measured at monitoring stations or in air basins, as well as for the number of days exceeding State or federal standards. These are instructive in regard to trends and the effectiveness of control programs. However, it should be noted that an exceedance of the concentration level of a federal standard does not necessarily lead to nonattainment designation. For NAAQS attainment/nonattainment decisions a *Design Value* for each station is calculated typically based on the most recent 3 years of data along with the form of the standard. For example, the design value for the 24-hour PM2.5 NAAQS is based on the annual 98th percentile measurement of all the 24-hour samples at each station, averaged over 3 years. The overall design value for an air basin is the highest design value of all the stations in that basin. U.S. EPA also allows certain data to be flagged and not considered for NAAQS attainment status, when that data is influenced by exceptional events, such as high wind events, wildfires, volcanoes, or some cultural events (e.g. Independence Day fireworks) that meet strict criteria. Table 1-3 shows the design value requirements utilizing the form of the federal standards for the federal criteria pollutants.

TABLE 1-3

National Ambient Air Quality Standards (NAAQS) and Design Value Requirements

Pollutant	Averaging Time**	NAAQS Level	Design Value Form of NAAQS*
Ozone (O_3)	1-Hour (1979) [revoked 2005]	0.12 ppm	Not to be exceeded more than once per year averaged over 3 years
	8-Hour (2015)	**0.070 ppm**	**Annual fourth highest 8-hour average concentration, averaged over 3 years**
	8-Hour(2008) [revised 2015]	0.075 ppm	
	8-Hour(1997) [revoked 2015]	0.08 ppm	
Fine Particulate Matter (PM2.5)	**24-Hour (2006)**	**35 µg/m³**	**3-year average of the annual 98th percentile of daily 24-hour concentration**
	Annual (2012)	**12.0 µg/m³**	**Annual average concentration, averaged over 3 years** *(annual averages based on average of 4 quarters)*
	Annual (1997) [revised 2012]	15.0 µg/m³	
Respirable Particulate Matter (PM10)	**24-Hour (1987)**	**150 µg/m³**	**Not to be exceeded more than once per year averaged over 3 years**
	Annual (1987) [revoked 2006]	50 µg/m³	Annual average concentration, averaged over 3 years
Carbon Monoxide (CO)	**1-Hour (1971)**	**35 ppm**	**Not to be exceeded more than once a year**
	8-Hour (1971)	**9 ppm**	
Nitrogen Dioxide (NO_2)	**1-Hour (2010)**	**100 ppb**	**3-year average of the annual 98th percentile of the daily maximum 1-hour average concentrations**
	Annual (1971)	**0.053 ppm**	**Annual average concentration, averaged over 3 years**
Sulfur Dioxide (SO_2)	**1-Hour (2010)**	**75 ppb**	**3-yer average of the 99th percentile of the daily maximum 1-hour average concentrations**
	24-Hour (1971)#	0.14 ppm	Not to be exceeded more than once per year
	Annual (1971)#	0.03 ppm	Annual arithmetic average
Lead (Pb)	**3-Month Rolling Average (2008)##**	**0.15 µg/m³**	**Highest rolling 3-month average of the 3 years**

Bold text denotes the current and most stringent NAAQS

* The NAAQS is attained when the design value (form of concentration listed) is equal to or less than the level of the NAAQS, assessed by station; for pollutants with the design values based on "exceedances" (1-hour O_3, 24-hour PM10, CO, and 24-hour SO_2), the NAAQS is attained when the concentration associated with the design value is less than or equal to the standard level:

- For 1-hour O_3 and 24-hour PM10, the NAAQS is attained when the 4th highest daily concentrations of the 3-year period is less than or equal to the standard level
- For CO and 24-hour SO_2, the standard is attained when the 2nd highest daily concentration of the most recent year is equal to or less than the standard level

** Year of U.S. EPA NAAQS update review shown in parenthesis and revoked or revised status in brackets; for revoked or revised NAAQS, areas may have continuing obligations until that standard is attained: for 1-hour O_3, the South Coast Air Basin has continuing obligations under the former 1979 standard; for 8-hour O_3, the NAAQS was lowered from 0.08 ppm to 0.075 ppm to 0.070 ppm, but the previous 8-hour O_3 NAAQS and most related implementation rules remain in place until that standard is attained

Annual and 24-hour SO_2 NAAQS are expected to be revoked 12/2021, one year from final attainment designations for the (2010) 1-hour SO_2 NAAQS expected 12/2020

3-month rolling averages of the first year (of the three year period) include November and December monthly averages of the prior year; the 3-month average is based on the average of "monthly" averages

Summary of Criteria Pollutants and Air Quality Standards

Ambient air quality standards are periodically reviewed by U.S. EPA and State agencies to incorporate the findings from the most current research available on the effects of pollutants. Alert and advisory levels for advising the public about unhealthful air quality are also recommended. The section below summarizes the pollutant properties and health information, along with the air quality standards, including the recently revised or newly established standards.

Ozone Properties

The Basin's unique air pollution problem was first recognized in the 1940's. The Los Angeles urban area smog was worse than other areas. Early research showed that ozone was being formed in the Basin's atmosphere from VOCs and NOx being emitted into the air in the presence of sunshine and trapped laterally by the mountainous terrain and vertically by strong low-altitude temperature inversions that act as a lid to vertical mixing of air. Regular monitoring of total oxidants was begun by the Los Angeles Air Pollution Control District (LAAPCD) in the 1950's, and annual maximum 1-hour ozone concentrations in excess of 0.60 ppm (600 ppb) were recorded at that time.

Ozone, a colorless gas with a sharp odor at very high concentrations, is a highly reactive form of oxygen. High ozone concentrations exist naturally high above the earth in the stratosphere. Some mixing of stratospheric ozone downward to the earth's surface does occur; however, the extent of ozone transport from aloft is limited. At the earth's surface in sites remote from urban areas, ozone concentrations are normally very low (0.03-0.05 ppm).

In urban areas, ozone is formed by a complicated series of chemical and photochemical reactions between VOCs, NOx, and the oxygen in the air. A decrease in ozone precursors may or may not result in a linear decrease in ozone. Ozone concentrations are dependent not only on overall precursor levels, but also on the ratio of the concentrations of VOCs to NOx , the reactivity of the specific VOCs present, the spatial and temporal distribution of emissions, the level of solar radiation, and other weather factors.

While ozone is beneficial in the stratosphere, where it blocks skin-cancer-causing ultraviolet radiation, it is a highly reactive oxidant. It is this reactivity which accounts for its damaging effects on materials, plants, and human health at the earth's surface.

The propensity of ozone to react with organic materials causes it to be damaging to living cells, and ambient ozone concentrations in the Basin are frequently sufficient to cause adverse health effects. Ozone enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection. People with respiratory diseases, children, the elderly, and people who exercise heavily are more susceptible to the effects of ozone.

Plants are sensitive to ozone at concentrations well below the health-based standards and ozone is responsible for significant crop damage and damage to forests and other ecosystems.

The adverse effects of ozone air pollution exposure on health have been studied for many years, as is documented by a significant body of peer-reviewed scientific research, including studies conducted in southern California. The 2013 U.S. EPA document, *Integrated Science Assessment of Ozone and Related*

Photochemical Oxidants,[5] describes these health effects and discusses the State of the scientific knowledge and research. A summary of health effects information and additional references can also be found in Appendix I: Health Effects.

Ozone Air Quality Standards

Studies have shown that even relatively low concentrations of ozone, if lasting for several hours, can significantly reduce lung function in normal healthy people. Effective September 16, 1997, the U.S. Environmental Protection Agency (U.S. EPA) adopted an 8-hour average federal ozone standard with a level of 0.08 ppm, intending to replace the 1-hour standard that was adopted in 1979 (0.12 ppm). This 1997 8-hour ozone standard was more stringent than the 1979 1-hour standard and provided greater protection to public health. The 8-hour standard is intended to help protect people who spend a significant amount of time working or playing outdoors, a group that is particularly vulnerable to the effects of ozone. (Due to the monitoring and reporting requirements of the older ozone standards, a level of 0.085 ppm or 85 ppb is required to exceed the 1997 8-hour standard and 0.125 ppm or 125 ppb is required to exceed the 1979 1-hour standard.)

The U.S. EPA eventually revoked the 1979 federal 1-hour ozone standard, effective June 15, 2005. However, the South Coast Air Basin and the former Southeast Desert Modified Air Quality Management Area (which included the Coachella Valley) had not attained the 1-hour federal ozone standard by the attainment date. On August 25, 2014, U.S. EPA proposed a clean data finding based on 2011–2013 data and a determination of attainment for the 1-hour ozone NAAQS for the Southeast Desert nonattainment area; this rule was finalized by U.S. EPA on April 15, 2015, effective May 15, 2015, including preliminary 2014 data. The Basin has not yet attained the 1-hour ozone NAAQS and has some continuing obligations under the former standard.

The 1997 8-hour standard was subsequently lowered from 0.08 to 0.075 ppm, effective May 27, 2008. On October 1, 2015, U.S. EPA finalized the new 2015 ozone NAAQS at 0.07 ppm, effective December 28, 2015. Nonattainment areas of the 1997 or the 2008 8-hour ozone standards, including the South Coast Air Basin and the Coachella Valley, still have continuing obligations to demonstrate attainment of that standard by the applicable attainment date. Statistics presented in this Appendix refer to the current 2015 8-hour ozone NAAQS, the revised 2008, and the revoked 1997 8-hour ozone NAAQS, as well as the revoked 1979 1-hour ozone NAAQS, for purposes of historical comparison and assessment of progress towards attainment of those standards.

The State of California Air Resources Board (CARB), established an 8-hour average State ozone standard (0.070 ppm), effective May 17, 2006. The earlier State 1-hour ozone standard (0.09 ppm) also continues to remain in effect.

While the 1-hour ozone episode levels and the related health warnings still exist, they are essentially replaced by the more protective health warnings associated with the current 8-hour ozone NAAQS, which includes the Air Quality Index (AQI)[6] scale for real-time reporting of air pollution levels and forecasts. The older 1-hour

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[5] U.S. EPA. (2013). Integrated Science Assessment of Ozone and Related Photochemical Oxidants (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/076F. [http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=247492]

[6] U.S. EPA Air Quality Index (AQI). [https://www.airnow.gov/index.cfm?action=aqibasics.aqi]

ozone episode warning levels include the State Health Advisory (0.15 ppm), Stage 1 (0.20 ppm), Stage 2 (0.35 ppm) and Stage 3 (0.50 ppm). The State 1-hour ozone Health Advisory was last exceeded in the Basin in 2013. The Basin's last 1-hour ozone Stage 1 episode occurred in 2003. The last 1-hour ozone Stage 2 episode occurred in 1988 and the last Stage 3 episode occurred in 1974.

Particulate Matter Properties

Particulate matter (PM) air pollution is a complex mixture of small particles and liquid droplets, made up of a number of components, including acids and salts (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. Particles originate from a variety of anthropogenic mobile and stationary sources and from natural sources. These particles can be emitted directly or formed in the atmosphere by transformations of gaseous emissions, such as sulfur oxides (SOx), nitrogen oxides (NOx), ammonia (NH_3) and volatile organic compounds (VOC). Examples of secondary particle formation include: 1) conversion of SO_x and NOx to acid droplets or vapor that further react with ammonia to form ammonium sulfate and ammonium nitrate; and 2) reactions involving gaseous VOC, yielding organic compounds that condense on existing particles to form secondary organic aerosol (SOA) particles.

A significant body of peer-reviewed scientific research, including studies conducted in Southern California, points to adverse impacts of particulate matter air pollution on both increased illness (morbidity) and increased death rates (mortality). The 2009 U.S. EPA *Integrated Science Assessment for Particulate Matter*[7] describes these health effects and discusses the State of the scientific knowledge. A summary of health effects information and additional references can also be found in the 2016 AQMP, Appendix I: Health Effects.

The size of particles is directly linked to their potential for causing health problems. Particles that are 10 micrometers (µm) in diameter or smaller (PM10) are of more concern than larger particles because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. PM air pollution is typically grouped into two overlapping categories:

- *Inhalable particles* (PM10), such as those found near roadways and dusty industries, are smaller than 10 µm in diameter. PM10 includes all PM2.5 particles;
- *Fine particles* (PM2.5), such as those found in smoke and haze, are 2.5 µm in diameter and smaller. These particles can be directly emitted from combustion sources, such as from diesel exhaust (soot) or forest fire smoke, or they can form when gases emitted from power plants, industries and motor vehicles react in the air. PM2.5 is a subset of PM10 particles.

PM10 Properties

Respirable particles (particulate matter less than about 10 micrometers in diameter) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis, and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to PM10.

PM10 particles are both directly emitted and formed chemically in the atmosphere from diverse emission sources. Major sources of PM10 include re-suspended road dust or soil entrained into the atmosphere by

[7] U.S. EPA. (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/139F. [http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546]

wind or activities such as construction and agriculture. These are mainly the coarser particles, in the PM10-2.5 coarse fraction range (often referred to as PM-Coarse, i.e., particles in the size range between 2.5 µm and 10 µm). Other components of PM10 form in the atmosphere (secondary PM10) from gaseous precursor emissions. These are mostly the smaller particles, mainly in the PM2.5 size range.

PM2.5 Properties

PM2.5, also known as fine particles, are the finer sized particles less than 2.5 µm in diameter; small enough to penetrate the defenses of the human respiratory system and lodge in the deepest recesses of the lung, causing potential adverse health impacts. The health effects include increased risks of heart attacks and strokes, aggravated asthma, acute bronchitis and chronic respiratory problems such as shortness of breath and painful breathing (in children, the elderly and sensitive people), and premature deaths (mainly in the elderly due to weaker immune systems). Sources of PM2.5 include diesel-powered vehicles such as buses and trucks, fuel combustion from automobiles, power plants, industrial processes, and wood burning.

In the Basin, much of the PM10 fraction is actually PM2.5 and smaller in size than 2.5 µm, a situation which has major implications for both health and atmospheric visibility. Reducing PM2.5 concentrations will therefore not only reduce the threat to the health of the Basin's population, but will also improve visibility in this region.

Total Suspended Particulate (TSP) Properties

Total suspended particulate (TSP) is the name applied to the complex mixture of particles suspended in the atmosphere, with no strict differentiation for particle size. TSP is collected on a glass fiber filter by means of a high volume sampler. Samples are collected for a 24-hour period every sixth day, and then returned to the laboratory to be weighed for mass and chemically analyzed to determine the concentrations of sulfate, nitrate, and lead. The federal and State standards for lead are based on the analysis of TSP samples. Other than the specific health effects of lead, the fine fraction of TSP has greater effects on health and visibility than the coarse fraction. Of greatest concern to public health are the particles small enough to be inhaled into the lungs (PM10) and especially the smaller fine particles that are inhaled more deeply into the lungs (PM2.5). As a result the federal standard for TSP mass has been replaced with the PM10 and PM2.5 standards.

Particulate Matter (PM) Air Quality Standards

PM10 Air Quality Standards

In 1987, U.S. EPA adopted PM10 standards, replacing the earlier TSP standard. The District began PM10 monitoring in late 1984. U.S. EPA promulgated both a short-term 24-hour average standard (150 µg/m^3)[8] and an annual standard (50 µg/m^3). Over the years, the forms and levels of the federal PM10 standards were reviewed by U.S. EPA. Changes to the federal standards for PM10 became effective on December 17, 2006. U.S. EPA first proposed to revise the 24-hour PM10 standard by establishing a new indicator for coarse particles (particles generally between 2.5 and 10 microns in diameter, PM10-2.5), to include PM10-2.5 that is mainly generated by resuspended dust from high-density traffic on paved roads, industrial sources, and construction sources; but specifically excluding PM10-2.5 that is generated by rural windblown dust and soils and by agricultural and mining sources. U.S. EPA proposed to set the PM10-2.5 standard at a level of 70 µg/m^3.

[8] µg/m^3 = micrograms per cubic meter

However, the coarse particle standard was not included as part of the final regulation which retained the 24-hour PM10 standard (150 µg/m^3).

U.S. EPA also revoked the annual PM10 standard due to a cited lack of evidence of adverse health effects linked to long-term exposure to coarse particles, beyond that already protected against by the PM2.5 annual standard. As part of the revision to the ambient air monitoring regulations in 2006, PM10-2.5 monitoring was required at National Core (NCore) multi-pollutant monitoring stations by January 1, 2011. Currently, the District measures PM10-2.5 at two NCore PM monitoring sites in the Basin (Central Los Angeles and Riverside-Rubidoux). In the most recent review of the PM standards completed in June of 2012, U.S. EPA did not propose changes to the PM10 standard and a PM10-2.5 standard has not been promulgated.

PM2.5 Air Quality Standards

In 1997, U.S. EPA adopted new federal air quality standards for the subset of fine particulate matter, PM2.5, to complement existing PM10 standards that target the full range of inhalable particulate matter. The District began monitoring PM2.5 concentrations in 1999. In 2006, U.S. EPA significantly lowered the level of the 24-hour PM2.5 standard, from 65 µg/m^3 to 35 µg/m^3, while retaining the level of the annual PM2.5 standard at 15.0 µg/m^3.

In the 2006 PM NAAQS review, U.S. EPA determined that individuals with pre-existing heart and lung diseases, older adults, and children are at greater risk from the effects associated with fine PM exposures. Based on the results of the previous studies and an extensive new body of scientific evidence that links the negative health impacts of PM2.5 exposure on these and possibly additional sensitive subpopulations, U.S. EPA strengthened the annual PM2.5 standard from 15.0 to 12.0 µg/m^3, effective March 18, 2013.[9] The current 24-hour standard of 35 µg/m^3 remained unchanged. In addition, U.S. EPA required near-roadway PM2.5 monitoring at two locations in the Basin, which have been implemented by the January 1, 2015 deadline. Adjustments were also made to the Air Quality Index (AQI), which is used to report current and forecasted pollutant levels, to be consistent with the current 24-hour and new proposed annual PM2.5 standards. Table 1-4 summarizes the history of the PM NAAQS to date.

[9] Since the revised annual PM2.5 NAAQS rule was proposed by U.S. EPA on June 14, 2012, it is often referred to as the 2012 annual PM2.5 federal standard.

TABLE 1-4

Summary of National Ambient Air Quality Standards (NAAQS) for Particulate Matter, 1971–Present

Year of NAAQS Rulemaking	PM Indicator	Averaging Time	Level ($\mu g/m^3$)
1971	TSP - Total Suspended Particles (≤ 25–45 µm)	24-hour	260
		Annual	75
1987	PM10	24-hour*	150
		Annual	50
1997	PM2.5	24-hour**	65
		Annual	15.0
	PM10	24-hour*	150
		Annual	50
2006	PM2.5	24-hour**	35
		Annual	15.0
	PM10	24-hour*	150
		Annual	(revoked)
2012	PM2.5	24-hour**	**35**
		Annual	**12.0**
	PM10	24-hour*	**150**

* The form of the PM10 24-hour NAAQS is *not to be exceeded more than once per year averaged over 3 years by station*

** The form of the PM2.5 24-hour NAAQS is based on the 98th percentile value by station

The 2013–2015 PM2.5 annual design values did not exceed the former (1997) annual PM2.5 standard (15 $\mu g/m^3$) at any Basin or Coachella Valley locations. Five out of 19 regular monitoring sites exceeded the current (2012) annual standard of 12 $\mu g/m^3$ for the period 2013–2015. Figure 1-4 shows the 2013-2015 annual PM2.5 design values by monitoring station for the Basin and the Coachella Valley, as compared to the current 2012 and former 1997 annual PM2.5 NAAQS.

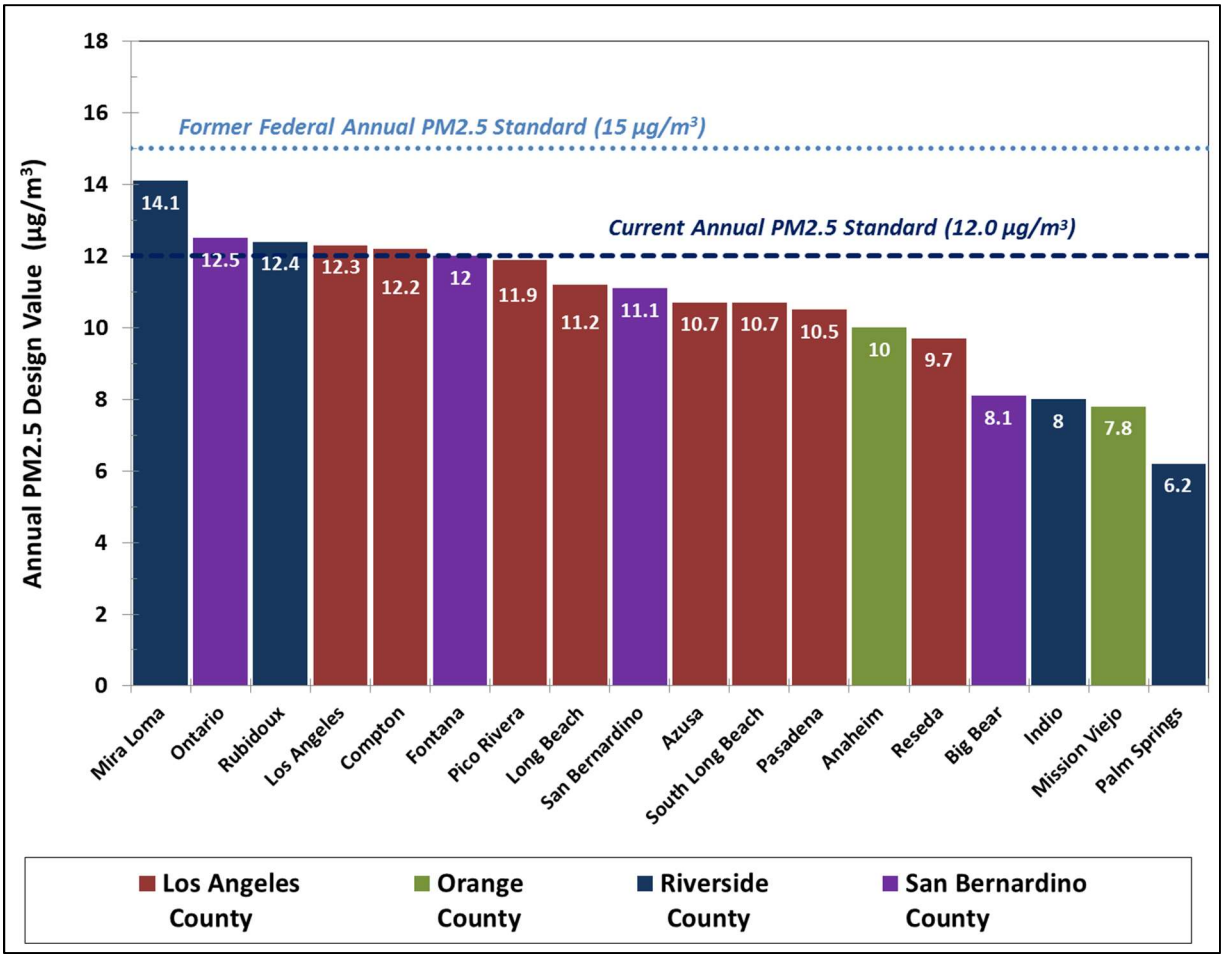

FIGURE 1-4

Annual PM2.5 3-Year (2013–2015) Design Values by Station, Compared to Current 2012 and Former 1997 Annual PM2.5 Federal Standards

CO Properties

Carbon monoxide (CO) is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere, and is produced by both natural processes and human activities. In remote areas far from human habitation, carbon monoxide occurs in air at an average background concentration of 0.04 ppm, primarily as a result of natural processes such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline. In 2000, 98 percent of the CO emitted into the Basin's atmosphere was from mobile sources. Consequently, CO concentrations are generally highest in the vicinity of major concentrations of vehicular traffic. CO concentrations have continued to decrease due to reformulated fuels and more efficient combustion in newer vehicles.

As a primary pollutant, carbon monoxide is directly emitted into the air. Ambient concentrations of CO in the Basin exhibit large spatial and temporal variations, due to variations in the rate and locations at which CO is emitted, and in the meteorological conditions that govern transport and dilution. Unlike ozone, CO tends to

reach high concentrations in the fall and winter months. The highest concentrations frequently occur on weekdays at times consistent with rush hour traffic and late at night during the coolest, most atmospherically stable portion of the day.

The adverse effects of ambient carbon monoxide air pollution exposure on health have been recently reviewed in the 2010 U.S. EPA *Integrated Science Assessment for Carbon Monoxide.*[10] This document presents a detailed review of the available scientific studies and conclusions on the causal determination of the health effects of CO. A summary of health effects information and additional references can also be found in Appendix I: Health Effects.

When carbon monoxide is inhaled in sufficient concentration, it can displace oxygen and bind with the hemoglobin in the blood, reducing the capacity of the blood to carry oxygen. Individuals most at risk from the effects of CO include heart patients, fetuses (unborn babies), smokers, and people who exercise heavily. Normal healthy individuals are affected at higher concentrations, which may cause impairment of manual dexterity, vision, learning ability, and performance of work. The results of studies concerning the combined effects of CO and other pollutants in animals have shown a synergistic adverse effect after exposure to CO and ozone.

CO Air Quality Standards

The State and federal CO standards have been reviewed recently, with no changes recommended. The CO standards are based on both short-term (1-hour; 35 ppm federal and 20 ppm State) and longer-term (8-hour; 9 ppm federal and 9.0 ppm State) exposures.

NO_2 Properties

Nitrogen dioxide (NO_2) is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from nitrogen (N_2) and oxygen (O_2) in air under conditions of high temperature and pressure which are generally present during combustion of fuels; NO reacts with the oxygen in air to give NO_2. NO_2 is largely responsible for the brownish tinge of polluted urban air. The two gases, NO and NO_2, are referred to collectively as oxides of nitrogen (NOx). In the presence of sunlight, NO_2 reacts to produce nitric oxide and an oxygen atom. The oxygen atom can react further to produce ozone, via a complex series of chemical reactions involving hydrocarbons (VOCs). NO_2 may also react to produce nitric acid (HNO_3) which reacts further to produce nitrates, which are a component of PM.

The adverse effects of ambient nitrogen dioxide air pollution exposure on health were reviewed in the 2008 U.S. EPA *Integrated Science Assessment for Oxides of Nitrogen – Health Criteria,*[11] and more recently in the

[10] U.S. EPA. (2010). Integrated Science Assessment for Carbon Monoxide (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/019F. [http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=218686]

[11] U.S. EPA. (2008). Integrated Science Assessment for Oxides of Nitrogen – Health Criteria (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/071. [http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=194645]

2016 U.S. EPA *Integrated Science Assessment for Oxides of Nitrogen – Health Criteria.*[12] These documents present detailed reviews of the available scientific studies and conclusions on the causal determination of the health effects of NO_2, including evidence supporting the short-term NO_2 standard (1-hour, 100 ppb), which was adopted in 2010. A summary of health effects information and additional references can also be found in Appendix I: Health Effects. NO_2 is a respiratory irritant and reduces resistance to respiratory infection. Children and people with respiratory disease are most susceptible to its effects.

NO_2 Air Quality Standards

Effective April 12, 2010, U.S. EPA established a primary NO_2 1-hour NAAQS, at 100 ppb (3-year average of the annual 98th percentile of 1-hour daily maximum concentrations for each station). The short-term standard supplements the existing (1971) annual NAAQS (0.053 ppm). In addition to the ambient NO_2 monitoring network, U.S. EPA also established requirements for near-road NO_2 monitoring in large metropolitan areas, within 50 meters of the most heavily trafficked roadways. Effective March 20, 2008, the California Air Resources Board (CARB) revised the State NO_2 1-hour standard from 0.25 ppm to 0.18 ppm and established a new annual State standard of 0.030 ppm.

SO_2 Properties

Sulfur dioxide (SO_2) is a colorless gas with a sharp odor. It reacts in the air to form sulfuric acid (H_2SO_4), which contributes to acid deposition, and sulfates, which is a component of PM10 and PM2.5. Most of the SO_2 emitted into the atmosphere is produced by the burning of sulfur-containing fuels.

The adverse effects of SO_2 air pollution exposure on health were reviewed in the 2008 U.S. EPA *Integrated Science Assessment (ISA) for Sulfur Oxides – Health Criteria*.[13] This document presents a detailed review of the available scientific studies and conclusions on the causal determination of the health effects of SO_2. A summary of health effects information and additional references can also be found in Appendix I: Health Effects.

At sufficiently high concentrations, sulfur dioxide affects breathing and the defenses of the lungs, and it can aggravate respiratory and cardiovascular diseases. Asthmatics and people with chronic lung disease or cardiovascular disease are most sensitive to its effects. Sulfur dioxide also causes plant damage, damage to materials, and acidification of lakes and streams.

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[12] U.S. EPA. (2016). Integrated Science Assessment for Oxides of Nitrogen – Health Criteria (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-15/068. [https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=310879]

[13] U.S. EPA. (2008). Integrated Science Assessment (ISA) for Sulfur Oxides – Health Criteria (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/047F. [http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=198843#Download]

SO_2 Air Quality Standards

Based on the review of the SO_2 standards, U.S. EPA has established the 1-hour SO_2 standard to protect the public health against short-term exposure. The 1-hour average NAAQS was set at 75 ppb and the annual (0.03 ppm) and 24-hour (0.14 ppm) federal standards were revoked, effective August 2, 2010.[14]

Sulfate Properties

Sulfates are chemical compounds which contain the sulfate ion (SO_4^{2-}) and are part of the mixture of solid materials which make up PM2.5, PM10 and TSP. Most of the sulfates in the atmosphere are produced by oxidation of sulfur dioxide. Oxidation of sulfur dioxide yields sulfur trioxide (SO_3) which reacts with water to produce sulfuric acid (H_2SO_4), which contributes to acid deposition. The reaction of sulfuric acid with basic substances such as ammonia yields sulfates, a component of PM.

In 2002, CARB reviewed and retained the State standard for sulfates, retaining the concentration level (25 $\mu g/m^3$) but changing the basis of the standard from a Total Suspended Particulate (TSP) measurement to a PM10 measurement. In their 2002 staff report,[15] CARB reviewed the health studies related to exposure to ambient sulfates, along with particulate matter, and found an association with mortality and the same range of morbidity effects as PM10 and PM2.5, although the associations were not as consistent as with PM10 and PM2.5. U.S. EPA has not promulgated a separate NAAQS for sulfates. The 2009 U.S. EPA *Integrated Science Assessment for Particulate Matter*[16] also contains a review of sulfate studies.

Lead (Pb) Properties

Lead in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters had historically been the main Basin sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there has been a dramatic reduction in atmospheric lead in the Basin over the past three decades. The primary source of lead is related to businesses that work with lead, such as lead battery recycling facilities. Another source is general aviation, since most small planes continue to use leaded fuels.

The adverse effects of ambient lead exposures on health have been reviewed in the 2013 U.S. EPA document, *Integrated Science Assessment for Lead: Final Report*.[17] This document presents a detailed assessment of the available scientific studies and presents conclusions on the causal determination of the health effects of lead,

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[14] The 1971 annual and 24-hour SO_2 NAAQS were revoked, effective August 23, 2010, however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour NAAQS. The final area designations are expected by January 31, 2020 due to new source-specific monitoring requirements.

[15] CARB. (2002). Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates. California Air Resources Board, Sacramento, CA. [http://www.arb.ca.gov/regact/aaqspm/isor.pdf]

[16] U.S. EPA. (2009). Integrated Science Assessment for Particulate Matter (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-08/139F. [http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=216546]

[17] U.S. EPA. (2013). Integrated Science Assessment for Lead (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/075F. [http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=255721#Download]

including the rationale to retain the current federal lead standard. A summary of health effects information and additional references can also be found in the 2016 AQMP, Appendix I: Health Effects.

Lead Air Quality Standards

The national standard for lead was revised on October 15, 2008 from a quarterly average of 1.5 µg/m^3 to a rolling 3-month average of 0.15 µg/m^3, with a maximum (not-to-be-exceeded) form, evaluated over a 3-year period (36 months). The current indicator of lead in total suspended particles (Pb-TSP) was retained. The revision became effective on January 12, 2009.

U.S. EPA also enhanced the lead monitoring requirements in its 2008 NAAQS revisions, requiring air monitoring near lead sources, those with the potential for 3-month average lead concentrations to exceed the revised standard of 0.15 µg/m^3. Lead monitoring is required in large urban areas with monitors located to measure lead concentrations in areas impacted by resuspended dust from roadways, nearby industrial sources identified as significant lead sources, hazardous waste sites, construction and demolition projects, or other fugitive dust sources of lead. Following a petition in 2009, U.S. EPA revised the monitoring requirements, lowering the emission threshold at which monitoring is required for both source-oriented and large urban area-based non-source oriented monitoring. The monitoring revision became effective in January 2011.

In 2015, the District's lead monitoring network included eight regular monitoring sites and an additional five source-specific sites. None of these locations exceeded the lead NAAQS in recent years and SCAQMD will request that U.S. EPA redesignate the Basin's remaining nonattainment area in Los Angeles County to attainment for the lead NAAQS.

CHAPTER 2

AIR QUALITY IN THE SOUTH COAST AIR BASIN

Overview of Air Quality in the Basin

- Current Air Quality Summary
- Attainment/Nonattainment Designations
- Air Quality Trends
- Spatial and Temporal Variability
- Air Quality Compared to Other U.S. Metropolitan Areas

Pollutant-Specific Air Quality Discussion

- Ozone (O_3)
- Particulate Matter (PM)
- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO_2)
- Sulfur Dioxide (SO_2)
- Sulfates (SO_4^{2-})
- Lead (Pb)

Overview of Air Quality in the Basin

Current Air Quality Summary

The maximum pollutant concentrations measured at SCAQMD monitoring stations in 2015 exceeded the levels of the federal and State standards for ozone, PM2.5, and nitrogen dioxide (NO_2). One or more stations in the Basin exceeded one or more of the most current federal standards in 2015 on a total of 146 days in 2015 (40 percent of the year), including 113 days over the 2015 ozone 8-hour NAAQS, 30 days over the 2006 24-hour PM2.5 NAAQS (including near-road sites, 25 days with just the ambient stations), 2 days over the 24-hour PM10 NAAQS (high-wind exceptional events), and 1 day over the 2010 1-hour NO_2 NAAQS. The Basin's maximum measured concentrations for ozone and PM2.5 in 2015 were among the highest in the country. In 2015, the Basin exceeded the revised 2008 and revoked 1997 8-hour ozone NAAQS on 81 and 47 days, respectively.

Both 24-hour and annual PM2.5 concentrations have improved significantly over the past 15 years and only two locations in the Basin (both in Metropolitan Riverside County) currently remain in violation of the 24-hour design value form of the PM2.5 NAAQS. However, both the 24-hour PM2.5 design values and number of days over the standard in the Basin have increased slightly each year since 2013, due in large part to the extreme drought conditions in Southern California and the associated lack of periodic rainout and increased dispersion normally associated with weather events in the winter months. While several stations in the Basin remain in violation of the current 2012 annual PM2.5 NAAQS (12.0 $\mu g/m^3$), no Basin stations have violated the former (1997) annual PM2.5 NAAQS (15.0 $\mu g/m^3$) in 2015 or since the 2011–2013 design value periods.

In 2015, NO_2 concentrations exceeded the level of the 1-hour NAAQS on one day at a single location. However, attainment of the NAAQS is measured with the three-year design value that takes into account the form of the federal standards and a multi-year average, as detailed previously in Table 1-3. The design value form of the NAAQS, based on the annual 98th percentile maximum daily 1-hour concentration at a station averaged over three years, did not violate the standard or affect the NO_2 NAAQS attainment designation. While the Basin also exceeded the PM10 24-hour NAAQS on two days at two different locations, this also does not jeopardize the Basin's clean design value, which allows for one exceedance per year averaged over three years, or the PM10 NAAQS attainment designation. Both PM10 exceedances were caused by high-wind events that would also qualify for exclusion under the U.S EPA Exceptional Event Rule.

The Basin exceeded the level of the State 1-hour and 8-hour ozone, annual and 24-hour PM10, and annual PM2.5 standards in 2015. The other criteria pollutants, sulfur dioxide (SO_2), carbon monoxide (CO), and sulfates (SO_4^{2-}), did not exceed federal or State standards. Figure 2-1 shows the Basin maximum pollutant concentrations for 2015, as a percentage of the federal and State standards.

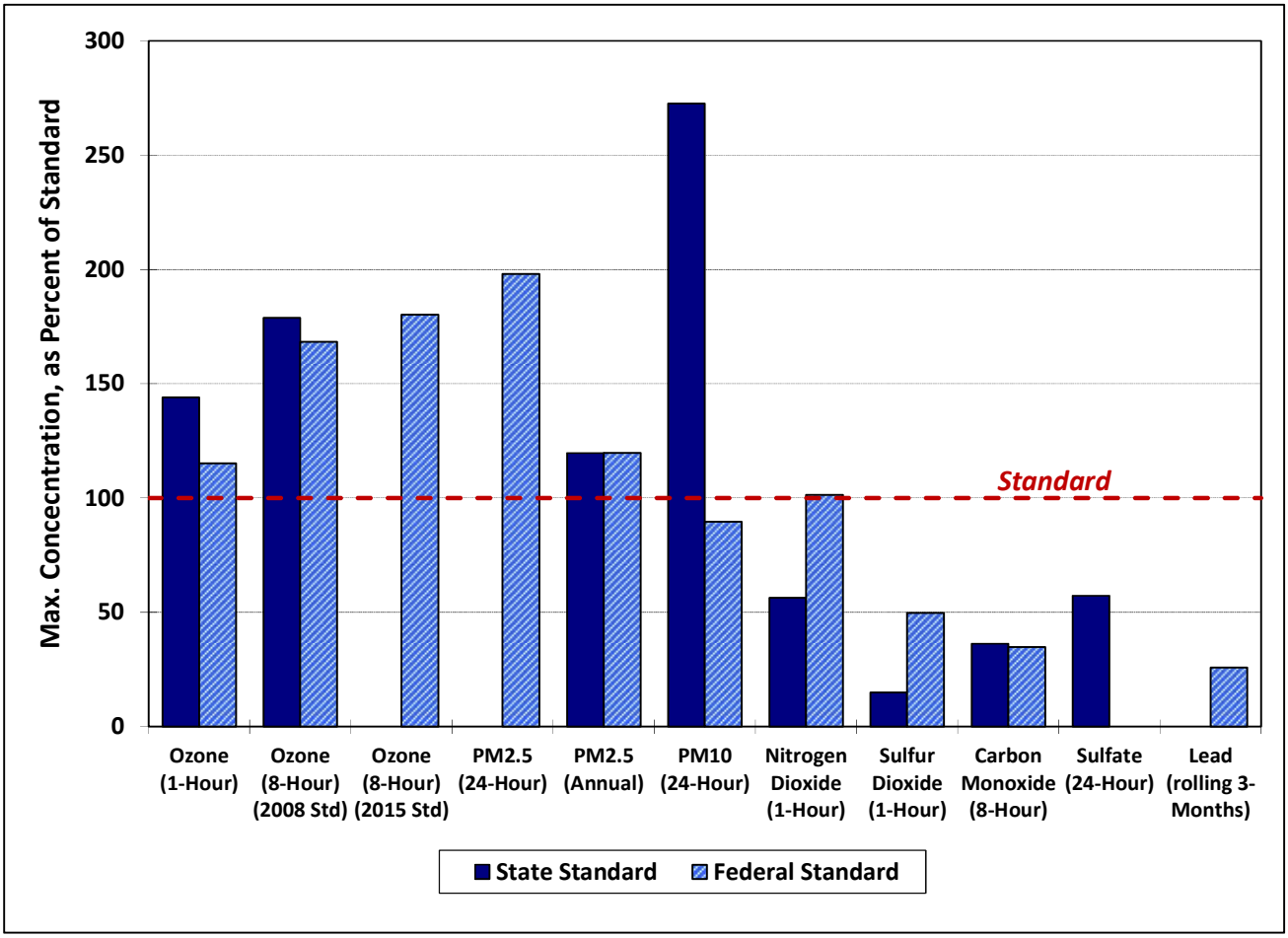

FIGURE 2-1
2015 South Coast Air Basin Maximum Pollutant Concentrations
(as Percent of State and Federal Standards)

Attainment/Nonattainment Designations

As discussed above, in 2015, the Basin exceeded the pollutant concentration levels defined by the National Ambient Air Quality Standards (NAAQS) for ozone, PM2.5, and NO_2. Attainment of the NAAQS is based on the design value level and form of the standard, which is typically averaged over a 3-year period. Figure 2-2 shows the current federal ozone and PM design value status for the Basin for the 2013–2015 3-year period, as compared to the current and former NAAQS. The current U.S. EPA NAAQS attainment designations for the Basin are presented in Table 2-1. The current attainment designation status of the State standards in the Basin is presented in Table 2-2.

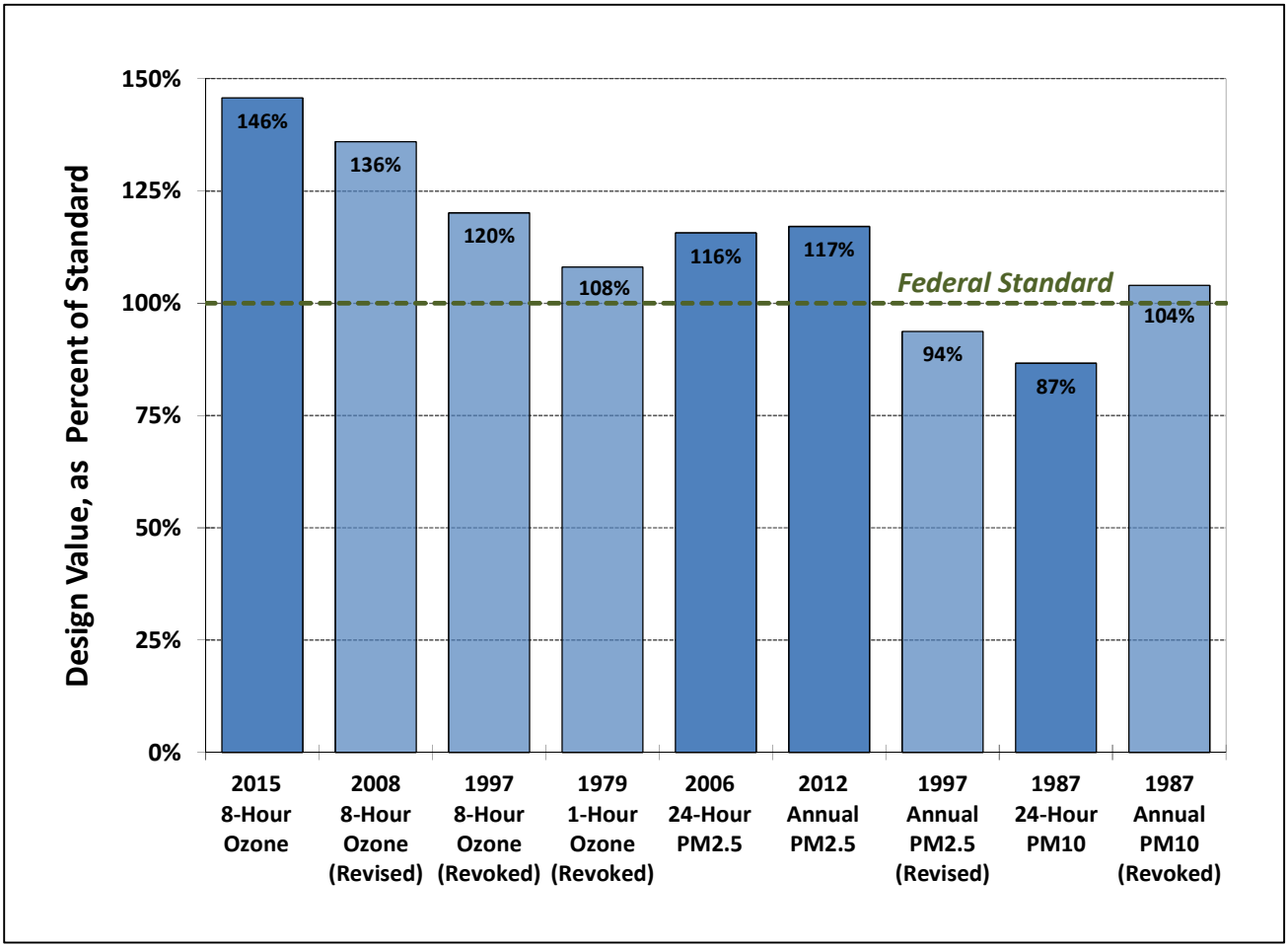

FIGURE 2-2

South Coast Air Basin and Coachella Valley 2013–2015 3-Year Design Values

(Percentage of current and former NAAQS; PM10 is combined FRM and FEM data; darker shade indicates current, most-stringent NAAQS)

TABLE 2-1

National Ambient Air Quality Standards (NAAQS) Attainment Status – *South Coast Air Basin*

Criteria Pollutant	Averaging Time	Designation[a]	Attainment Date[b]
Ozone (O_3)	(1979) **1-Hour** (0.12 ppm)[c]	Nonattainment ("extreme")	2/26/2023 (revised deadline)
	(2015) **8-Hour** (0.070 ppm)[d]	Pending – Expect Nonattainment ("extreme")	Pending (beyond 2032)
	(2008) **8-Hour** (0.075 ppm)[d]	Nonattainment ("extreme")	7/20/2032
	(1997) **8-Hour** (0.08 ppm)[d]	Nonattainment ("extreme")	6/15/2024
PM2.5[e]	(2006) **24-Hour** (35 µg/m^3)	Nonattainment ("serious")	12/31/2019
	(2012) **Annual** (12.0 µg/m^3)	Nonattainment ("moderate")	12/31/2021
	(1997) **Annual** (15.0 µg/m^3)	Attainment (final determination pending)	4/5/2015 (attained 2013)
PM10[f]	(1987) **24-hour** (150 µg/m^3)	Attainment (Maintenance)	7/26/2013 (attained)
Lead (Pb)[g]	(2008) **3-Months Rolling** (0.15 µg/m^3)	Nonattainment (Partial) (Attainment determination to be requested)	12/31/2015
CO	(1971) **1-Hour** (35 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
	(1971) **8-Hour** (9 ppm)	Attainment (Maintenance)	6/11/2007 (attained)
NO_2[h]	(2010) **1-Hour** (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	(1971) **Annual** (0.053 ppm)	Attainment (Maintenance)	9/22/1998 (attained)
SO_2[i]	(2010) **1-Hour** (75 ppb)	Designations Pending (expect Unc./Attainment)	N/A (attained)
	(1971) **24-Hour** (0.14 ppm) (1971) **Annual** (0.03 ppm)	Unclassifiable/Attainment	3/19/1979 (attained)

a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable

b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for an attainment demonstration

c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective 6/15/05 ; however, the Basin has not attained this standard and therefore has some continuing obligations with respect to the revoked standard; original attainment date was 11/15/2010; the revised attainment date is 2/6/23

d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone NAAQS implementation rule, effective 4/6/15; there are continuing obligations under the revoked 1997 and revised 2008 ozone NAAQS until they are attained

e) The attainment deadline for the 2006 24-hour PM2.5 NAAQS was 12/31/15 for the former "moderate" classification; U.S.EPA approved reclassification to "serious," effective 2/12/16 with an attainment deadline of 12/31/2019; the 2012 (proposal year) annual PM2.5 NAAQS was revised on 1/15/13, effective 3/18/13, from 15 to 12 µg/m^3; new annual designations were final 1/15/15, effective 4/15/15; U.S. EPA has proposed a clean data determination for the Basin for the 1997 annual (15.0 µg/m^3) and 24-hour PM2.5 (65 µg/m^3) standards – final action pending

f) The annual PM10 NAAQS was revoked, effective 12/18/06; the 24-hour PM10 NAAQS deadline was 12/31/2006; the Basin's Attainment Re-designation Request and PM10 Maintenance Plan was approved by U.S. EPA on 6/26/13, effective 7/26/13

g) Partial Nonattainment designation – Los Angeles County portion of the Basin only for near-source monitors; expect to remain in attainment based on current monitoring data; attainment re-designation request pending

h) New 1-hour NO_2 NAAQS became effective 8/2/10, with attainment designations 1/20/12; annual NO_2 NAAQS retained

i) The 1971 annual and 24-hour SO2 NAAQS were revoked, effective 8/23/10; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO2 1-hour NAAQS; final area designations expected by 12/31/20 due to new source-specific monitoring requirements; Basin expected to be in attainment due to ongoing clean data

TABLE 2-2

California Ambient Air Quality Standards (CAAQS) Attainment Status

South Coast Air Basin

Pollutant	Averaging Time and Level[b]	Designation[a]
		South Coast Air Basin
Ozone (O_3)	**1-Hour** (0.09 ppm)[c]	Nonattainment
	8-Hour (0.070 ppm)[d]	Nonattainment
PM2.5	**Annual** (12.0 µg/m^3)	Nonattainment
PM10	**24-Hour** (50 µg/m^3)	Nonattainment
	Annual (20 µg/m^3)	Nonattainment
Lead (Pb)	**30-Day Average** (1.5 µg/m^3)	Attainment
CO	**1-Hour** (20 ppm)	Attainment
	8-Hour (9.0 ppm)	Attainment
NO_2	**1-Hour** (0.18 ppm)	Attainment
	Annual (0.030 ppm)	Attainment
SO_2	**1-Hour** (0.25 ppm)	Attainment
	24-Hour (0.04 ppm)	Attainment
Sulfates	**24-Hour** (25 µg/m^3)	Attainment
H_2S[c]	**1-Hour** (0.03 ppm)	Unclassified

a) CA State designations shown were updated by CARB in 2016, based on the 2013–2015 3-year period; stated designations are based on a 3-year data period after consideration of outliers and exceptional events; Source: http://www.arb.ca.gov/desig/statedesig.htm#current

b) CA State standards, or CAAQS, for ozone, CO, SO_2, NO_2, PM10 and PM2.5 are values not to be exceeded; lead, sulfates, and H_2S standards are values not to be equaled or exceeded; CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations

c) SCAQMD began monitoring H_2S in the southeastern Coachella Valley in November 2013 due to odor events related to the Salton Sea; three full years of data are not yet available for a State designation

Air Quality Trends

There have been significant improvements in the Basin's air quality over the years since measurements began. Figure 2-3 shows the trends of *basin-days*[18] exceeding the federal standards for ozone, PM10, and PM2.5 for 1990 through 2015, as a percentage of annual days with monitoring data. PM2.5 shows the most dramatic improvement of these pollutants.

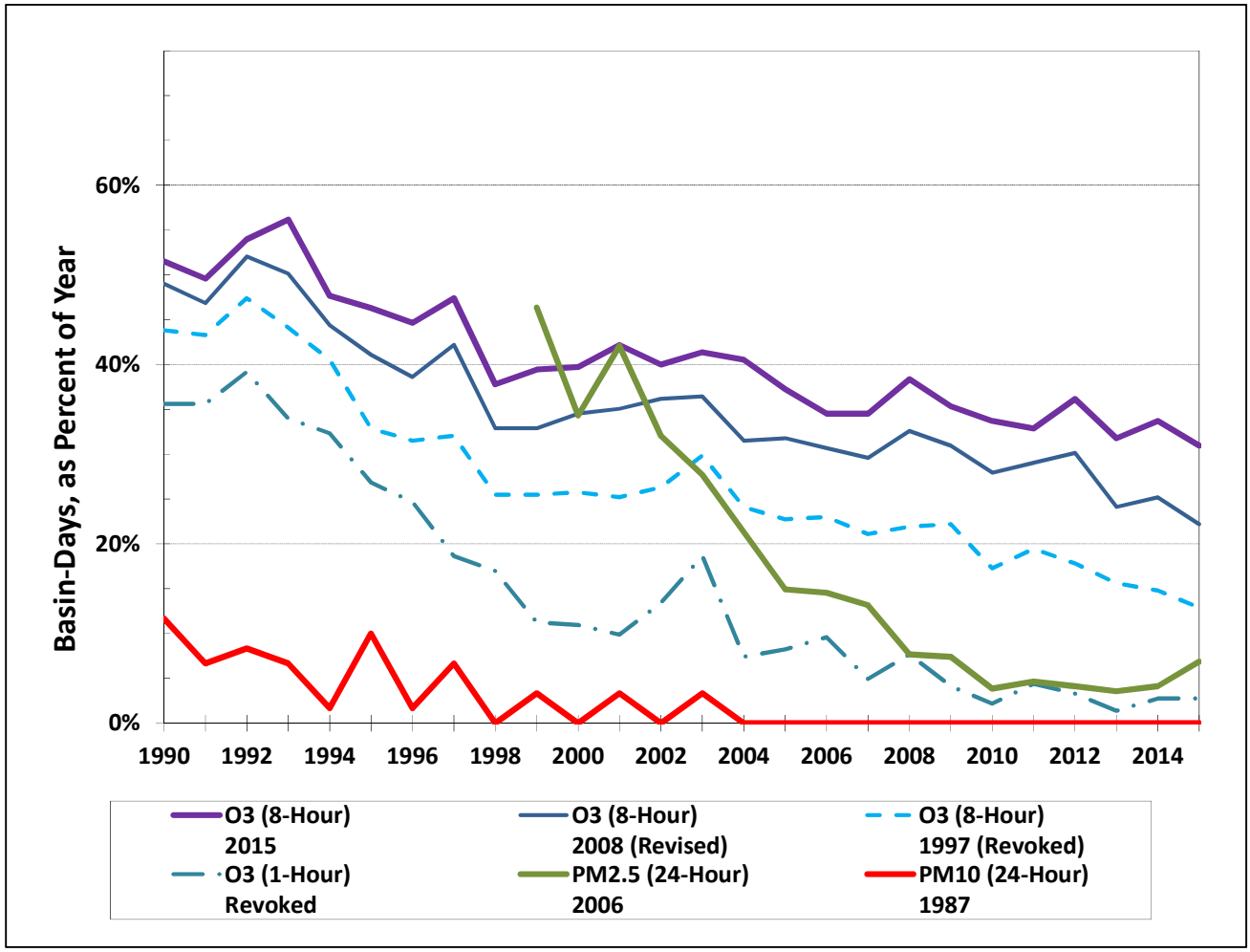

FIGURE 2-3

Trend of Basin-Days Exceeding Federal Standards, 1990–2015

(as percentages of the year; flagged PM10 exceptional events excluded)

[18] A "basin-day" is recorded if one or more locations in the air basin exceeded the level of the standard on that day. Multiple locations exceeding on the same day count as a single basin-day.

Figure 2-4 shows the trend from 1976 through 2015 of the annual number of Basin days exceeding various metrics for ozone, including: the 1-hour Stage 1[19] level (0.20 ppm); the 1-hour State Health Advisory level (0.15 ppm); the revoked 1979 1-hour NAAQS (0.125 ppm); the revoked 1997 8-hour NAAQS (0.08 ppm); the revised 2008 8-hour NAAQS (0.075 ppm); and the new 2015 8-hour NAAQS (0.070 ppm). All the ozone trends show the significant improvement achieved through the period. However, they also show the need for continued efforts in order to meet all the 8-hour ozone standards and the 1979 1-hour standard.

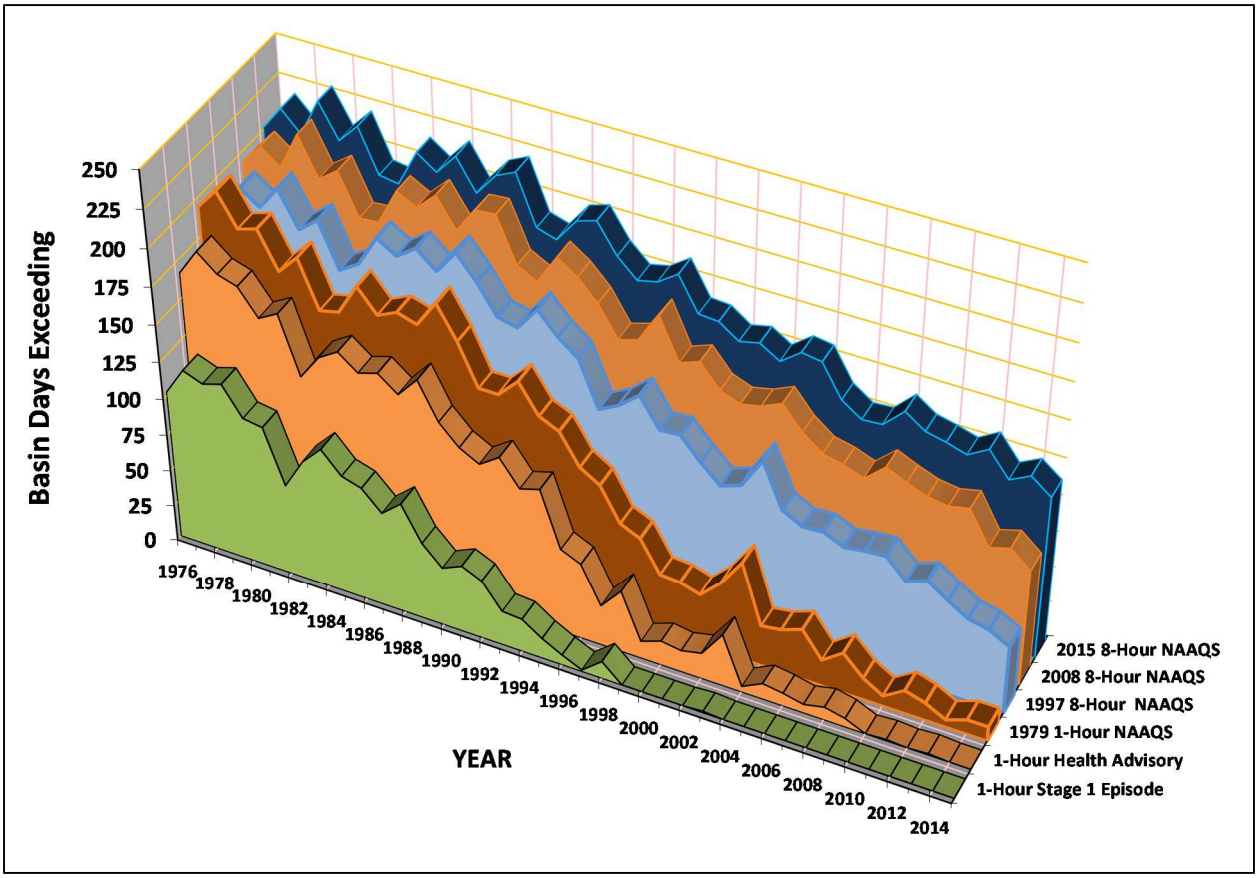

FIGURE 2-4

Trend of Number of Basin Days Exceeding Current and Former Ozone NAAQS and 1-Hour Ozone Episode Levels (Health Advisory and Stage-1), 1976 through 2015

Figure 2-5 shows the trend of design value concentrations for ozone and PM2.5 in the Basin for the past two decades, as percentages of the corresponding federal standards. The pollutant-specific sections of this chapter contain additional trends by pollutant.

[19] While the 1-hour ozone episode levels and the related 1-hour ozone health warnings still exist, they are essentially replaced by the more protective health warnings associated with the current 8-hour ozone NAAQS. The 1-hour ozone episode warning levels include the State Health Advisory (0.15 ppm), Stage 1 (0.20 ppm), Stage 2 (0.35 ppm) and Stage 3 (0.50 ppm). The State 1-hour ozone Health Advisory was last exceeded in the Basin in 2013. The Basin's last 1-hour ozone Stage 1 episode occurred in 2003. The last 1-hour ozone Stage 2 episode occurred in 1988 and the last Stage 3 episode occurred in 1974.

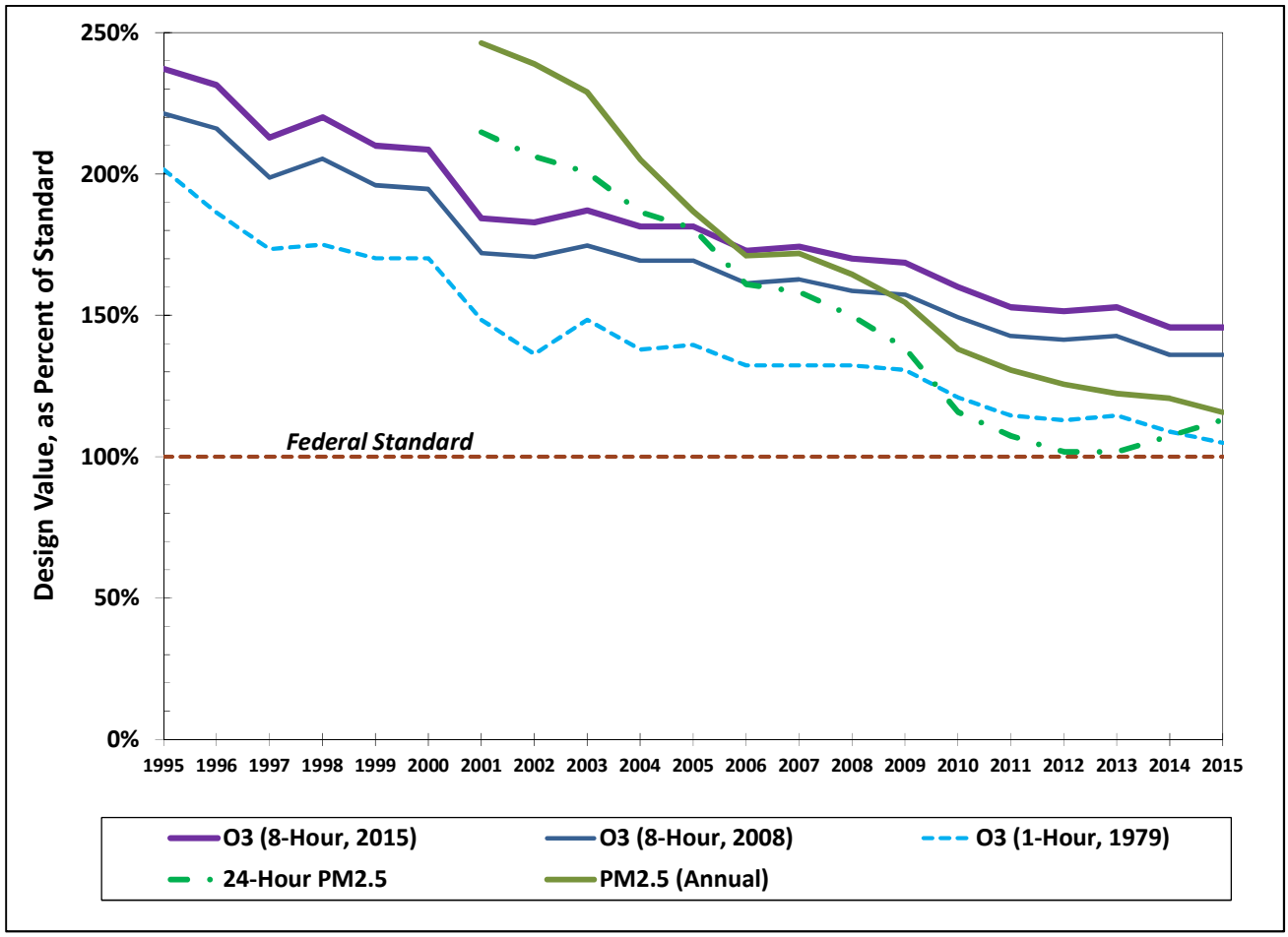

FIGURE 2-5

Trends of South Coast Air Basin Maximum 3-Year Design Values for Ozone (2015 8-hour, 2008 8-hour, and 1979 1-hour NAAQS) and PM2.5 (24-hour and Annual), 1995–2015

(as percentages of current and former federal standards)

Spatial and Temporal Variability

Air quality in the Basin varies widely by season and by area. The highest pollutant concentrations were all recorded in, or downwind of, the densely populated areas of the Basin. The Basin's air quality concentrations and the occurrence of exceedances vary with season due to seasonal differences in the weather, solar radiation intensity for photochemical reactions, and to a lesser extent, seasonal variations in emissions. Higher ozone concentrations are generally recorded during the May to October "smog season" and exceedances of the federal and State ozone standards are most frequent in July and August. However, the stricter 2015 ozone NAAQS is exceeded between late March and early November.

Particulate matter (PM10 and PM2.5) levels do not have as clear of a pattern as ozone, and elevated concentrations are sometimes recorded throughout the year. However, the highest PM10 and PM2.5 concentrations are typically measured during the late fall and winter months. Figure 2-6 shows the number of Basin-wide days per month when any of the federal standards were exceeded in the Basin in 2015.

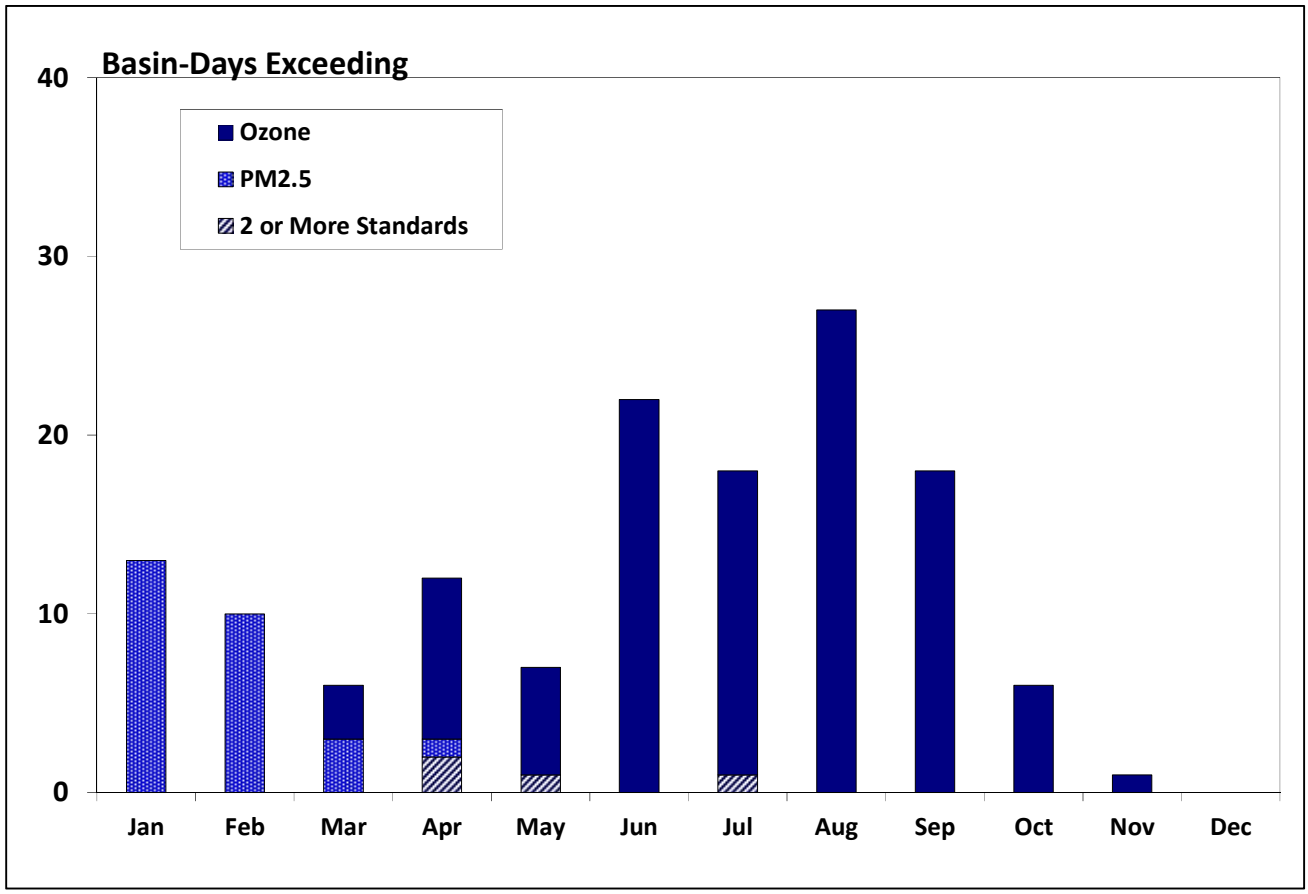

FIGURE 2-6
Number of Basin-Days per Month Exceeding the Federal Standards in 2015

The number of days exceeding the level of the new 2015 8-hour ozone NAAQS (0.070 ppm[20]) in 2015 varied widely by monitoring location, from 0 (zero) day to 86 days. Likewise, exceedances of the 2008 8-hour ozone NAAQS (0.075 ppm) also varied, from zero to 61 days. In both cases, ozone exceedances were fewest along the coast, and increased through the inland valleys to a maximum in the Basin's Central San Bernardino Mountains. Ozone concentrations tend to be higher on weekends than on weekdays, although this difference is slightly less distinct in recent years. The time of day with the highest average ozone concentrations is in the early to middle afternoon, although the inland areas of the Basin will often peak later in the afternoon or in the early evening.

While day-of-week and time-of-day PM2.5 concentrations varied considerably by location for 2013–2015 period, the day-of-week PM2.5 concentrations were slightly higher on Saturdays. The hourly PM2.5 diurnal peaks generally occurred in the morning, starting with the period of heaviest morning traffic. Additional spatial and temporal analyses are presented in the pollutant-specific sections later in this chapter.

[20] ppm = parts per million, by volume; ppb = parts per billion, by volume; 1 ppm = 1000 ppb

Air Quality Compared to Other U.S. Metropolitan Areas

In spite of significant improvement, the Basin still has some of the worst air quality in the nation. In 2015, seven of the country's top ten locations most frequently exceeding the 2015 8-hour ozone NAAQS were located within the Basin, including stations in San Bernardino, Riverside and Los Angeles Counties.[21] The location with the highest number of days over the 2015 8-hour ozone NAAQS was in the Basin's Central San Bernardino Mountains (86 days in the community of Crestline). The Basin exceeded the 2008 8-hour ozone NAAQS on 81 days, more days than any other areas in the country. The Basin exceeded the 2015 ozone NAAQS on 113 days. Similarly, seven out of the top ten locations with the highest maximum 8-hour average ozone concentrations in the nation were also located in the Basin. Of the top ten locations, only one area (Houston, Texas) was located outside of California. The highest maximum 8-hour average ozone concentration recorded was 0.127 ppm (in the Central San Bernardino Mountains area), almost 180 percent of the 2015 ozone NAAQS.

Figures 2-7 and 2-8 show the maximum pollutant concentrations in 2015 for the Basin compared to other major metropolitan areas in the U.S. and California air basins, respectively. Maximum concentrations in all of these areas exceeded both the 2015 and 2008 8-hour ozone NAAQS. The current annual PM2.5 standard was exceeded in the South Coast Air Basin, Houston, and Chicago metropolitan areas, as well as in California's San Joaquin Valley. The 24-hour PM2.5 standard, was exceeded in the Basin, Phoenix, and Chicago, as well as in all of the California air basins shown except San Diego.

The 24-hour PM10 standard was not exceeded in any of the U.S. areas and California air basins shown, once data flagged for exceptional events was excluded from the analysis. Of the areas shown for 2015, the level of the 1-hour NO_2 federal standard was exceeded in the Basin, Houston, and New York areas, as well as in the San Joaquin Valley. SO_2 concentrations were below the 1-hour federal standard in the Basin and in all of the urban areas shown in Figures 2-7 and 2-8. However, the SO_2 standard was exceeded in other U.S. urban and rural areas, with the highest 2015 concentrations recorded in the State of Arizona (Gila County). The CO standards were not exceeded in the U.S. in 2015 and are not shown in the figures. Nationwide, the federal lead standard (not shown) was exceeded at six locations in 2015, at source-oriented monitoring stations, in Pennsylvania and Arizona.

[21] The top 10 stations in the nation for number of exceedances in 2015 of the 2015 8-hour ozone NAAQS (0.070 ppm) include Basin stations in the areas of Central San Bernardino Mountains (in the Crestline-Lake Gregory community), Central San Bernardino Valley (San Bernardino and Fontana), East San Bernardino Valley (Redlands), Northwest San Bernardino Valley (Upland), San Gorgonio Pass (Banning), and Metropolitan Riverside County (Riverside-Rubidoux), as well as stations in the San Joaquin Valley Air Basin (Bakersfield and Fresno) and the Antelope Valley Air Basin (Lancaster).

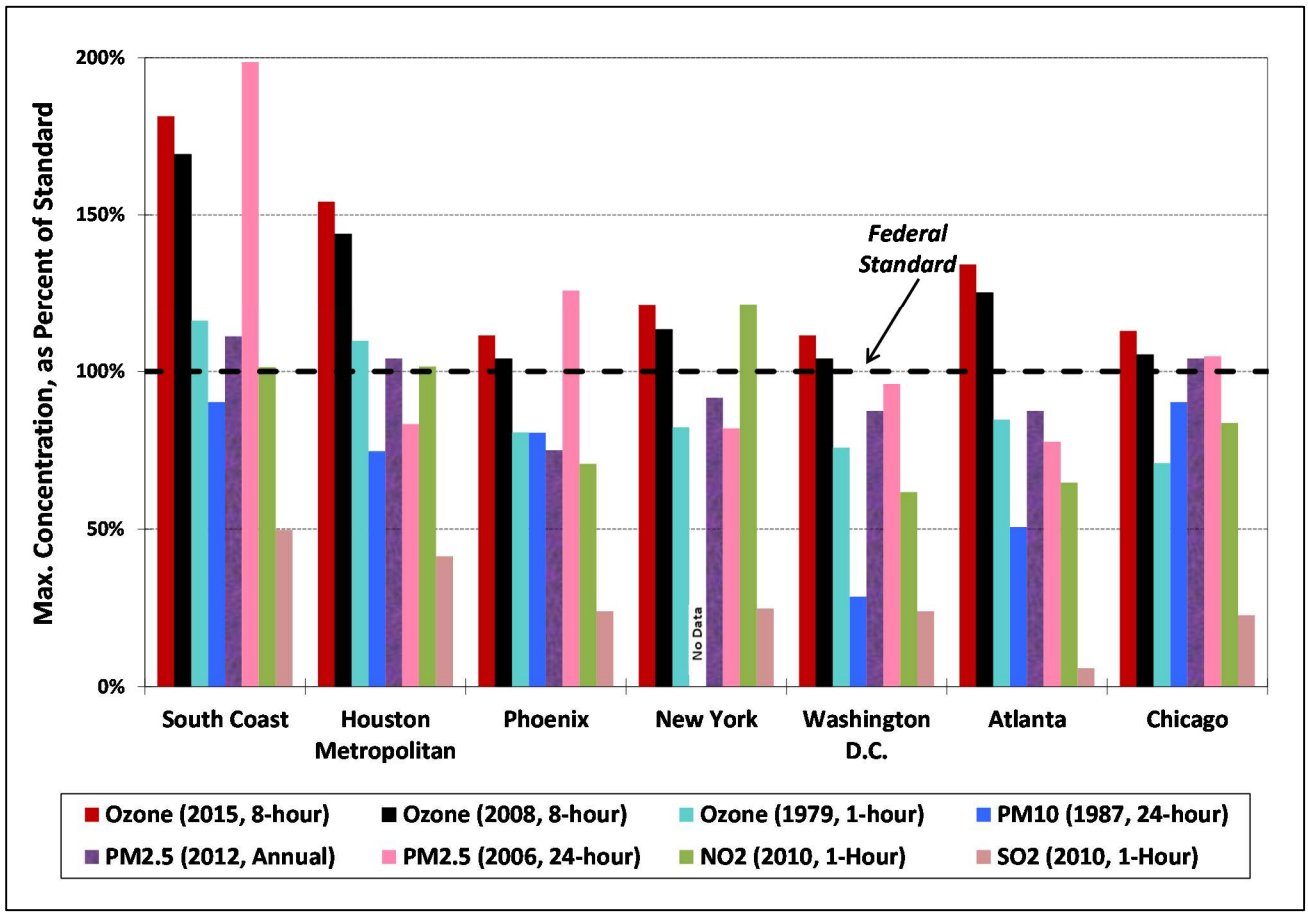

FIGURE 2-7

2015 South Coast Air Basin Air Quality Compared to Other U.S. Urban Areas

(maximum pollutant concentrations as percentages of the NAAQS, flagged exceptional events are excluded)

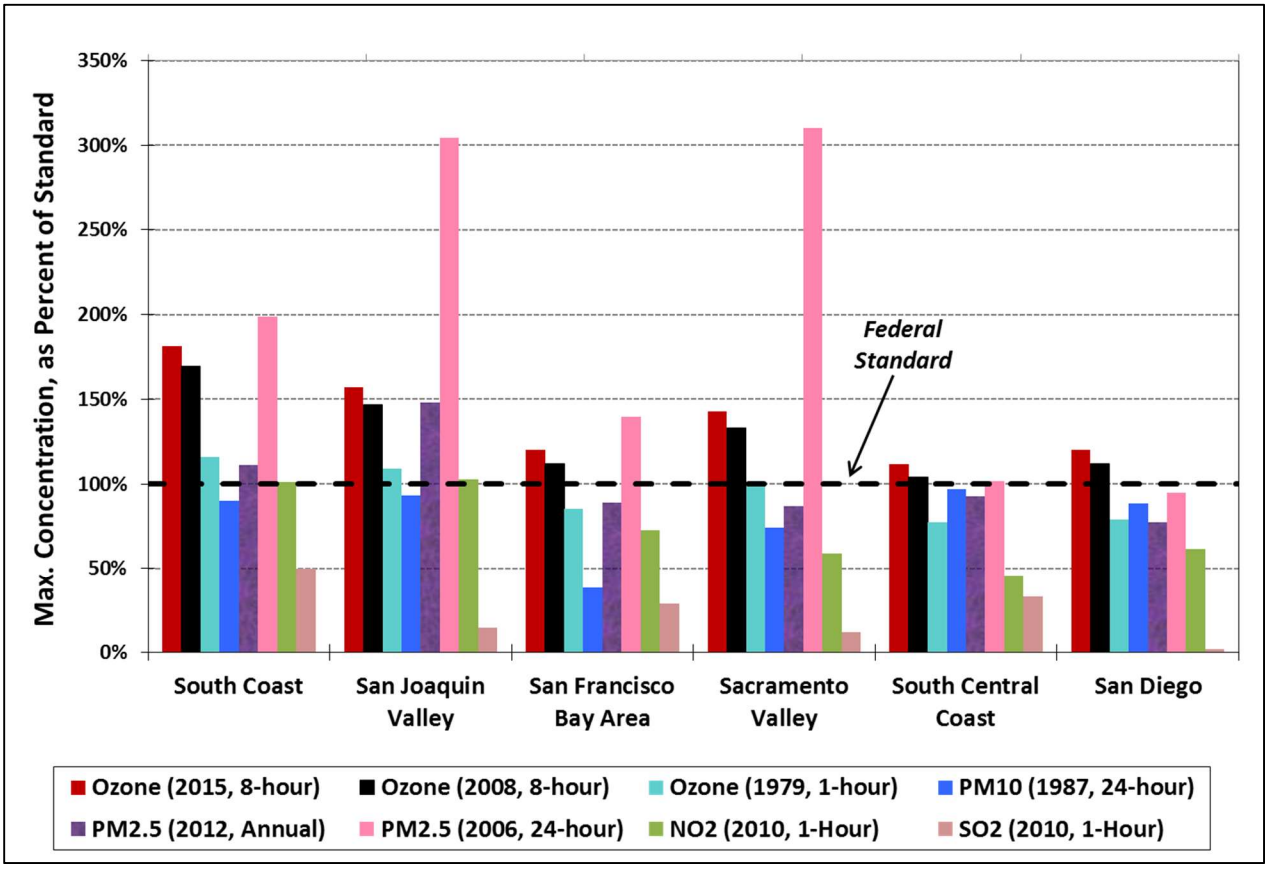

FIGURE 2-8

2015 South Coast Air Basin Air Quality Compared to Other California Air Basins

(maximum pollutant concentrations as percentages of the NAAQS, flagged exceptional events are excluded)

As noted previously, maximum pollutant concentrations do not necessarily indicate NAAQS violations and subsequent attainment/nonattainment designation changes, which is determined by the design value form of the NAAQS. Figures 2-9 and 2-10 show the 2013–2015 3-year design values for the Basin compared to other urban areas in the U.S. and California, respectively. While the 2015 maximum ozone concentrations for all the urban areas shown above in Figures 2-7 and 2-8 are over the 2015 and 2008 ozone NAAQS, 2013-2015 ozone design values in some of these urban areas shown in Figures 2-9 and 2-10 are not in violation of these 8-hour ozone NAAQS. For the revoked 1979 1-hour ozone NAAQS, only the Basin had 1-hour design values over the federal standard for the 2013–2015 period. The design values for annual averaged PM2.5 are over the 2012 annual PM2.5 NAAQS for the Basin, along with Houston, the San Joaquin Valley, and California's South Central Coast. The 24-hour PM2.5 design values are over the 24-hour PM2.5 NAAQS in the Basin and the San Joaquin Valley; no other urban areas shown exceeded that standard. PM10 design values are over the standard in Phoenix and the San Joaquin Valley, although some of these may have been influenced by pending exceptional events. The design values for NO_2, SO_2, and CO (not shown) did not violate the NAAQS for any of the urban areas shown for the 2013–2015 period.

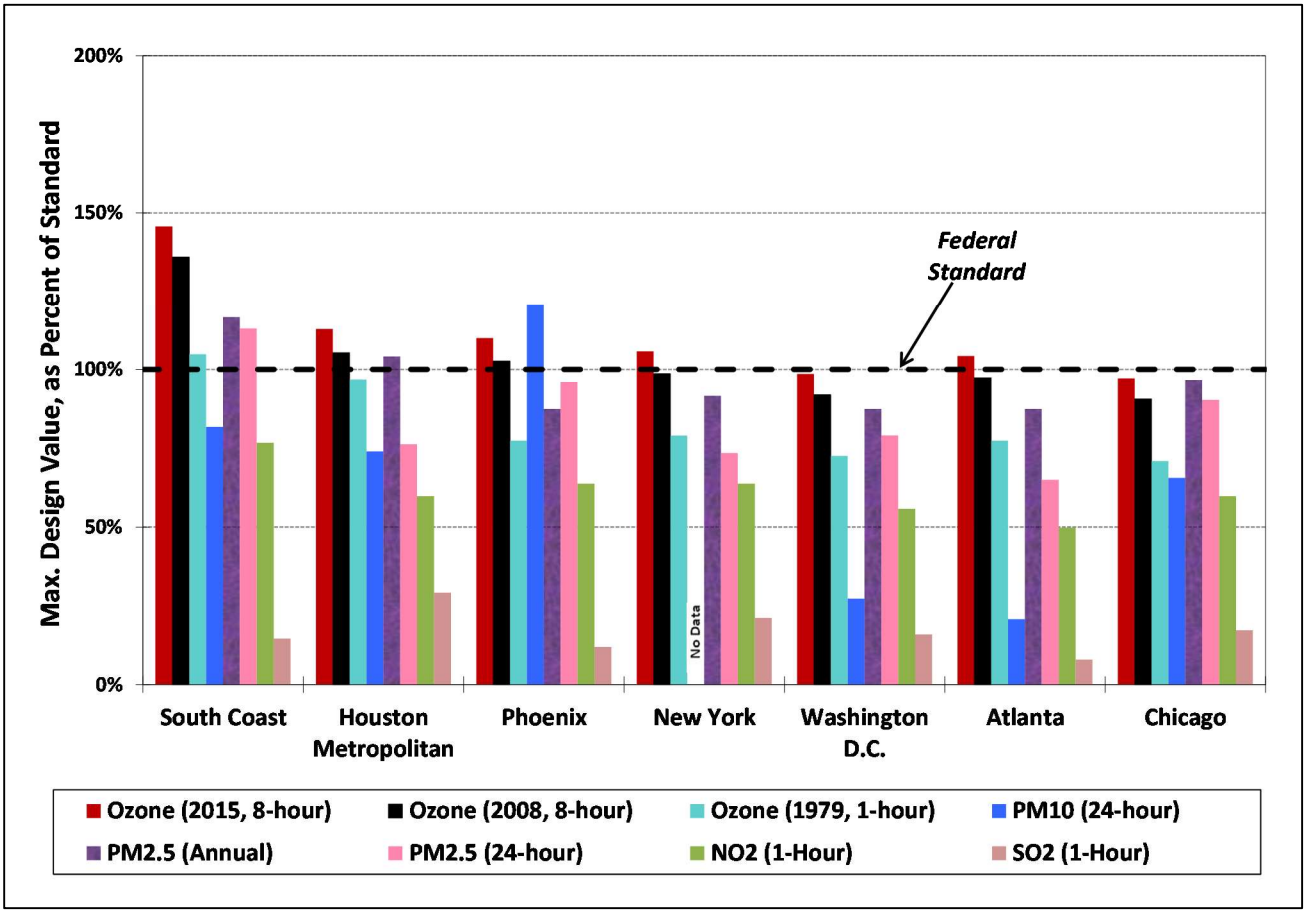

FIGURE 2-9

2015 South Coast Air Basin Air Quality Compared to Other U.S. Urban Areas

(maximum 3-year design value concentrations as percentages of the corresponding NAAQS; flagged exceptional events are excluded)

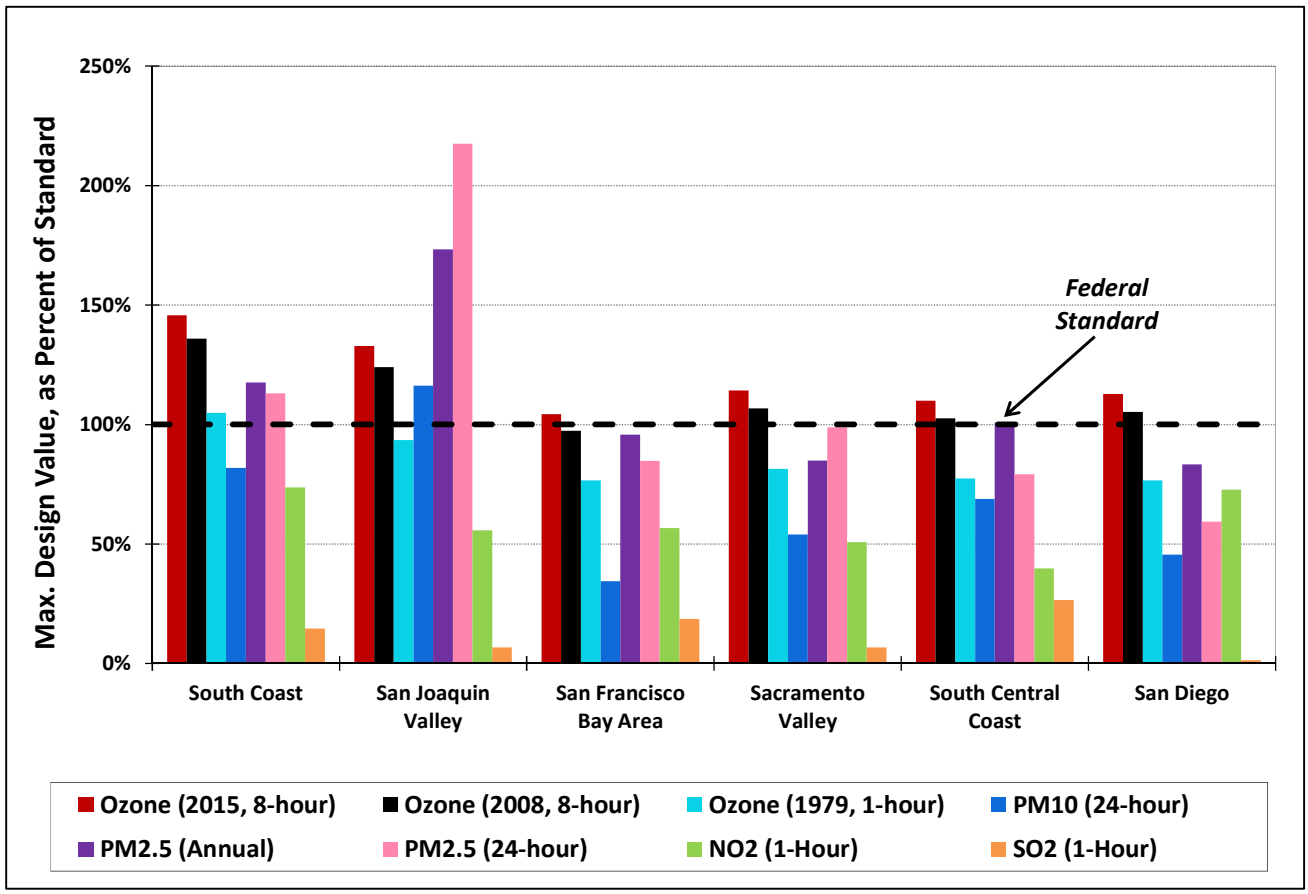

FIGURE 2-10

2015 South Coast Air Basin Air Quality Compared to Other California Air Basins

(maximum 3-year design value concentrations as percentages of the corresponding NAAQS; flagged exceptional events are excluded)

Pollutant-Specific Air Quality Summary

Ozone (O_3)

Current Ozone Air Quality

In 2015, SCAQMD monitored ozone concentrations at 29 locations in the Basin, including two locations in the Coachella Valley portion of the SSAB. The East San Fernando Valley (Burbank) station was closed in 2015, due to loss of the lease space. Installation of a new Burbank monitoring location is in progress. Figure 2-11 maps the locations of the SCAQMD ozone network.

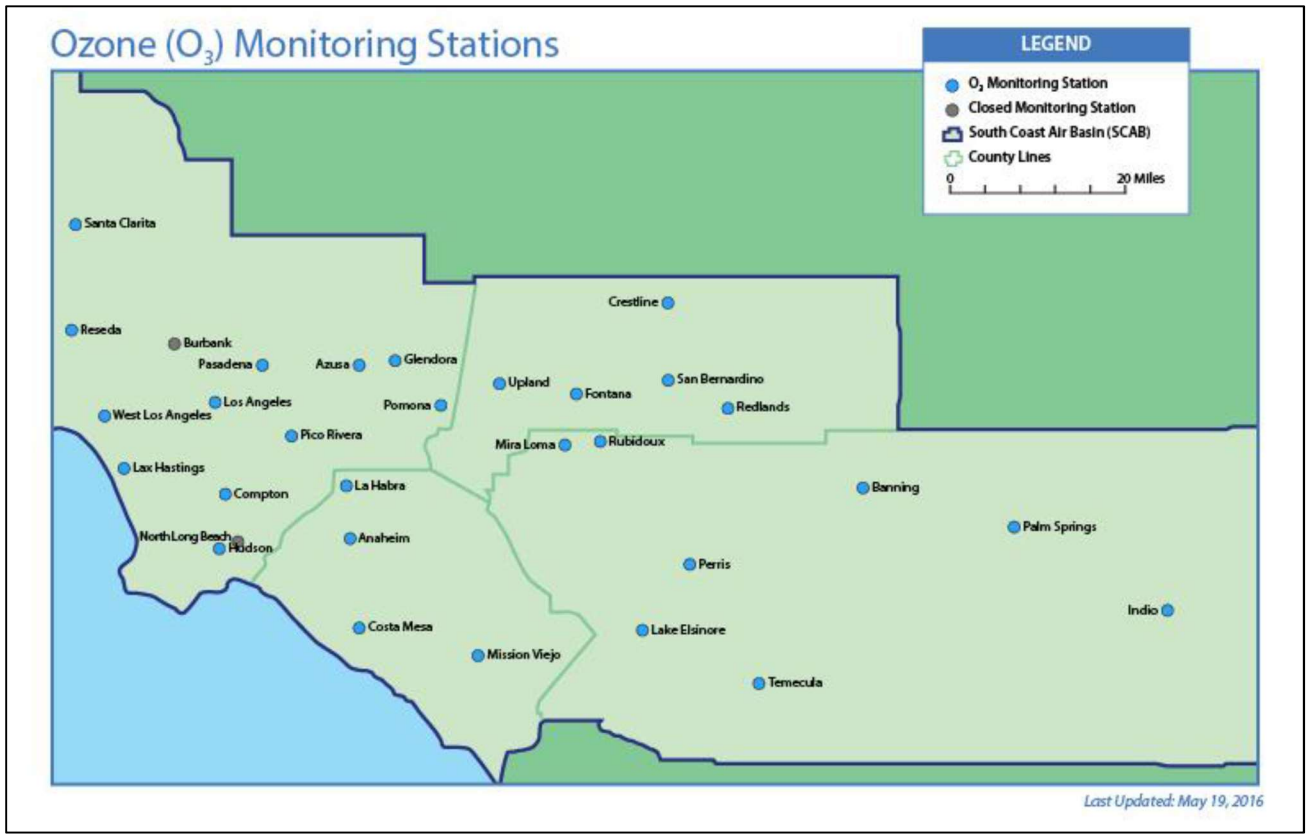

FIGURE 2-11

South Coast Air Quality Management District Ozone Air Monitoring Locations

(Note that ozone stations that were closed at N. Long Beach in 2013 and Burbank in 2014 are shown with grey dots, pending locating new stations; Palm Springs and Indio stations, in Riverside County's Coachella Valley are in the Salton Sea Air Basin; all other stations are in the South Coast Air Basin)

The 2015 Basin maximum ozone concentrations continued to exceed federal standards by wide margins, although the ozone trends have shown continuing improvements through the years. All four counties in the Basin, as well as the Coachella Valley portion of the SSAB, exceeded the level of the new 2015 (0.070 ppm) and the former 2008 (0.075 ppm) and 1997 (0.08 ppm) 8-hour ozone NAAQS in 2015. While not all stations had days exceeding the previous 8-hour federal standards, all SCAQMD monitoring stations except the one in Long Beach exceeded the 2015 federal standard.

Basin-wide, a total of 113 days exceeded the 2015 ozone federal standard (81 days over the 2008 standard and 47 days over the 1997 standard). The State 8-hour ozone standard was exceeded on 115 days. The highest number of days in 2015 over the 2015, 2008 and 1997 8-hour federal ozone standards (86, 61, and 30 days, respectively) occurred in the Central San Bernardino Mountains. The 2015 maximum 8-hour average ozone concentration of 0.127 ppm was also measured at this location.

When comparing to the design value form of the federal standard, all four of the Basin's counties were above the 2015 8-hour ozone NAAQS for the 2013–2015 design values. Three of the Basin's four counties (except Orange County) were above both the 2008 and 1997 8-hour ozone NAAQS for 2013–2015 design values. The Basin's highest 2013–2015 8-hour ozone design value (0.102 ppm, measured in the Central San Bernardino Mountains) was 146 percent of the 2015 8-hour ozone NAAQS (136 percent of the 2008 NAAQS and 121 percent of the 1997 NAAQS). Table 2-3 summarizes the number of days exceeding current and former federal and State 1-hour and 8-hour ozone standard levels by county in the Basin and the Coachella Valley in 2015. Table 2-4 shows the 2015 maximum 8-hour ozone concentrations and 3-year design values by air basin and county, for comparison to the current and former 8-hour ozone NAAQS, along with the State designation value, for comparison to the State ozone standards.

TABLE 2-3

2015 Number of Days Exceeding Current and Former Ozone Standards at the Peak Station by County and Basin

Basin/County	2015 # Days > New (2015) 8-Hour O_3 NAAQS (0.070 ppm)	Area of Maximum Exceedances of the 2015 Ozone NAAQS	2015 # Days > Former (2008) 8-Hour O_3 NAAQS (0.075 ppm)	2015 # Days > Former (1997) 8-Hour O_3 NAAQS (0.08 ppm)	2015 # Days > Former (1979) 1-Hour O_3 NAAQS (0.12 ppm)	2015 # Days > Current 8-Hour O_3 State Standard (0.07 ppm)	2015 # Days > Current 1-Hour O_3 State Standard (0.09 ppm)
South Coast Air Basin							
Los Angeles	74	Santa Clarita Valley	54	25	4	80	52
Orange	12	Saddleback Valley	4	0	0	14	5
Riverside	76	Metropolitan Riverside County	51	29	2	81	43
San Bernardino	**102**	**Central San Bernardino Mountains**	**75**	**42**	**8**	**102**	**65**
Salton Sea Air Basin							
Riverside	58	Coachella Valley (Palm Springs)	30	5	0	54	3

Bold text denotes the peak value

Note: The 2015 8-hour ozone NAAQS became effective on December 28, 2015; the 2008 ozone standard was still in effect during the 2014 and 2015 ozone seasons

TABLE 2-4

2015 Maximum 8-Hour Average Ozone Concentrations and 2013–2015 Design Values by Basin and County

Basin/County	2015 Maximum 8-Hour O_3 Average (ppm)	2013–2015 8-Hour O_3 Design Value (ppm)	Percent of New (2015) O_3 NAAQS (0.070 ppm)	Percent of Former (2008) O_3 NAAQS (0.075 ppm)	Percent of Former (1997) O_3 NAAQS (0.08 ppm)	Area of Design Value Maximum	2013–2015 8-Hour O_3 State Designation Value# (ppm)	Percent of State O_3 Standard (0.070 ppm)
South Coast Air Basin								
Los Angeles	0.108	0.094	134	125	112	Santa Clarita Valley	0.109	156
Orange	0.088	0.075	107	100*	89	Saddleback Valley	0.082	117
Riverside	0.105	0.093	133	124	111	Metropolitan Riverside County	0.106	151
San Bernardino	**0.127**	**0.102**	**146**	**136**	**121**	**Central San Bernardino Mountains**	**0.114**	**163**
Salton Sea Air Basin								
Riverside	0.092	0.088	126	117	105	Coachella Valley (Palm Springs)	0.093	133

Bold text denotes the peak value

* Note that 100 percent of the NAAQS is not violating the federal standard

\# The *State 8-Hour Designation Value* is the highest State 8-hour ozone average, rounded to three decimal places, during the last 3 years (State designation value source: https://www.arb.ca.gov/adam/select8/sc8start.php)

All monitored locations measured maximum 1-hour average ozone concentrations well below the Stage 1 episode level (0.20 ppm, 1-hour) and below the ozone health advisory level (0.15 ppm, 1-hour) in 2015. Except for one day in 2003 (at a special-purpose monitor in the San Bernardino Mountains), the Stage 1 ozone episode level has not been exceeded in the Basin since 1998. There have been no exceedances of the Stage 2 episode level (1-hour average ozone ≥ 0.35 ppm) since 1988 and the Stage 3 episode level (1-hour average ozone ≥ to 0.50 ppm) has not been exceeded since 1974.

The Basin exceeded the level of the former (1979) 1-hour federal ozone standard (0.12 ppm) on 10 days in 2015, with exceedances in Los Angeles, Riverside and San Bernardino Counties; Orange County did not exceed the 1979 standard. The State 1-hour standard (0.09 ppm) was exceeded on 71 days in the Basin. The most exceedances of the former 1-hour standard in 2015 (6 days) occurred in the Central San Bernardino Mountains (Crestline-Lake Gregory air monitoring station). The 2015 peak 1-hour ozone concentration in the Basin was 0.144 ppm, also measured in the Central San Bernardino Mountains area. This value was slightly higher than the 2014 peak of 0.141 ppm, which was the Basin's lowest annual peak 1-hour concentration since ozone measurements started in the mid-1950s.

The calculated peak 2013-2015 1-hour ozone design value[22] for the 2013-2015 period (0.130 ppm in the Central San Bernardino Mountains) was 104 percent of the former 1-hour NAAQS. Table 2-5 shows the 2015 maximum 1-hour ozone concentrations and calculated design value by air basin and county for comparison to the revoked NAAQS, along with the 1-hour State designation value for comparison State 1-hour ozone standard.

TABLE 2-5

2015 Maximum 1-Hour Average Ozone Concentrations and 2012–2014 Design Values by Basin and County

Basin/County	2015 Maximum 1-Hour O_3 Average (ppm)	2013–2015 1-Hour O_3 Design Value (ppm)	Percent of Former (1979) O_3 NAAQS (0.12 ppm)	Area of Design Value Max	2013–2015 1-Hour O_3 State Designation Value[#] (ppm)	Percent of State O_3 Standard (0.09 ppm)
South Coast Air Basin						
Los Angeles	0.136	0.127	102	East San Gabriel Valley	**0.13**	**144**
Orange	0.103	0.102	82	North Orange County & Saddleback Valley	0.10	111
Riverside	0.132	0.121	97	Metropolitan Riverside County	**0.13**	**144**
San Bernardino	**0.144**	**0.130**	**104**	**Central San Bernardino Mountains**	**0.13**	**144**
Salton Sea Air Basin						
Riverside	0.102	0.104	83	Coachella Valley(Palm Springs)	0.11	122

Bold text denotes the peak value

* Note that 100 percent of the NAAQS is not violating the federal standard

\# The *State 1-Hour Designation Value* is the highest hourly ozone measurement during the last 3 years, rounded to two decimal places. In practice, the designation value is the highest measured concentration in the 3 year period that remains, after excluding measurements identified as affected by highly irregular or infrequent events (State designation value source: https://www.arb.ca.gov/adam/select8/sc8start.php)

[22] The former 1979 1-hour ozone NAAQS allows for one exceedance per year on average when averaged over 3 years. The calculated design value is the 4th high value over a 3-year period, allowing the design value to be expressed in terms of a concentration. When shown in parts-per-million to 3 decimal places the design value is compared to 0.125 ppm, which would exceed the NAAQS.

Tables A-2 through A-10 in the attachment show the number of days exceeding the federal 8-hour and 1-hour ozone standards, as well as the annual fourth high 8-hour average, maximum 1-hour, and design value concentrations, at all routine SCAQMD air quality monitoring stations, for the period 1995–2015. Please refer to Appendix II from the 2003 AQMP for the 1976–1989 prior-year statistics and to Appendix II from the 2007 AQMP for 1990–2005 data.

Ozone Spatial Variation

The number of days exceeding the ozone standards in the Basin varies widely by area. Figures 2-12 through 2-14 map the number of days in 2015 exceeding the 2015 8-hour ozone NAAQS and the former 2008 and 1997 8-hour ozone NAAQS in different areas of the Basin. The number of exceedances of the federal 8-hour ozone standards was lowest in the coastal areas, due in large part to the prevailing sea breeze which transports emissions inland before high ozone concentrations are reached. The concentrations increased towards the Riverside County and San Bernardino County valleys and adjacent mountain areas, as well as in the area around Santa Clarita in Los Angeles County. The Central San Bernardino Mountains recorded the greatest number of exceedances of the current and former 8-hour federal ozone NAAQS (86 days for the 2015 ozone NAAQS, 61 days for the 2008 NAAQS, and 30 days for the 1997 NAAQS), as well as the 8-hour State ozone standard (86 days), in 2015.

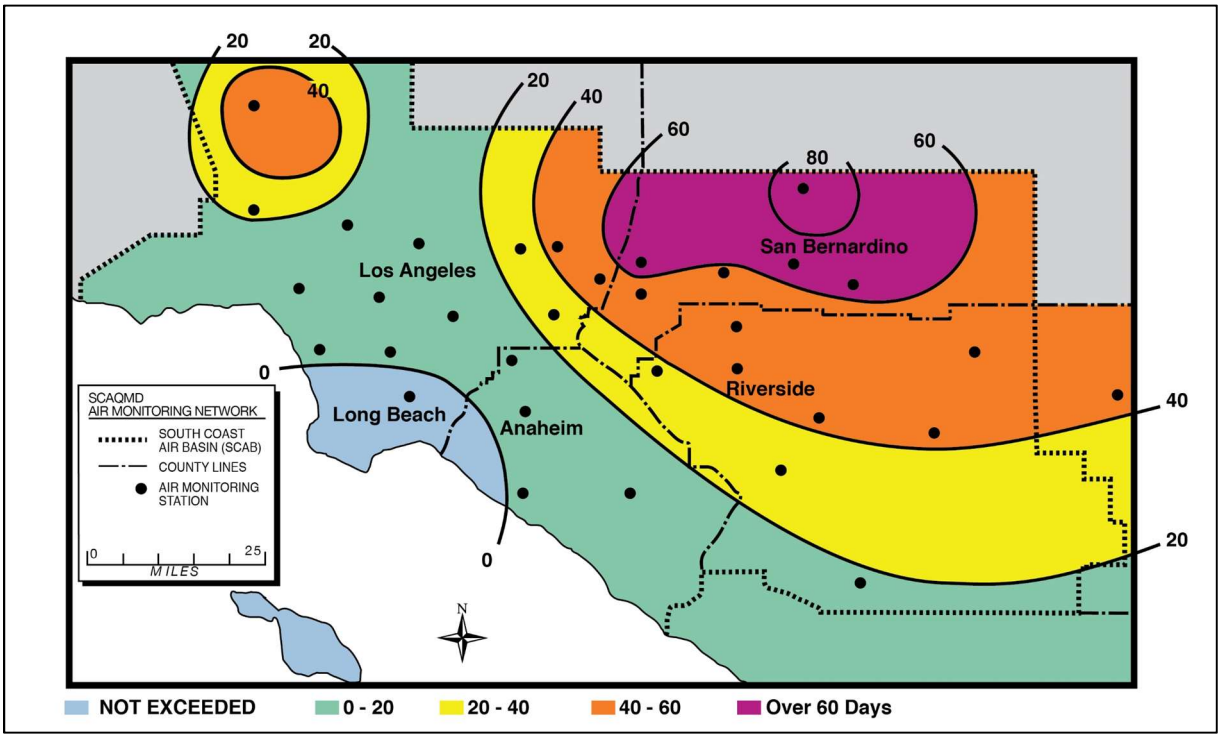

FIGURE 2-12

Number of Days in 2015 Exceeding the 2015 8-Hour Ozone Federal Standard

(8-hour average ozone > 0.070 ppm)

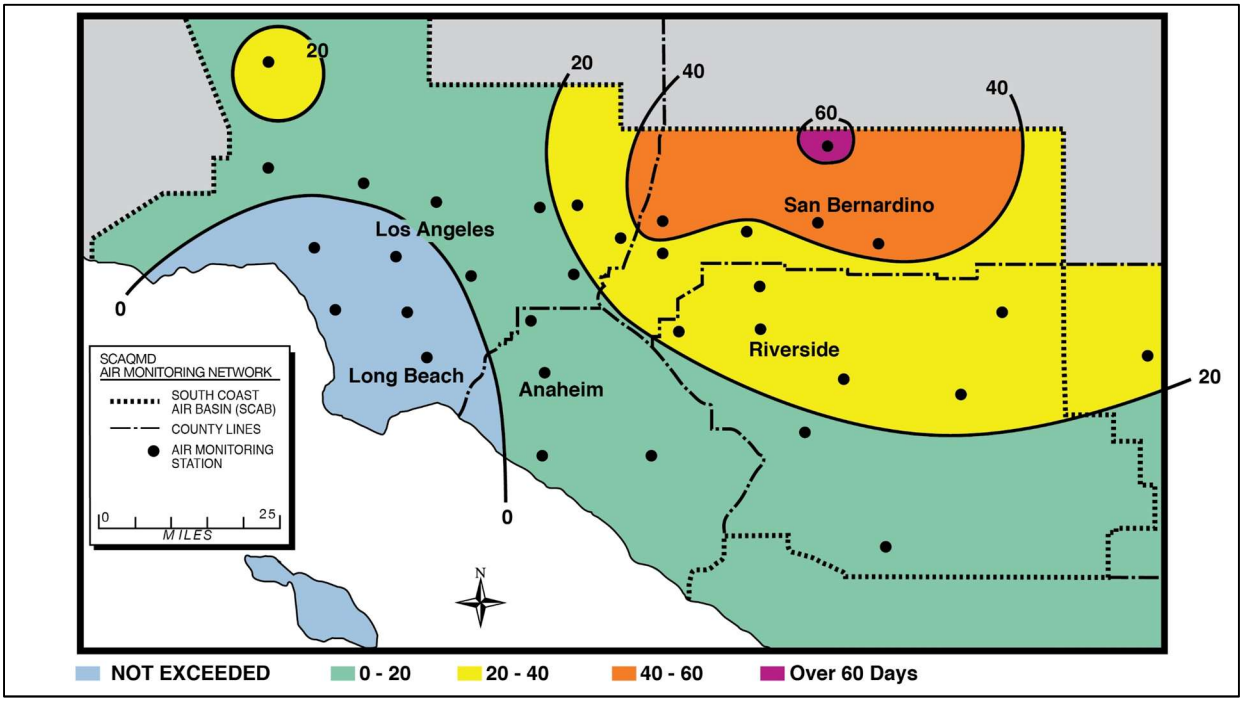

FIGURE 2-13

Number of Days in 2015 Exceeding the Revised 2008 8-Hour Ozone Federal Standard

(8-hour average ozone > 0.075 ppm)

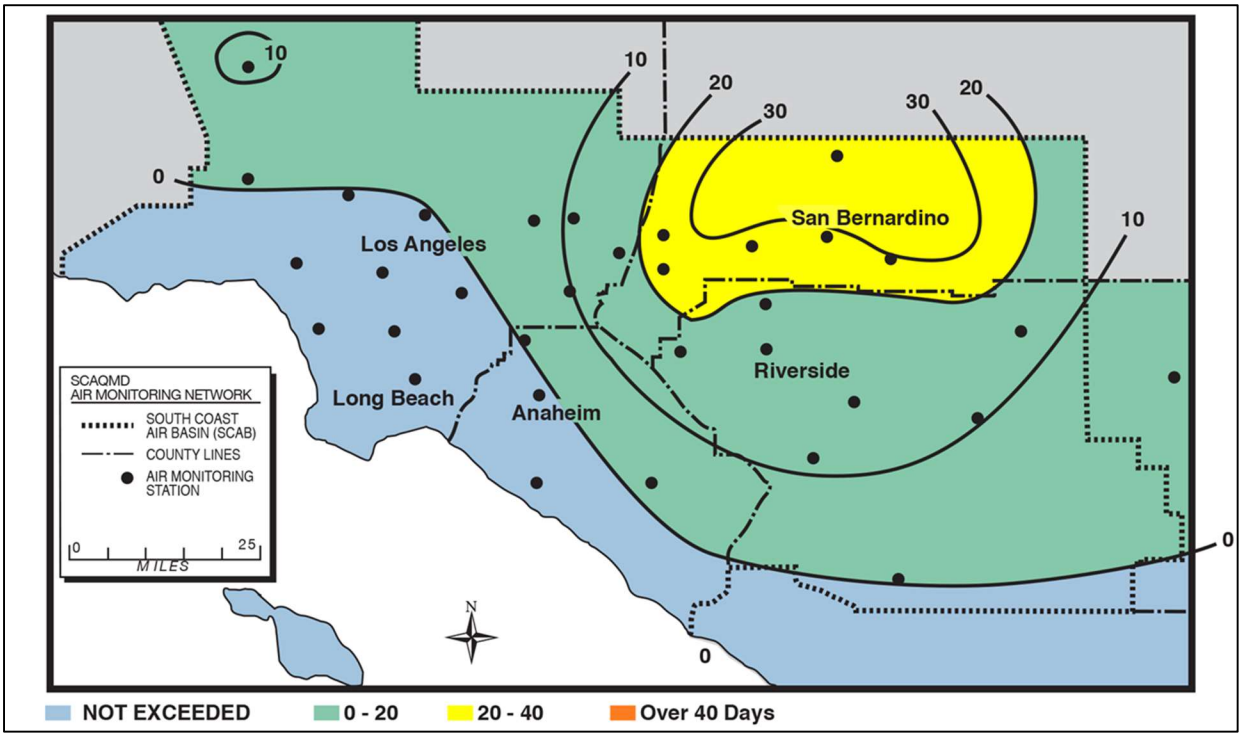

FIGURE 2-14

Number of Days in 2015 Exceeding the Revoked 1997 8-Hour Ozone Federal Standard

(8-hour average ozone > 0.08 ppm)

Figure 2-15 maps the number of days in 2015 exceeding the 1979 1-hour ozone NAAQS in different areas of the Basin. The former 1-hour federal standard was not exceeded in a large portion of the Basin. It was exceeded the most (6 days) in the inland Central San Bernardino Valley (San Bernardino monitoring station). Exceedances of the 1-hour ozone standard extended to all areas monitored in San Bernardino County and in Metropolitan Riverside County, as well as in Santa Clarita and the eastern San Gabriel Valley in Los Angeles County. The Coachella Valley did not exceed the former 1-hour ozone standard in 2015.

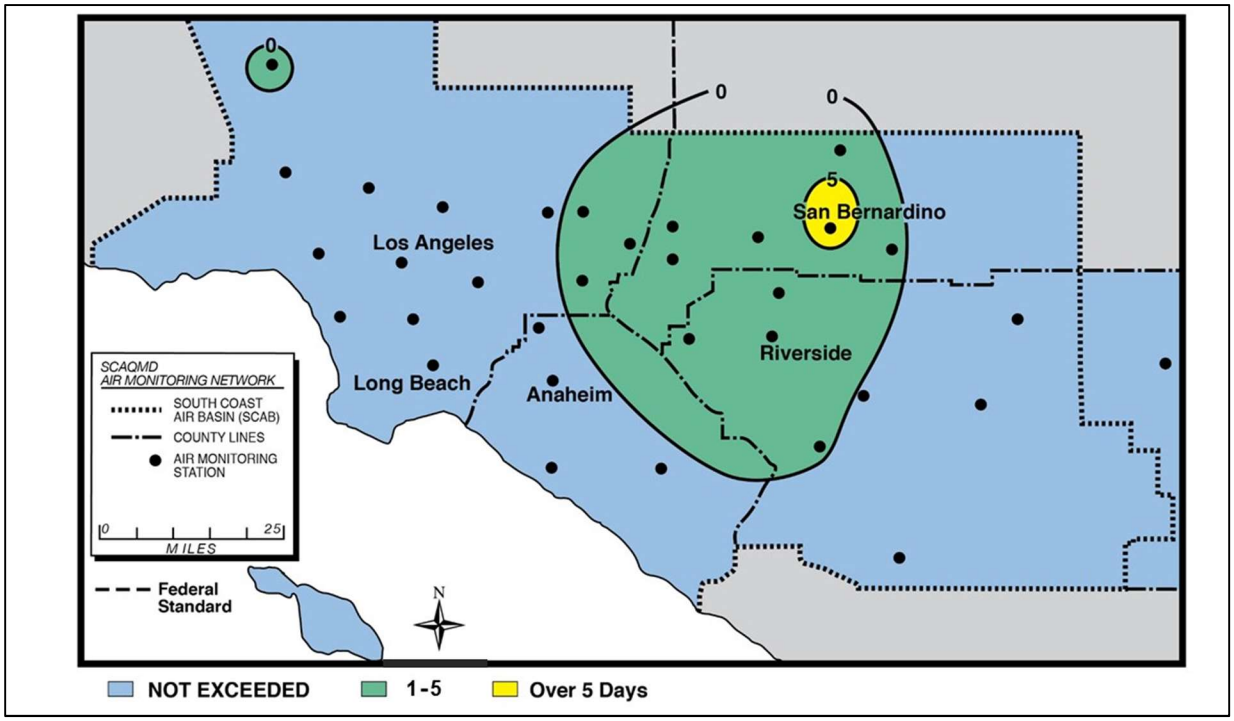

FIGURE 2-15

Number of Days in 2015 Exceeding the Revoked 1979 1-Hour Federal Ozone Standard

(1-hour average ozone > 0.12 ppm; green shaded area indicates areas with exceedances)

Ozone Trends

The rate of ozone air quality improvement has been dramatic since the concerted effort to manage air quality in the Basin began decades ago. Significant improvements were seen throughout the 1990s. While the rate of improvement in ozone has slowed somewhat since the year 2000, the overall trend, as well as the expectation for the future, is continuing gradual improvement. Figure 2-16 shows the Basin-wide trend (1990–2015) of number of days exceeding the 2015, 2008 and 1997 8-hour ozone standards and the former (1979) 1-hour ozone standard. Figure 2-17 shows the trend (1990–2015) of the 8-hour and 1-hour ozone 3-year design values for the Basin.

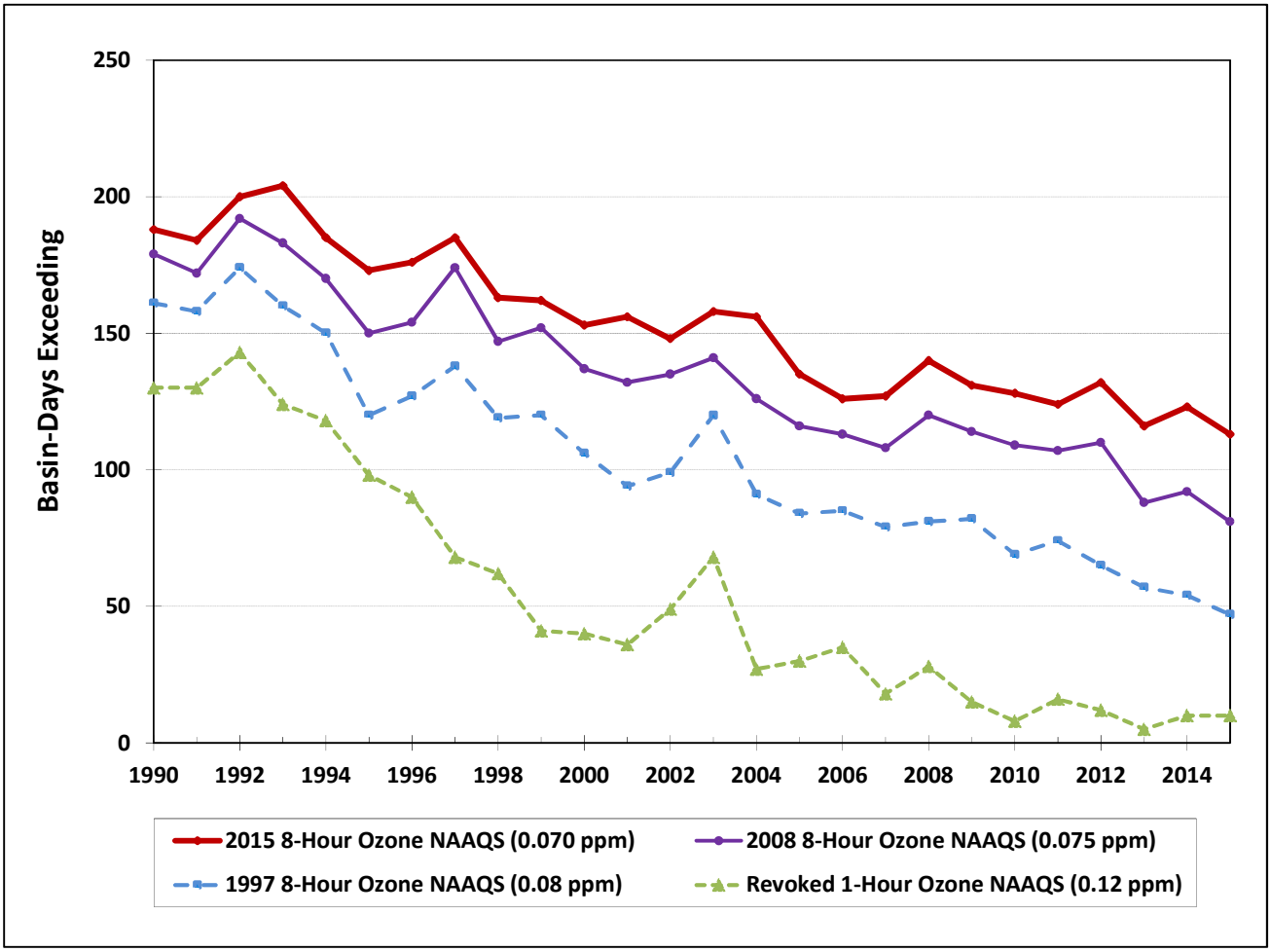

FIGURE 2-16

Trend of Annual Basin Days Exceeding 8-Hour and 1-hour Ozone NAAQS

(South Coast Air Basin; by year, 1990–2015)

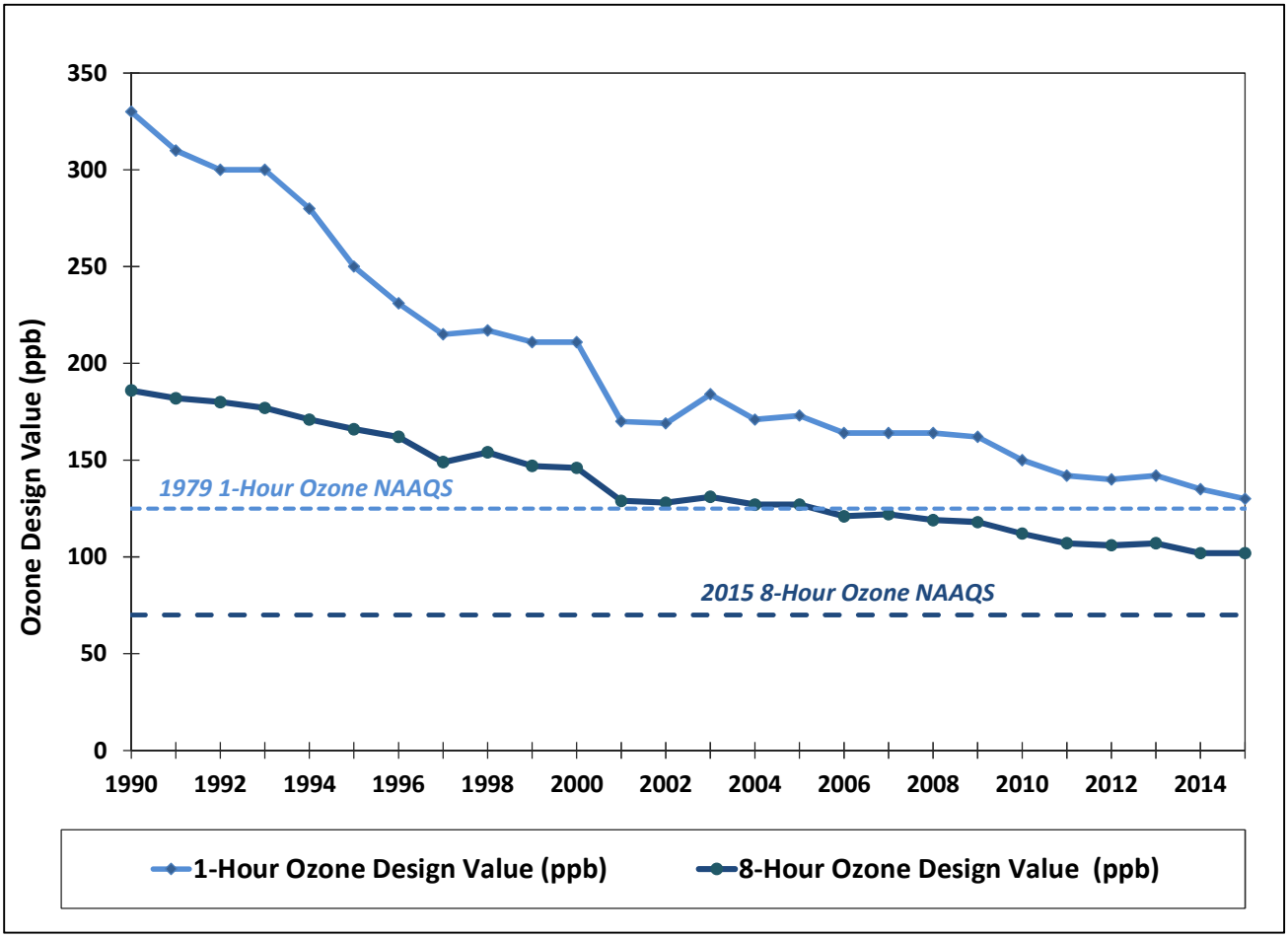

FIGURE 2-17
South Coast Air Basin Ozone Design Value Trends, 1990–2015

Ozone Temporal Variation

Because photochemical reactions require sunlight to proceed, ozone formation is favored by strong solar radiation. Solar radiation is more intense and of longer duration in summer than in winter and summertime temperature inversions are often strong and persistent, trapping pollutants in a shallow mixed layer. This causes ozone concentrations to be higher in summer than in winter. Peak ozone concentrations generally occur near the middle of the day during the period of May through September.

Figure 2-18 shows the number of days per month that one or more monitoring stations exceeded the 2008 federal 8-hour ozone standard level (0.075 ppm) for the period 1995-2015. May through October is typically considered to be the ozone "smog season" in Southern California and most exceedances occur in July and August, with most days in those months exceeding the standard. Up until the late 1980's it would have been common to have days exceeding the 2008 federal ozone standard for most of the year, had that standard been in place at that time. By the late 1990's there were very few exceedances in the months of November through February. There have been relatively few exceedances of the 2008 ozone NAAQS in March or October in more recent years. The frequency of exceedances in the spring (April–June) has continued to decline in recent years. A similar analysis based on the new 2015 ozone NAAQS would again show exceedances in more months for 2015, with exceedances starting in late March and ending in early November of that year.

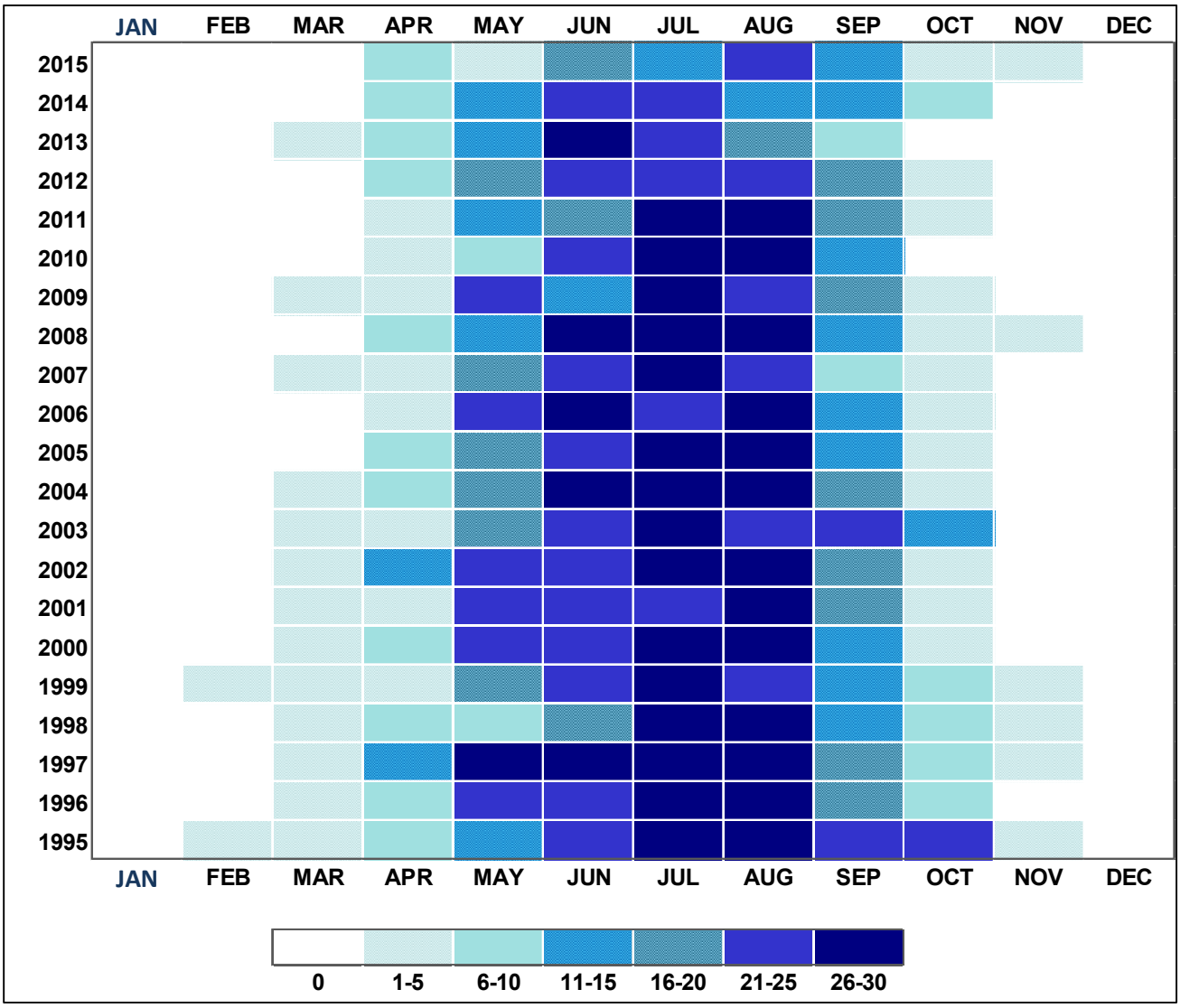

FIGURE 2-18

Monthly Distribution of Basin Days Exceeding the 2008 8-hour Ozone NAAQS

(South Coast Air Basin, for Years 1995–2015)

Since the mid-1970s, it has been documented that ozone concentrations in the Basin are more often higher on weekends than on weekdays, in spite of the fact that ozone precursors are lower on weekends than on weekdays. Similar effects have been observed in some other metropolitan areas in the nation such as San Francisco, Washington D.C., Philadelphia, and New York. This "weekend effect" was quite pronounced in previous years in the Basin. CARB has sponsored several research projects to study the causes of elevated ozone levels on weekends in the Basin. Changes in daily traffic patterns that impact the relative quantity and temporal loading of precursor VOC and NOx emissions have been suggested as strongly contributing to these observations. Carryover of matured precursors from weekdays to weekends is also suggested as a contributing factor. It is generally expected that this difference will decrease as ozone precursor emissions continue to decline.

Figure 2-19 shows the number of station-days[23] that the Basin exceeded the 2015 8-hour ozone federal standard for each day of the week for the 2013–2015 period. In that time period, the weekend days had more exceedances than the weekdays, with Sundays having slightly more than Saturdays. Averaged ozone concentrations by day-of-week (not shown) also indicate a similar pattern that seen in the number of exceedances, with weekends higher than weekdays.

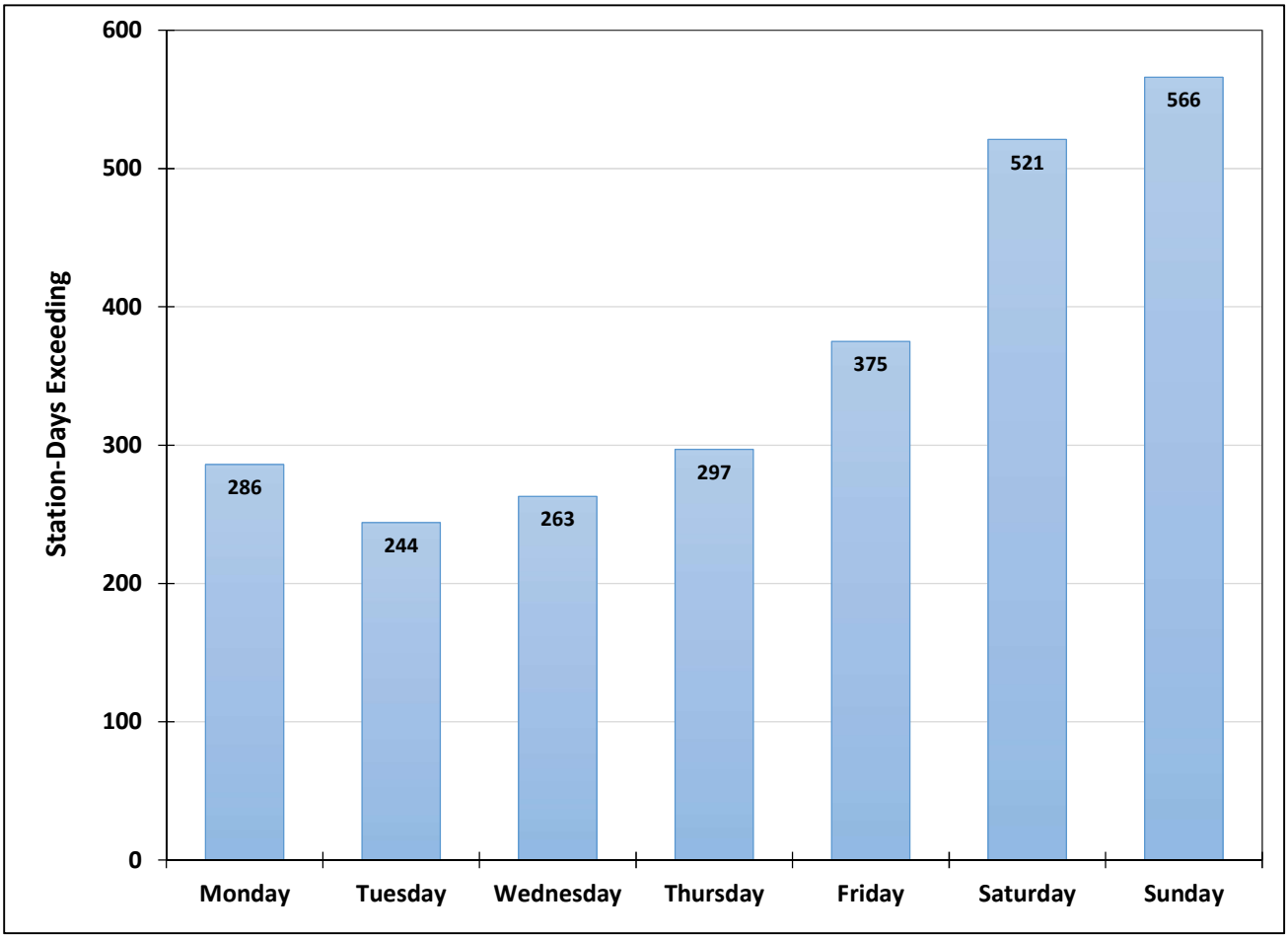

FIGURE 2-19

8-Hour Ozone Day-of-Week Variation, 2013–2015

(total station-days exceeding the 2015 8-hour ozone NAAQS over the 3-year period by day of week)

Because time and sunlight are required for precursor organic gases and nitrogen oxides to react to form ozone, the peak ozone concentrations usually occur between the early afternoon and early evening hours. By this time, the prevailing sea breeze has moved the polluted air mass miles inland from many of the major sources of precursor emissions. Ozone concentrations in the Basin are typically low during early morning hours, increasing rapidly after sunrise and peaking in the afternoon. Peak concentrations generally occur earlier in the day for coastal areas and later for locations further downwind. In the mountain and desert areas, ozone

[23] The term *station-days* represents the total number of days the standard was exceeded at individual monitoring stations summed for all stations in the Basin.

can remain elevated well into the night due to the lack of NOx emissions in those areas to help scavenge the ozone when the photochemistry ceases after dark.

Figure 2-20 illustrates the average of the smog season (May–October) 1-hour ozone concentrations for each hour of the day (shown in Pacific Standard Time), by station, for the years 2013–2015. The average peak occurs near 1 p.m. at the coastal stations (LAX) and most stations in the Basin reach their peak by 2 p.m. The far inland stations at Central San Bernardino Valley (San Bernardino) and Central San Bernardino Mountains (Crestline, where the highest concentrations have been measured in recent years) peak near 3 or 4 p.m., but the ozone at Crestline decreases at a slower rate in the evening, leading to higher 8-hour ozone values. On the worst smog days, this station can remain relatively high through the night.

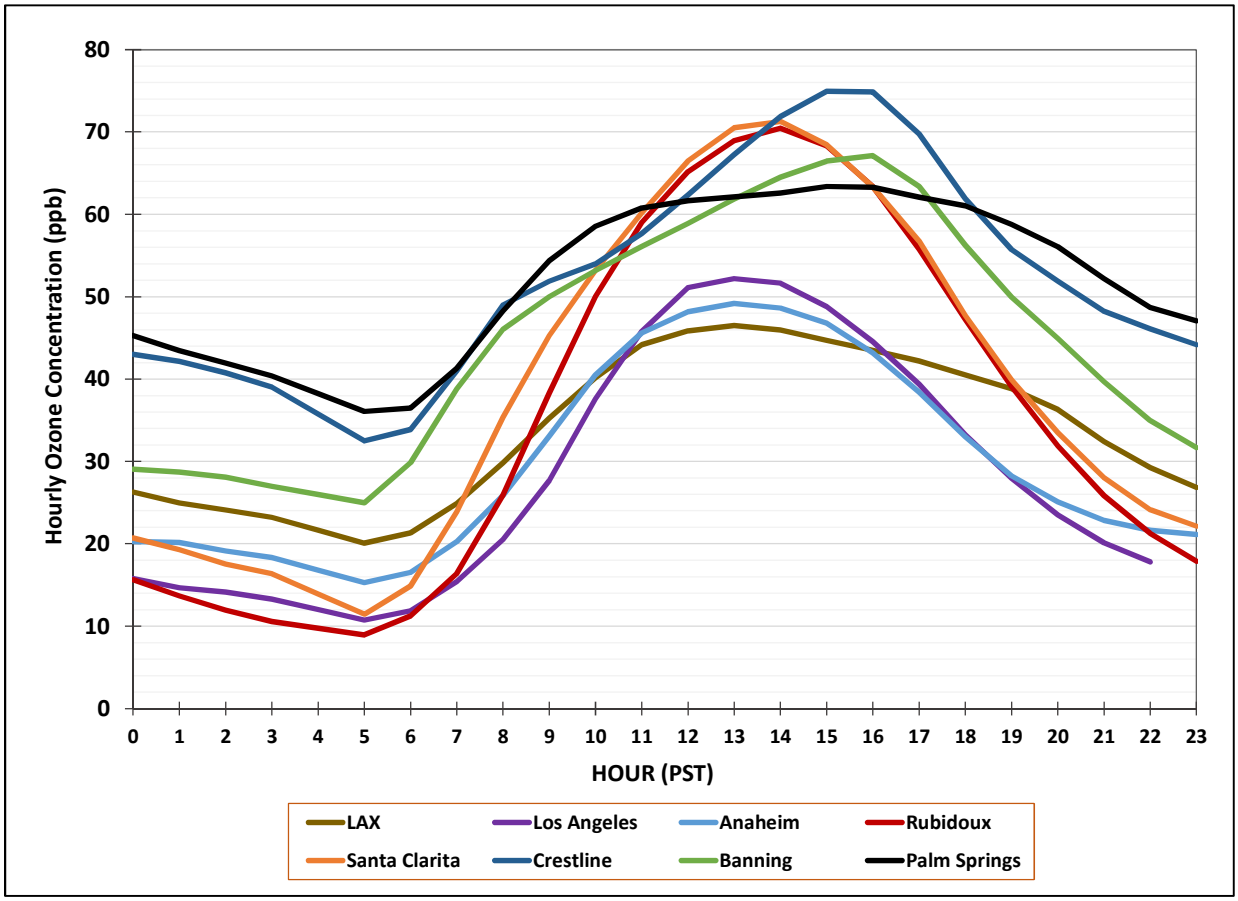

FIGURE 2-20

Diurnal Variation of Basin May–October 2013–2015 Averaged Hourly Ozone Concentrations

Particulate Matter (PM)

PM10 and PM2.5 concentrations are monitored throughout the District by samples collected on quartz or Teflon filters in samplers with size selective inlets. These are known as the Federal Reference Methods (FRMs). Some stations also have continuous PM10 and/or PM2.5 measurements, using either Beta Attenuation Monitor (BAM) or Tapered Element Oscillating Microbalance (TEOM) instrumentation. This data is available in real-time and is used for air quality forecasting and public reporting of current conditions. Where the continuous BAM or TEOM PM10 monitors have been certified by U.S. EPA to be Federal Equivalent Methods (FEM), the continuous PM10 data is averaged for the 24-hour period (midnight to midnight) and used for comparison to the standards on days when a valid FRM filter measurement was not collected.

For PM2.5, there can be significant differences between the FEM and FRM results that have been recognized by national assessments of the technologies. SCAQMD measures FRM PM2.5 on a daily basis at the critical stations in the Basin and does not use the continuous PM2.5 data to compare to the NAAQS for attainment purposes. This issue was further addressed in U.S. EPA's 2012 PM2.5 NAAQS revision, which allowed air districts to annually petition U.S. EPA for a waiver precluding the continuous measurements for use in NAAQS attainment consideration, when the continuous PM2.5 measurements do not meet performance requirements for equivalency to FRM measurements at specific locations. The continuous FEM PM2.5 monitors in the Basin do not meet the U.S. EPA equivalency requirements and are not used for NAAQS attainment comparison.[24]

PM2.5 Air Quality

SCAQMD began regular monitoring of PM2.5 in 1999 following the U.S. EPA's adoption of the first national PM2.5 standards in 1997. Figure 2-21 shows the PM2.5 monitoring sites within the SCAQMD jurisdiction, including the Coachella Valley, in 2015. PM2.5 concentrations were measured at 26 locations throughout the SCAQMD jurisdiction in 2015, including two stations in the SSAB in the Coachella Valley and two near-road sites. Two stations (Burbank and Ontario Fire Station) were closed during 2014. Nineteen stations had filter-based FRM monitoring and eight of these FRMs (including the two near-road sites) sampled daily to improve temporal coverage with the FRM measurements beyond the required 1-in-3 day sampling schedule. One station, in the Big Bear Lake area of the Eastern San Bernardino Mountains, has a 24-hour sample collected every six days. Fourteen stations, including one near-road site, employed continuous PM2.5 BAM monitors. As discussed above, the continuous PM2.5 monitors in the Basin are used for forecasting, real-time air quality alerts, and for evaluating diurnal patterns, but only FRM data is used for comparison to the NAAQS.

[24] The continuous PM2.5 monitors deployed by SCAQMD are FEM-designated Beta Attenuation Monitor (BAM) instruments, but in use they do not meet the correlation and bias requirements set by U.S. EPA for equivalency to FRM filter measurements. The U.S. EPA waiver from NAAQS comparison for the continuous samplers is re-evaluated annually as part of the SCAQMD Annual Air Quality Monitoring Network Plan. [http://www.aqmd.gov/home/library/clean-air-plans/monitoring-network-plan]

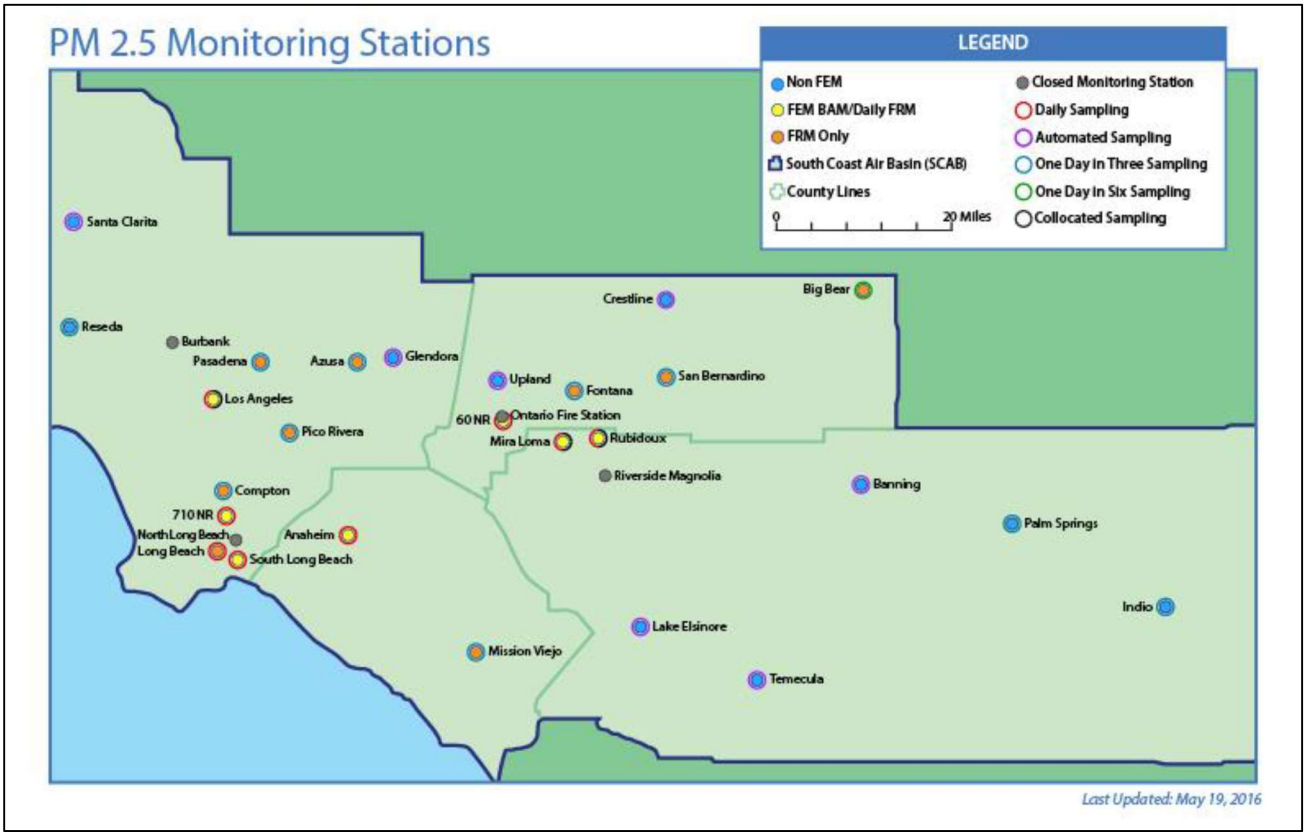

FIGURE 2-21

South Coast Air Quality Management District PM2.5 Air Monitoring Locations

(Note that while the station at N. Long Beach was closed in 2013, FRM PM2.5 monitoring was allowed to continue; some continuous monitors are not certified as FEM monitors, shown as Non-FEM; Reseda and Banning stations also have FRM measurements; Palm Springs and Indio stations are FRM samplers only and are in the Salton Sea Air Basin – Coachella Valley; the Route 710 and Route 60 Near Road PM2.5 monitoring started on January 1, 2015)

The 2015 FRM 24-hour PM2.5 concentrations are summarized in Table 2-6. The near-road data was not included in this analysis due to insufficient data to allow for calculation of design values (see the Near-Road PM2.5 section below for further information on these measurements). PM2.5 concentrations were higher in the inland valley areas of metropolitan Riverside County and San Bernardino County. The Basin 2015 PM2.5 maximum 24-hour average concentration of 70.3 µg/m^3 was measured in the East San Gabriel Valley area at the Azusa air monitoring station on July 5, associated with fireworks on Independence Day. The next highest 24-hour PM2.5 concentration in 2015 was 56.6 µg/m^3, measured in the Metropolitan Riverside County area at the Mira Loma air monitoring station. There is no State 24-hour PM2.5 standard.

Although maximum 24-hour concentrations exceed the standard, the 98th percentile form of the 2013–2015 design value only violated the standard at two Basin locations in Metropolitan Riverside County, at the Mira Loma and Rubidoux air monitoring stations, with design values of 41 µg/m^3 and 36 µg/m^3, respectively (117 percent and 103 percent of the 24-hour PM2.5 NAAQS). Mira Loma had been the only station with a design value violating the 24-hour PM2.5 NAAQS since the 2008–2010 design value period.

The higher PM2.5 concentrations in the Basin, particularly in the inland valley areas, are mainly due to the secondary formation of smaller particulates resulting from mobile, stationary and area source emissions of precursor gases (i.e., NOx, SOx, NH_3, and VOC) that are converted to PM in the atmosphere. Most of the 24-

hour PM2.5 exceedances in the Basin typically occur in the late fall and winter months (shown below in Figure 2-25). The lack of storm events and rainfall in the last four years has contributed to an increase in the PM2.5 concentrations and the number of days over the standard, as the precursor and particulates are not dispersed or washed out periodically.

TABLE 2-6

2015 Maximum 24-hour Average PM2.5 Concentrations and 2013–2015 Design Values by Basin and County[#]

Basin/County	2015 Maximum 24-Hour PM2.5 Average ($\mu g/m^3$)	2013–2015 24-Hour PM2.5 Design Value ($\mu g/m^3$)	Percent of 2006 PM2.5 NAAQS (35 $\mu g/m^3$)	Area of Design Value Max
South Coast Air Basin				
Los Angeles	**70.3**[**]	34	97	Central Los Angeles and South San Gabriel Valley
Orange	45.8	28	80	Central Orange County
Riverside	56.6	**41**	**117**	**Metropolitan Riverside County**
San Bernardino	50.5	35	100[*]	Central San Bernardino Valley
Salton Sea Air Basin				
Riverside	24.6	17	49	Coachella Valley

Bold text denotes the peak value

[#] Based on FRM filter data

[*] 100 percent of the NAAQS is not in violation of that standard

[**] Peak value associated with Independence Day fireworks – flagged as an exceptional event

The 2015 annual average PM2.5 concentrations are summarized in Table 2-7, based on the FRM measurements. The maximum annual average of 14.5 $\mu g/m^3$ was measured at the CA-60 Near-Road site, located west of Vineyard Avenue near the San Bernardino/Riverside County border (near the cities of Ontario, Mira Loma, and Upland). The second highest maximum annual average PM2.5 concentration (13.3 $\mu g/m^3$) was measured in the Metropolitan Riverside County area at the Mira Loma station. The Basin maximum 2013–2015 annual average design value was 14.1 $\mu g/m^3$ at the Mira Loma station (118 percent of the current 2012 annual average PM2.5 NAAQS, 12.0 $\mu g/m^3$). This design value is below the former 1997 annual average PM2.5 NAAQS of 15.0 $\mu g/m^3$, for which the Basin remains in attainment. This is the lowest PM2.5 Basin design value since these measurements began in 1999. Since the near-road PM2.5 sites only became operational in 2015, the data period is insufficient for design value calculations. The CA-60 freeway near-road station could potentially become the design value site for the Basin for the PM2.5 annual average NAAQS, once sufficient data is collected. The annual PM2.5 State standard is still violated in all counties of the Basin.

Tables A-11 through A-16 in the attachment show the annual PM2.5 arithmetic mean and annual design value concentrations, the percent of sampling days exceeding the 24-hour PM2.5 NAAQS, and the annual maximum, 98th percentile, and design value 24-hour PM2.5 concentrations at all routine ambient SCAQMD air quality monitoring stations, for the period 1999–2015.

TABLE 2-7

2015 Maximum Annual Average PM2.5 Concentrations and 2013–2015 Design Values by Basin and County

Basin/County	2015 Max. Annual Average ($\mu g/m^3$)#	2013–2015 PM2.5 Annual Design Value ($\mu g/m^3$)#	Percent of Current (2012) NAAQS (12.0 $\mu g/m^3$)#	Percent of Former (1997) NAAQS (15.0 $\mu g/m^3$)#	Area of Design Value Max	2013–2015 3-Year High State Annual PM2.5 Designation Value ($\mu g/m^3$)##	Percent of State Annual PM2.5 Standard (12 $\mu g/m^3$)
South Coast Air Basin							
Los Angeles	12.4	12.3	103	82	Central Los Angeles	**19**	**158**
Orange	9.4	10.0	83	67	Central Orange County	16	133
Riverside	**13.3**	**14.1**	**118**	94	**Metropolitan Riverside County**	**19**	**158**
San Bernardino	11.0	12.5	104	83	Southwest San Bernardino Valley	17	142
Salton Sea Air Basin							
Riverside	7.5	8.0	67	53	Coachella Valley	8	67

Bold text denotes the peak value

Based on FRM filter data, excluding near-road stations due to insufficient period of record for design value calculation; the federal design value is based on the average of the 3 annual averages in the period

Based on combined FRM filter and continuous FEM data (federal FEM waiver is not applied to State designation); data may include exceptional events; the State annual designation value is the highest year in the 3-year period (State designation value source: https://www.arb.ca.gov/adam/select8/sc8display.php)

PM2.5 Spatial Variation

In 2015 the 98th percentile concentration was exceeded at eight stations. These stations include Central Los Angeles (Downtown Los Angeles) and South San Gabriel Valley (Pico Rivera) in Los Angeles County; the Metropolitan Riverside County area (Mira Loma and Rubidoux) in Riverside County; and the Central San Bernardino Valley (Fontana) and East San Bernardino Mountains (Big Bear Lake) in San Bernardino County; as well as at both near-road sites. Generally, PM2.5 concentrations are higher in the inland valley areas of Metropolitan Riverside County and San Bernardino County. These higher PM2.5 concentrations are mainly due to the secondary formation of smaller particles resulting from mobile, stationary and area source emissions of precursor gases (NOx, SOx, NH_3, VOC) that are converted to particulate matter in the atmosphere. Secondary formation occurs due to chemical reaction in the atmosphere generally some distance downwind from the original emission sources and PM2.5 varies geographically and seasonally due to topography and weather conditions that affect atmospheric chemistry and dispersion. The locations of PM2.5 precursor emission sources play a large role in where the PM2.5 peaks occur.

Figure 2-22 maps the distribution of annual average PM2.5 concentrations in different areas of the Basin. This shows peak annual average concentrations in the Metropolitan Riverside area where transport and secondary

chemical processes are most important, as well as a secondary peak in the Central Los Angeles area due to the abundant motor vehicle sources.

Most of the exceedances of the PM2.5 24-hour NAAQS occurred during the first quarter of 2015, when the highest 24-hour PM2.5 concentrations are expected. However, this is also the time frame when the Basin typically sees the most rainfall and most frequent storm events. The first quarter of 2015 had the lowest number of rain days in the past decades, as is discussed further below in this appendix (see Impacts of Drought on PM2.5 Air Quality). This reduced frequency of unstable weather conditions and storms, significantly reduces the pollution dispersion resulting in longer episodes of stagnant air when particulate pollution can build to unhealthful levels.

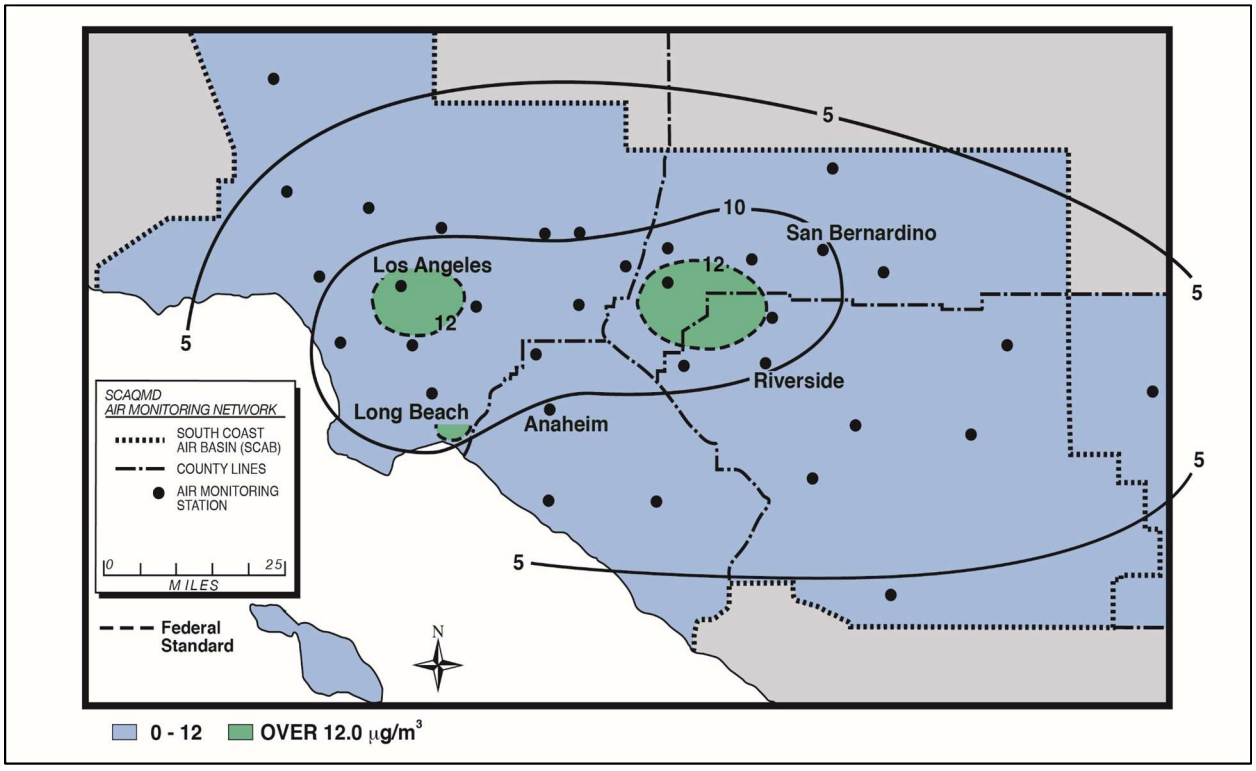

FIGURE 2-22

Spatial Distribution of the 2015 Annual Average PM2.5 Concentrations

(The 2012 annual PM2.5 NAAQS is 12 µg/m^3, annual arithmetic mean)

PM2.5 Trends

Figure 2-23 shows the trend of the Basin 3-year 24-hour and annual design values, compared to the current 2006 24-hour and 2012 annual PM2.5 standards, for the period of 2001 through 2015. This illustrates the significant progress toward attainment of the standards in the last 15 years. It also shows the reversal in trend of 24-hour PM2.5 for the 2014 and 2015 design values due to the impact of the drought. Programs and regulations aimed at reducing direct emissions of particles as well as those that reduce gaseous emissions that can form particles in the atmosphere have played an important role in reducing PM2.5 concentrations. These include the national, State, and regional programs designed to reduce ozone-forming emissions of VOCs and NOx, which also contribute to secondary PM2.5 formation.

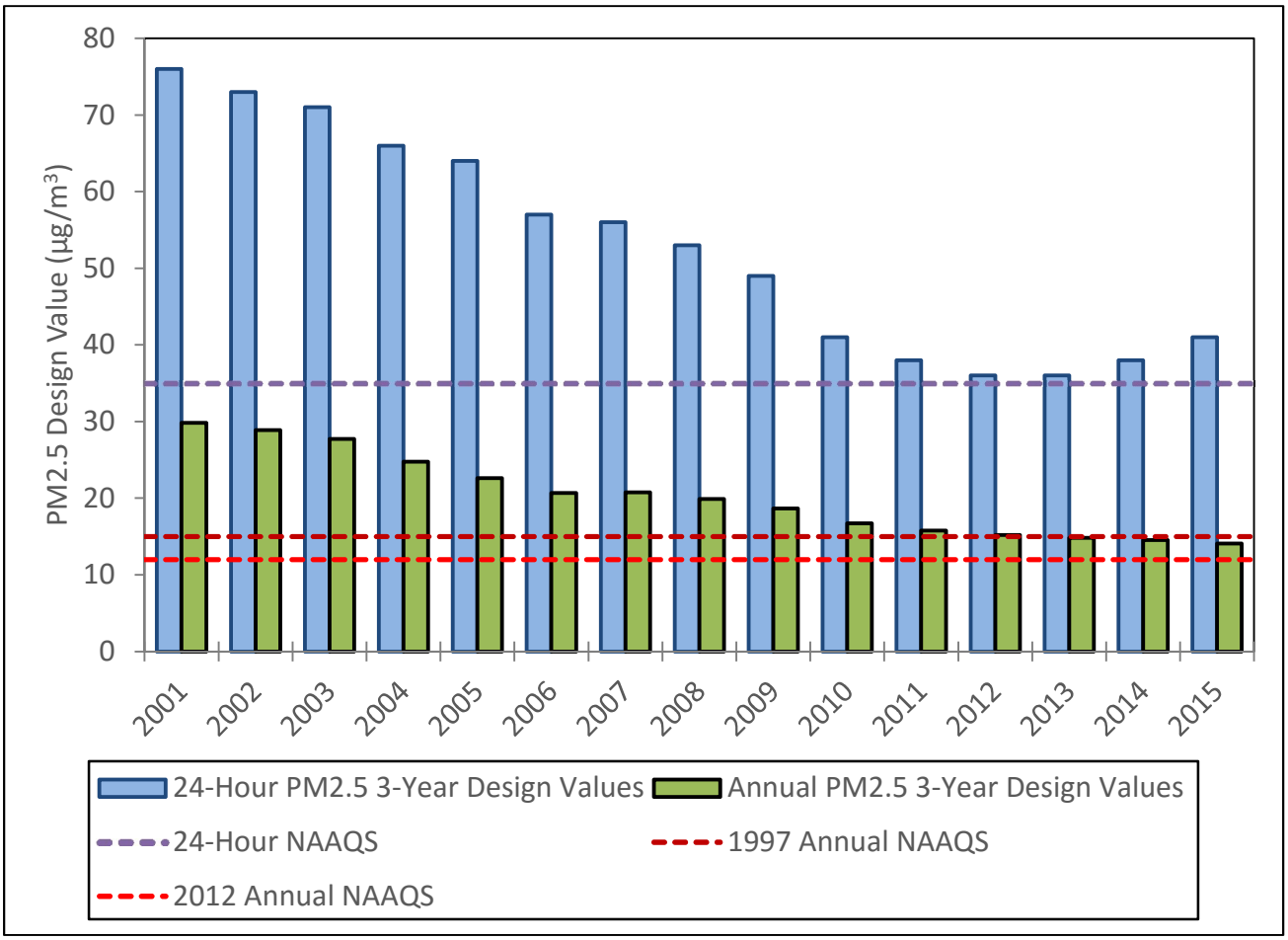

FIGURE 2-23

South Coast Air Basin Peak PM2.5 Design Value Trends, 2001–2015

PM2.5 Temporal Variation

Seasonal and day-of-week variations in PM2.5 concentrations are complex and location dependent, and may vary from year to year depending on meteorological conditions, the presence of large wildfires, residential wood burning, and other factors. Meteorological conditions such as wind direction and speed, mixing height and temperature play an important role in the formation and removal mechanisms of PM and its components. PM2.5 concentrations typically have a distinct seasonal pattern in the Basin, with higher concentrations in the first (January–March) and fourth (October–December) calendar quarters. This is, in part, because secondary PM precursors, such as particulate nitrates and carbonaceous particles, are more readily formed in cooler

weather. Wood stove and fireplace use in the cool months also increases direct emissions of carbon. Persistent trapping occurs in the cool months due to near-surface temperature inversions formed by the radiation of heat from the surface on the cool nights. Figure 2-24 shows the Basin-wide monthly averaged PM2.5 concentrations, by month for the years 2013–2015. The highest monthly PM2.5 averages were recorded in January and February, followed by December.

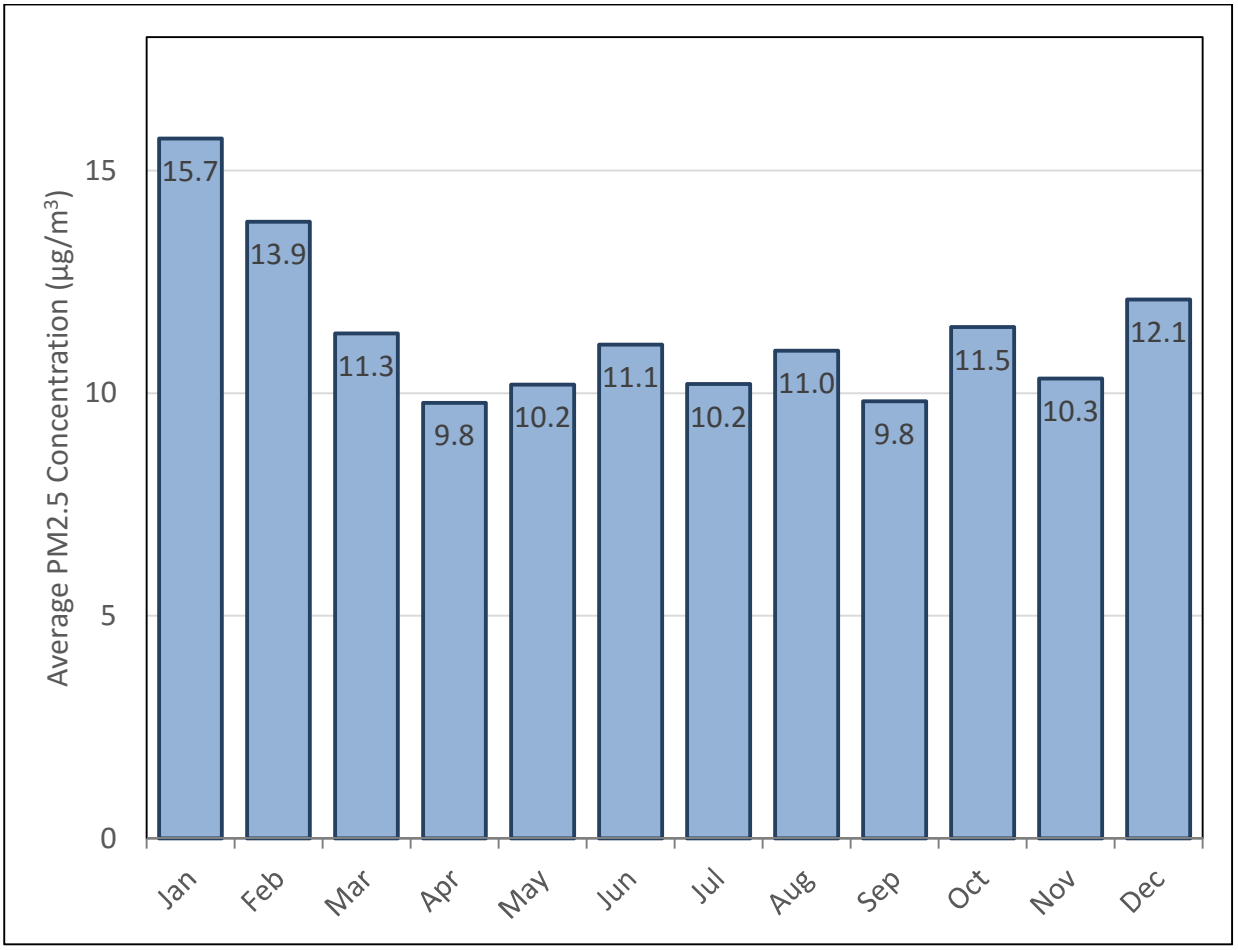

FIGURE 2-24
PM2.5 Variation of Basin-wide FRM Monthly Average Concentration, 2013–2015

As shown in Figure 2-25, the highest number of station-days when the PM2.5 concentration exceeds the 24-hour NAAQS in the most recent three years occurred during the fall and winter seasons. SCAQMD introduced the "*Check Before You Burn*" program to help improve wintertime air quality by issuing 24-hour no-burn alerts for residential fireplaces, outdoor fire pits, and wood stoves when air quality is forecasted to reach unhealthful levels. Alerts are issued only during winter wood-burning months (November 1 through the end of February) for specific areas or the entire South Coast Air Basin, depending on the forecasted concentrations. The wintertime program became mandatory on November 1, 2011 under the provisions of Rule 445 – Wood-Burning Devices, which was amended in May 2013 to lower the forecast threshold for wood burning curtailment.

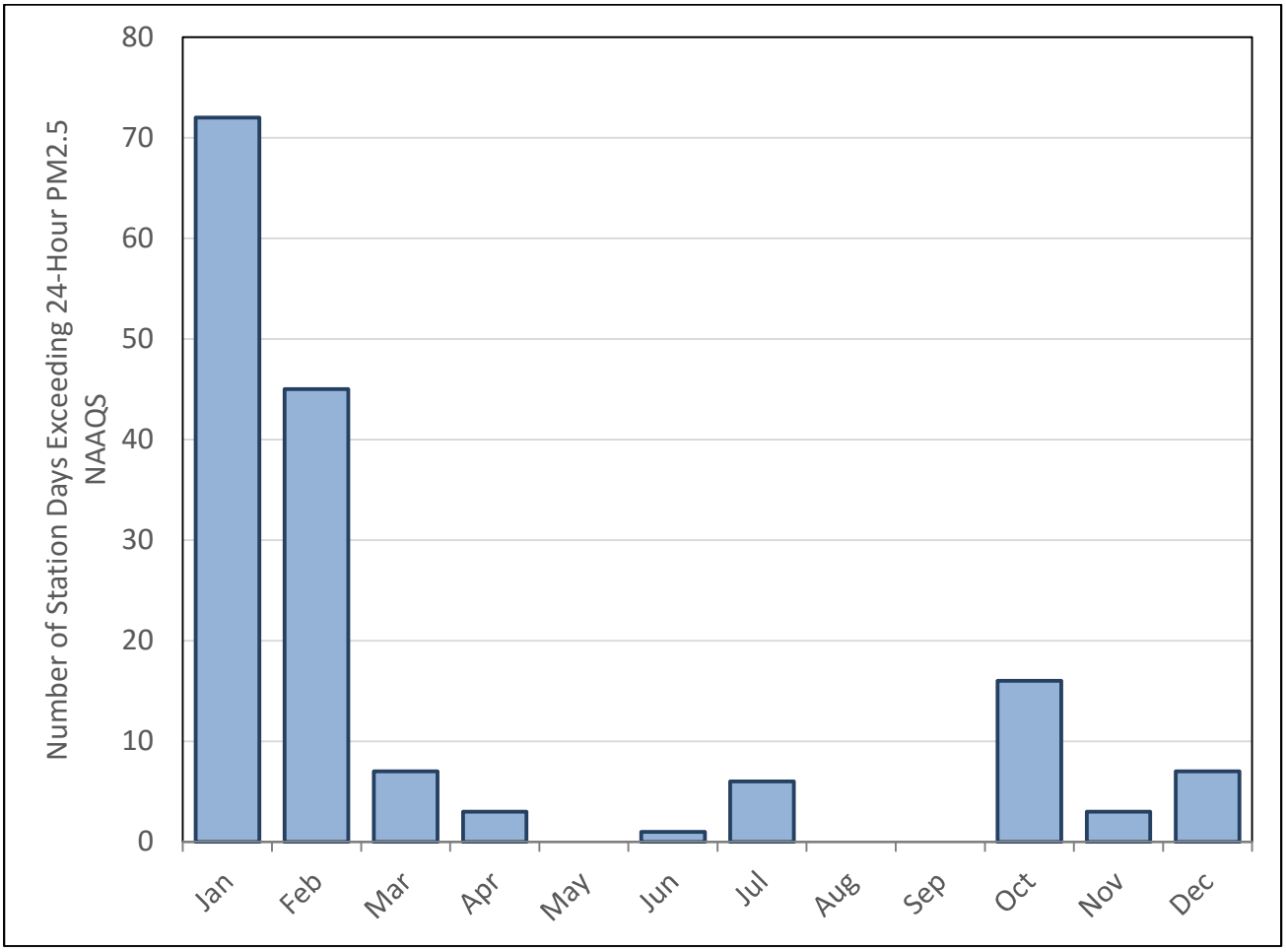

FIGURE 2-25
2013–2015 PM2.5 Monthly Variation of Station-Days Exceeding
the 2006 24-Hour PM2.5 NAAQS (35.0 µg/m^3)

Figure 2-26 shows an analysis of day-of-week variation in Basin-wide PM2.5 daily concentrations averaged for the years 2013-2015. This shows that Saturdays have slightly higher average PM2.5 concentrations, likely due to buildup of pollution over multiple weekdays, the change in traffic patterns, and increase in residential wood burning. Mondays had the lowest concentrations, likely due to Monday's decreased carryover from the traffic on weekends and reduced wood burning on the weekdays. However, the average difference from the lowest day of the week to the highest is only 0.4 µg/m^3. PM2.5 concentrations generally remain consistent between Tuesdays and Fridays.

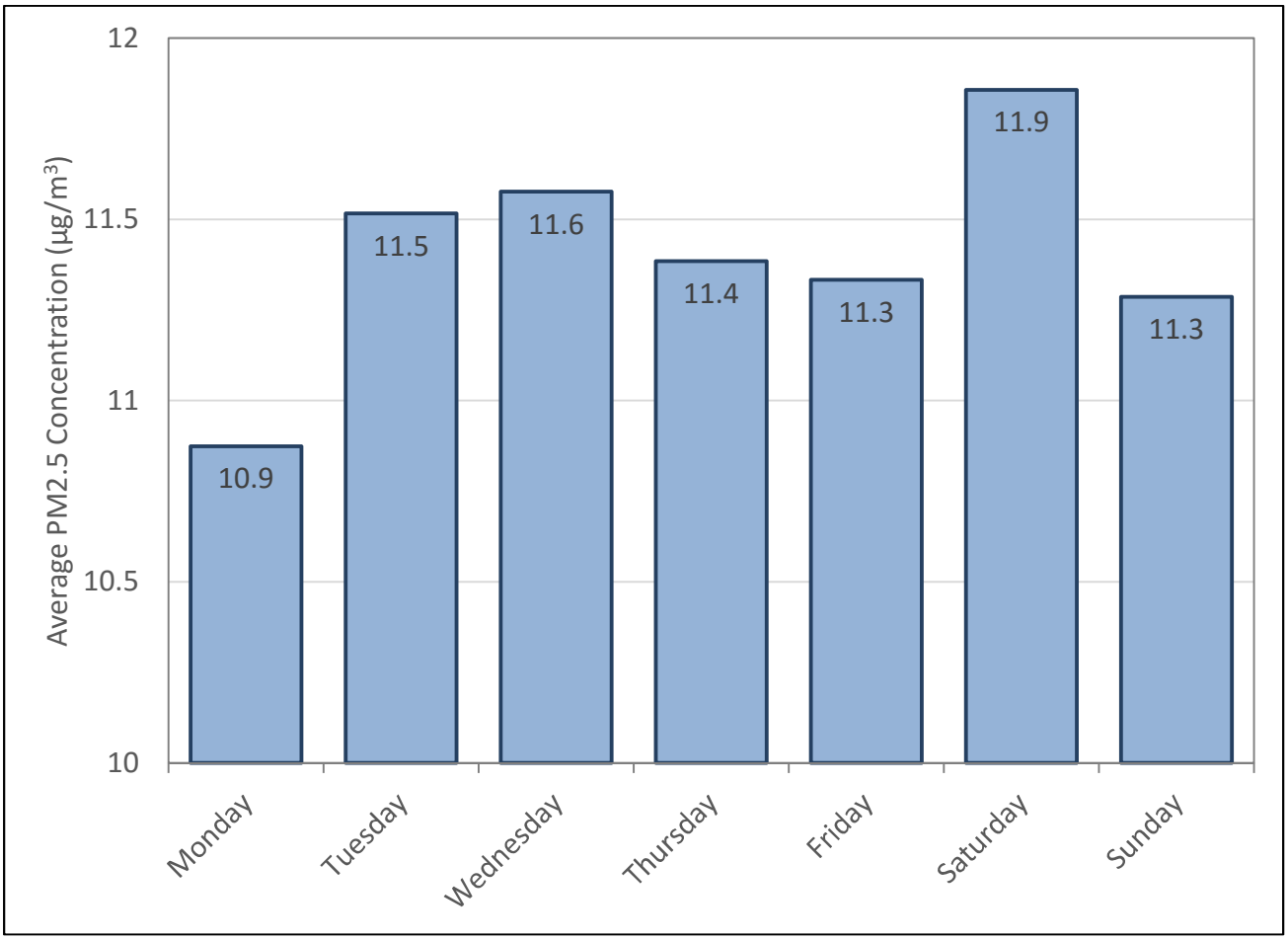

FIGURE 2-26
PM2.5 Basin-wide Day-of-Week Variation of 24-Hour Average FRM PM2.5 Concentrations, 2013–2015

Figure 2-27 shows average PM2.5 concentration by hour of the day for the 2013–2015 period, based on the continuous PM2.5 measurements using hourly FEM BAM sampler data. The diurnal plots are for the Basin maximum PM2.5 monitor at Metropolitan Riverside County (Mira Loma), as well as for Central Los Angeles (Downtown L.A.), Central Orange County (Anaheim), and for the average of several other sites throughout the Basin. In general, PM2.5 concentrations in urban environments have been shown to closely follow temporal variation in traffic density, with highest levels observed on weekdays during rush hours. As seen in Figure 2-27, PM2.5 concentrations peaked in the morning between 0600 and 0900 PST because of rush hour traffic and decreased throughout the day due to decreased traffic volume, increased wind speeds and subsequent dispersion of PM2.5 and precursor emissions. PM2.5 can also be formed by chemical reactions in the atmosphere, particularly in the photochemically active, warm seasons. This is often seen as a mid-day peak associated with secondary particle formation, seen in the plots between 0600 PST and 1400 PST. The PM2.5 concentrations reach a secondary peak in the evening hours, following evening traffic, and can remain elevated overnight when the lower nighttime temperature inversion (particularly in colder seasons) traps the pollutants in a shallower layer near the surface.

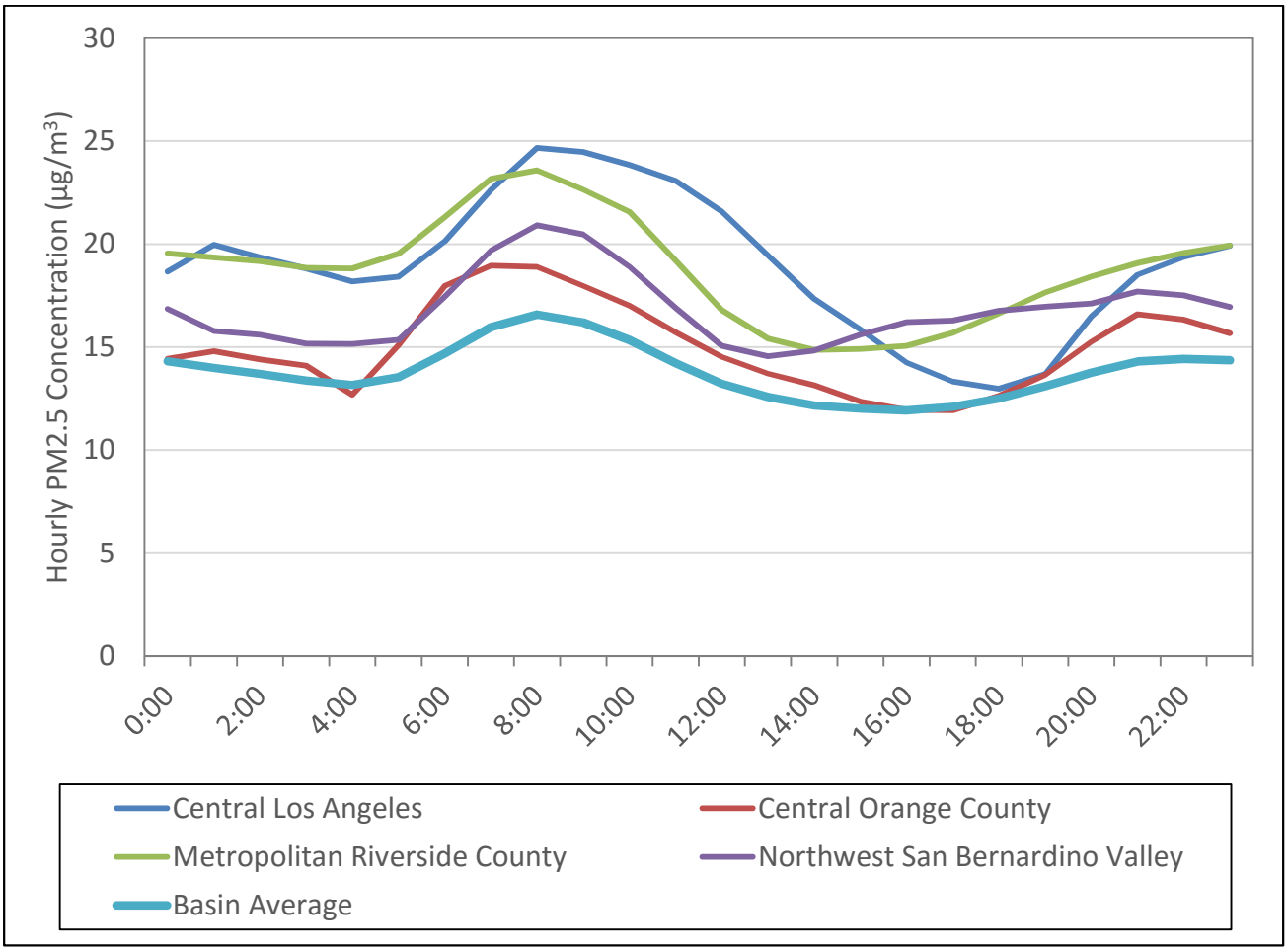

FIGURE 2-27

Diurnal Variation of Hourly FEM PM2.5, Averaged by Time of Day, 2013–2015

The effect of meteorology on PM2.5 concentration is more evident when comparing average diurnal patterns for different seasons (Figure 2-28). Several factors contribute to the seasonal variability of PM2.5. The winter season, characterized by lower temperatures and lower mixing heights, along with wood burning and heating-related emissions, result in elevated PM2.5 levels in the evenings. Summer months on the other hand, are typically characterized by distinctly higher mid-day levels, due to the increased photochemical activity, favoring particle formation. As a result, PM2.5 concentration remains elevated after the morning rush hour traffic and through much of the remainder of the day.

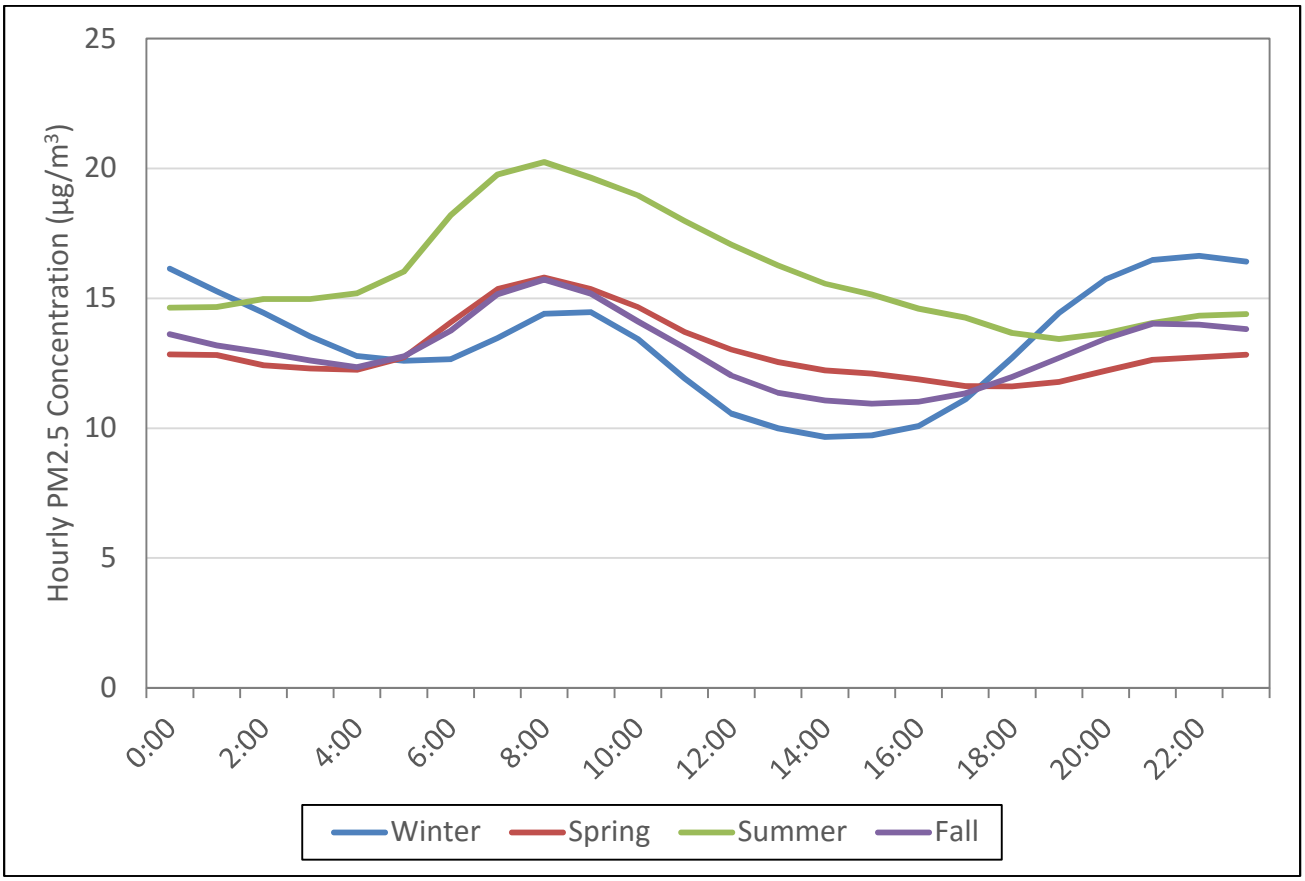

FIGURE 2-28

Seasonal Diurnal Variation of Hourly FEM PM2.5, Averaged by Time of Day for the Basin, 2013–2015

PM2.5 Speciation

Further insight into the sources of fine particulate matter requires an examination of particle composition, therefore PM2.5 speciation sampling, to determine the chemical components of PM2.5 is also a part of the District's PM2.5 measurement program. Currently, PM2.5 speciation samplers are deployed at four representative locations in each of the Basin's counties (Anaheim, Fontana, Los Angeles and Rubidoux). The 24-hour filter samples from the Speciation Air Sampling System (SASS) samplers in the SCAQMD ambient network are run every six days, with analysis conducted at the SCAQMD Laboratory. Figure 2-29 shows the trends of the annual concentration of six PM2.5 component species: Elemental Carbon (EC), Organic Carbon (Organics), Sulfate (SO_4), Nitrate (NO_3), Ammonium (NH_4), and Crustal Elements (soils). Most of the components show a downward trend in recent years. The largest decline is observed for NH_4, NO_3, SO_4 and EC. These reductions are attributed to the success of regulatory efforts, such as stringent regulations and a myriad of programs that target PM2.5, and NOx and diesel emissions. Concentrations of the crustal material have been more or less constant throughout the years, with a slight increase in the past three years, most likely attributable to the recent drought. The lack of rain leads to drier ground surfaces and less crusting of soil and washing of road surfaces. This can lead to enhanced resuspension of fugitive dust by moving vehicles and winds. Fugitive dust can boost concentrations of both PM10 and PM2.5, although the coarse portion of PM10 is usually more affected. Unlike other components of PM2.5, organics concentrations have been increasing since 2012, after a period of progressive decline.

FIGURE 2-29

South Coast Air Basin PM2.5 SASS Speciation Network Annual Trends, 2004–2014

[annual averaged PM2.5 mass of Ammonium (NH_4), Nitrate (NO_3), Sulfate (SO_4), Crustal Component Concentrations, Organics and Elemental Carbon (EC) for Anaheim, Fontana, Los Angeles and Rubidoux]

More information can be assessed from the relative contribution of each component species to total PM2.5 mass concentration, as is presented in Figure 2-30. The relative contributions of NH_4, NO_3, SO_4 and EC are decreasing with a higher rate, particularly since 2010, while the relative contribution of organics and crustal material have been increasing. Crustal material emissions are usually from sources like windblown soil and dust, brake lining abrasion, tire wear, and bioaerosols, all of which can be difficult to regulate. As a result, with little year to year variation and considering the declining PM2.5 concentrations, the relative contribution of these emissions to PM2.5 mass is on the rise. The organics are the other PM2.5 component with an increasing concentration and relative contribution, especially during the drought years.

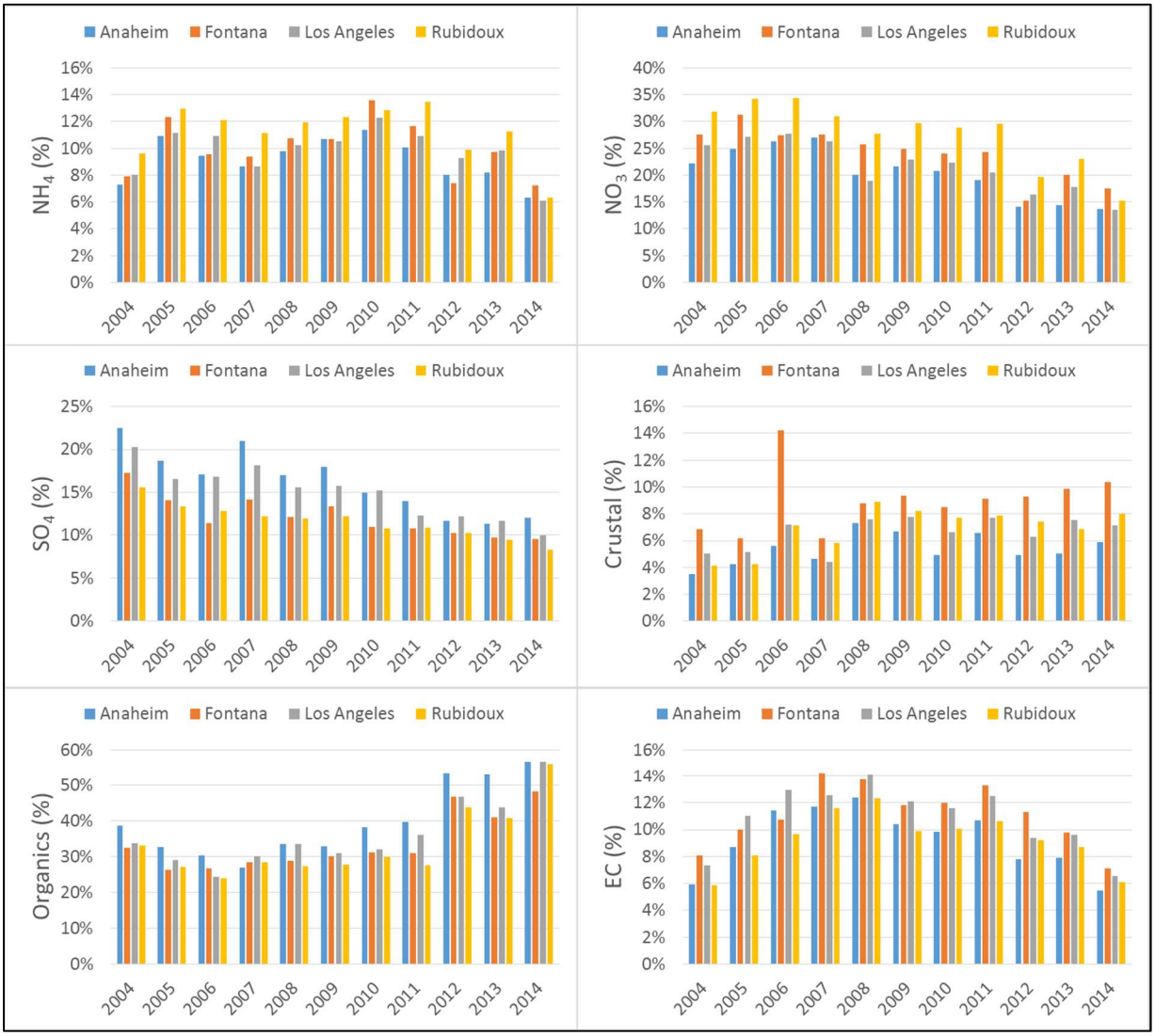

FIGURE 2-30

South Coast Air Basin PM2.5 Speciation Network Annual Trends
of Relative Contribution to Mass, 2004–2014

[annual averaged PM2.5 Ammonium (NH_4), Nitrate (NO_3), Sulfate (SO_4), Crustal Component Concentrations, Organics and Elemental Carbon (EC) for Anaheim, Fontana, Los Angeles and Rubidoux as percent of total mass]

The PM2.5 components have a strong seasonality, as is shown in Figure 2-31. The organics and SO_4 have a reverse seasonality compared to rest of components. The highest organics and SO_4 concentrations are measured in spring and summer, and they have the highest relative contribution in summer, likely due to higher fraction of particulate organic carbon due to a secondary origin in gas/particle conversion of volatile organic compounds. This fraction could be estimated from the minimum ratio between particulate organic and elemental carbon. Organic carbon is the largest contributor to the PM2.5 mass at all four of the speciation sites and in all seasons. The average contribution of elemental carbon to the PM2.5 mass concentration is 10% on average over all the sites.

The OC to EC ratio is often used to distinguish the relative importance of primary and secondary organics. It is generally assumed that EC, the main component of soot, is only emitted by primary combustion sources, and these primary emissions have some characteristic ratio of OC to EC. If observed ratios of OC/EC are higher

than those assumed to occur in primary emissions (a ratio between 2 and 5 is generally assumed for OC/EC in primary emissions), then the excess OC is assumed to be due to secondary organic aerosol formation.

Figure 2-32 shows the historical trend of OC/EC ratios at each of the speciation sites. In the period of 2004 through 2011, the OC/EC ratios at all four sites were within the values assumed for primary emissions (with exception of 2004 which is slightly above those values, particularly at Anaheim and Rubidoux). However the OC/EC ratio increased significantly between 2011 and 2014, with highest ratios at all four sites observed in 2014, suggesting that secondary OC is becoming an even more important component of PM2.5. It should be noted that the primary OC/EC ratio is highly dependent on the sampling and analysis methods and thus may not be consistent from study to study. In addition, the primary OC/EC ratio can vary throughout the 24-hour sample collection period and may also be highly variable from day to day.

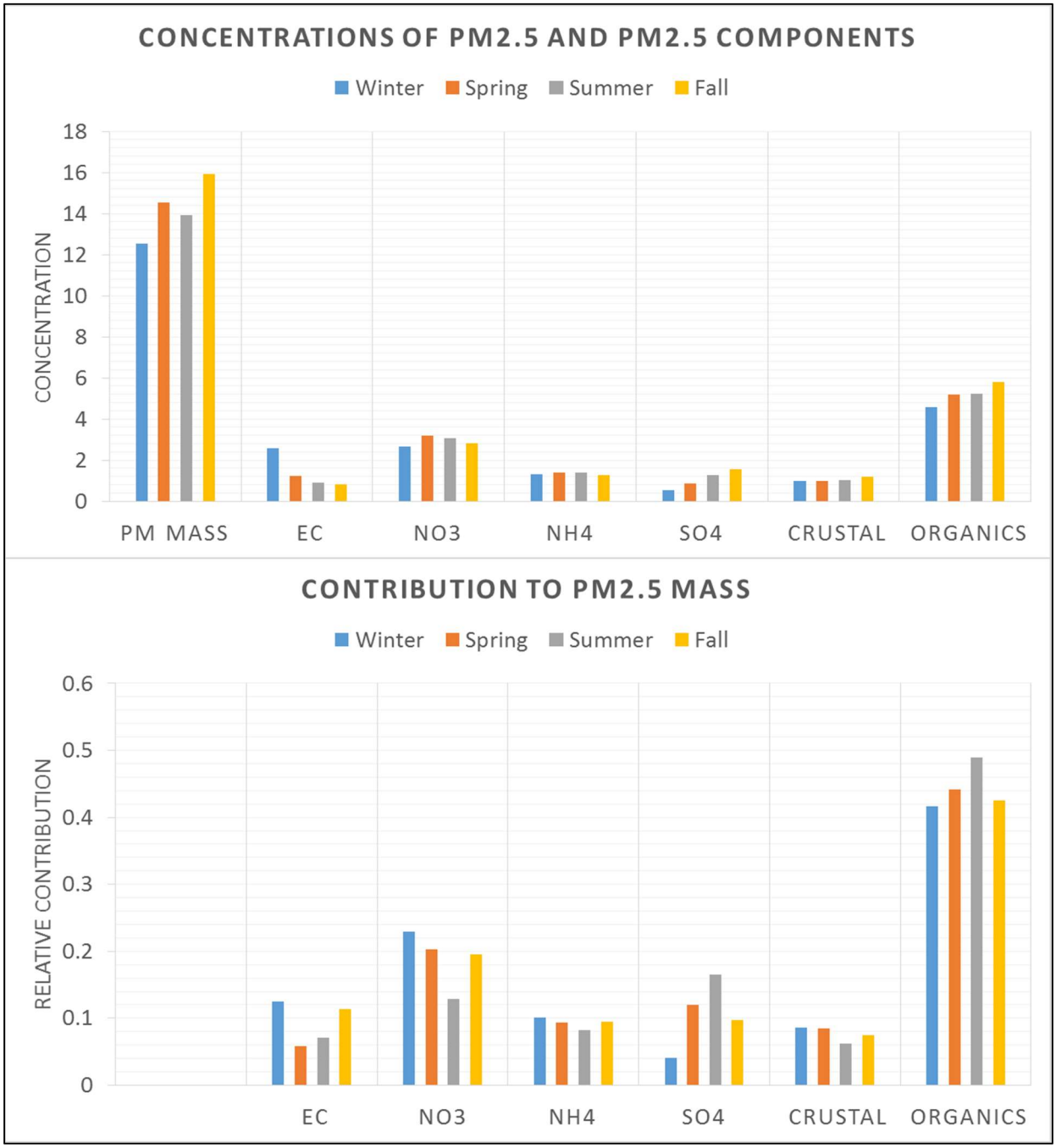

FIGURE 2-31

Seasonal Variations in relative contribution of PM2.5 Components to Total Mass and Concentrations of PM2.5 Components, 2011–2014

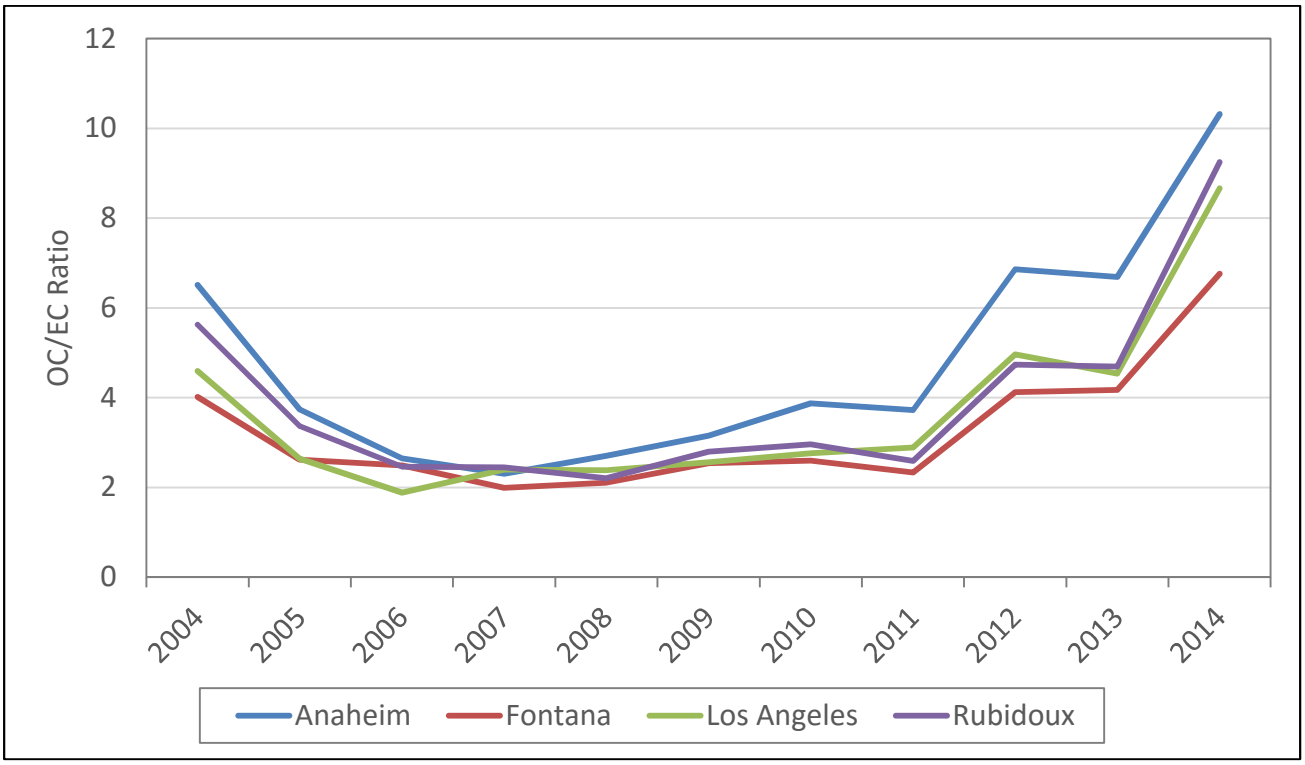

FIGURE 2-32
Trends of South Coast Air Basin PM2.5 Organic Carbon (OC)
to Elemental Carbon (EC) Ratio, 2011–2014

Figure 2-33 shows the composition from the speciation sampler at the Riverside-Rubidoux station, comparing the 2013 annual average to the 2013 peak 24-hour average sampled at this location. This is the closest PM2.5 speciation station to the Basin maximum PM2.5 station (Mira Loma) and it was the Basin maximum location before monitoring began at Mira Loma. On the high day, the nitrates become a larger fraction of the mass compared to the annual average, indicating the importance of secondary atmospheric processes to the PM2.5 composition in Riverside County.

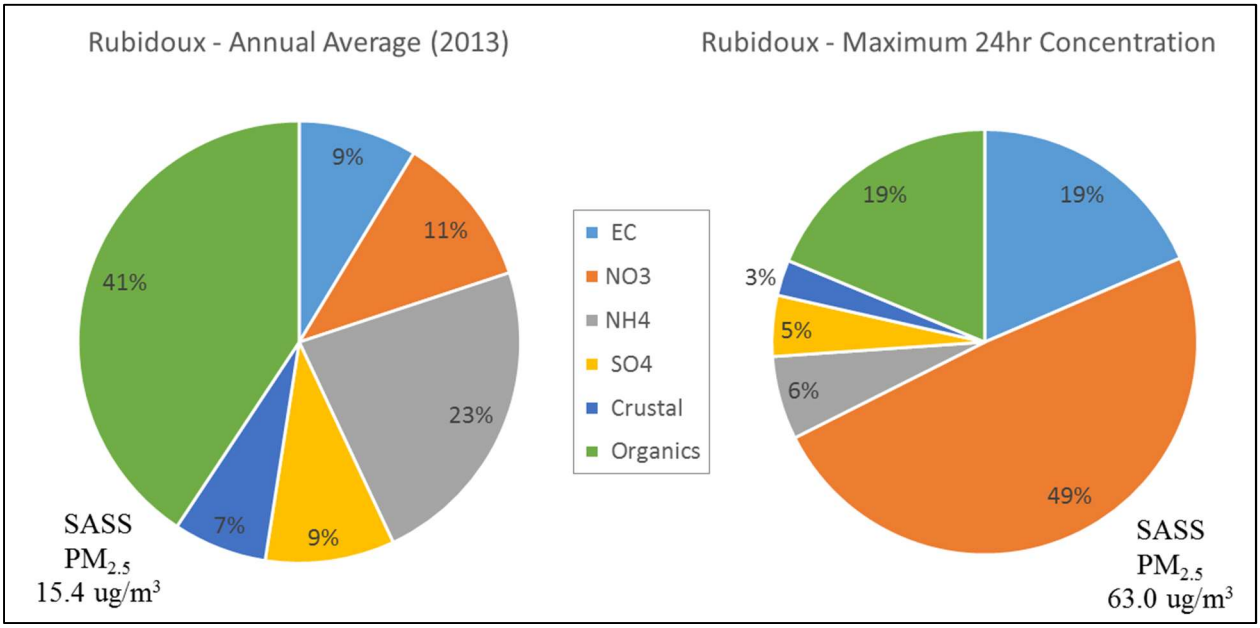

FIGURE 2-33
2013 PM2.5 Composition for Annual Average and Highest Day
(Riverside-Rubidoux SASS Speciation Sampler)

Near-Road PM2.5

On December 14, 2012, U.S. EPA strengthened the NAAQS for PM2.5 and, as part of the revisions, a requirement was added to monitor near the most heavily trafficked roadways in large urban areas. Particle pollution is expected to be higher along these roadways as a result of direct emissions from cars and heavy-duty diesel trucks and buses. SCAQMD has installed the two required PM2.5 monitors by January 1, 2015, at locations selected based upon the existing near-roadway NO_2 sites that were ranked higher for heavy-duty diesel traffic. The locations are: (1) I-710, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; and (2) CA-Route 60, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma and Upland. These near-road sites measure PM2.5 daily with FRM filter-based measurements.

Table 2-8 summarizes the 2015 annual and 24-hour PM2.5 data from the near-road sites and nearby ambient monitoring stations. The 2015 PM2.5 annual averages from the Route 710 and Route 60 Near-Road sites were 12. 9 and 14.5 µg/m^3, respectively. The nearby ambient stations in South Coastal Los Angeles County (North Long Beach Station) and in Metropolitan Riverside County (Mira Loma station) measured 10.8 and 13.3 µg/m^3, respectively, for the 2015 annual average. Thus, the annual PM2.5 measurements from these sites for 2015 indicate that the near-road sites do indeed measure higher than the nearby ambient stations, on average. If this pattern holds for the long term, the CA-60 near-road station could potentially become the 3-year design value site for the Basin for the PM2.5 annual average NAAQS, once sufficient data is collected.

While it reasonably could be expected that the highest near-road site would also become the basin-maximum design value site for the 24-hour PM2.5 NAAQS, this may not be the case for the Basin. The 2015 98th percentile 24-hour PM2.5 concentration is higher at the I-710 Near-Road than at the nearby N. Long Beach station. However, the 98th percentile 24-hour concentration remains higher at Mira Loma (43.2 µg/m^3) than at the CA-60 Near-Road site (39.9 µg/m^3). The number of days over the 24-hour PM2.5 NAAQS was also significantly higher at the Mira Loma station, with 17 days over the 24-hour NAAQS compared to 10 days at the CA-60 Near-Road site. PM2.5 24-hour concentrations at the Mira Loma station are likely higher than the

near-road site on the highest days, due to the influence of enhanced secondary particle formation at Mira Loma.

TABLE 2-8

2015 Annual Arithmetic Mean, Maximum and 98th Percentile 24-Hour PM2.5 Concentrations, and Number of Samples Exceeding the 24-Hour PM2.5 NAAQS at South Coast Air Basin Near-Road Sites and Nearby Ambient Stations

Near-Road PM2.5					Nearby Ambient PM2.5				
	Annual Average PM2.5 (µg/m³)	Peak 24-Hour PM2.5 (µg/m³)	98th Pctl. 24-Hour PM2.5 (µg/m³)	No. Samples Exceeding 24-Hour PM2.5 NAAQS		Annual Average PM2.5 (µg/m³)	Peak 24-Hour PM2.5 (µg/m³)	98th Pctl. 24-Hour PM2.5 (µg/m³)	No. Samples Exceeding 24-Hour PM2.5 NAAQS
Near-Road Station	**2015**	**2015**	**2015**	**2015**	**Ambient Station**	**2015**	**2015**	**2015**	**2015**
Route 710 N. R. (at Long Beach Bl., Los Angeles County)	12.9	48.8	35.7	7	**North Long Beach**	10.8	54.6	32.1	3
Route 60 N. R. (West of Vineyard Av., San Bernardino/Riverside County)	**14.5**	52.7	39.9	10	**Mira Loma**	13.3	**56.6**	**43.2**	**17**

Bold text denotes the peak value

Filter-based FRM measurements shown

The annual PM2.5 NAAQS is 12.0 µg/m³; the 24-hour PM2.5 NAAQS is 35 µg/m³

Impacts of Drought on PM2.5 Air Quality

The drought conditions that have persisted in Southern California and the southwestern United States over the past few years have negatively affected air quality in many areas. The low amount and frequency of rainfall leads to less washing of road surfaces and drier ground surfaces, which reduces the natural crusting of soils that is improved by moisture. This can lead to enhanced resuspension of fugitive dust by moving vehicles and winds. Fugitive dust can raise concentrations of both PM10 and PM2.5. More importantly, the ongoing drought conditions have caused a reduction of the natural air pollution cleansing effect of precipitation due to washout – particulate matter and its precursors captured and removed by raindrops. The reduced frequency of storms also translates to fewer days of enhanced pollutant dispersion. Without the storm systems and related winds, there is less mixing of air pollutants with cleaner air in the atmosphere and less transport that moves pollutants out of the region. The lack of windy, unstable weather conditions during storms results in longer episodes of stagnant air when particulate pollution builds to unhealthful levels. The dry conditions have also contributed to increased frequency and intensity of wildfire events throughout the State, with resulting impacts to both particulate and ozone air quality. The net impact of the drought on air quality in the Basin over the past several years has been to disrupt the steady progress seen in prior years toward attainment of the 24-hour PM2.5 NAAQS, for which the design value is based on the 3-year average of the 98th percentile measurement.

Table 2-9 shows the rainfall statistics for the National Weather Service Downtown Los Angeles meteorological station, 2006–2015. Figure 2-34 shows the 2002–2015 trend of both 98th percentile 24-hour PM2.5 values and the 3-year design value, along with the trends of PM2.5-equivalent emissions[25] and the number of rainfall days during the first and fourth quarters of the year. The first and fourth quarters are the most important to consider, since the vast majority of the days that exceed the federal 24-hour standard in the Basin occur during this period. This is also the time period that the Basin typically experiences the most rainfall and more frequent storm events.

TABLE 2-9

Trends of Annual and Quarters 1 & 4 Rainfall Totals and Number of Rain Days for Downtown Los Angeles, 2006–2015

30-Year Average	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Annual Rainfall (inches)										
14.93	11.61	5.66	14.43	9.39	23.09	12.26	8.15	3.60	9.77	7.66
Quarter 1 (Jan., Feb., Mar.) Rainfall (inches)										
9.35	7.30	1.16	9.62	4.24	9.69	8.04	3.21	1.92	4.76	2.79
Quarter 4 (Oct., Nov., Dec.) Rainfall (inches)										
4.03	1.31	3.24	4.66	4.97	11.70	3.76	3.21	0.88	4.61	1.03
Quarter 1 & Quarter 4 (Jan., Feb., Mar., Oct., Nov., Dec.) Rainfall (inches)										
13.38	8.61	4.40	14.28	9.21	21.39	11.80	6.42	2.80	9.37	3.82
Annual Rain Days (≥ 0.01 inches)										
35.7	36	24	35	25	53	32	38	27	24	26
Quarter 1 (Jan., Feb., Mar.) Rain Days										
18.0	19	10	19	12	18	17	11	13	8	9
Quarter 4 (Oct., Nov., Dec.) Rain Days										
11.0	8	9	12	9	26	10	20	8	10	8
Quarter 1 & Quarter 4 Rain Days										
29.0	27	19	31	21	44	27	31	21	18	17

Rainfall data from National Weather Service, Downtown Los Angeles Meteorological Station (USC Campus);
Rainfall totals in inches; rain days defined as measured rainfall ≥ 0.01 inches;
30-year normal precipitation averages based on 1981–2010 data

[25] PM2.5 equivalent emissions are directly emitted PM2.5 emissions plus PM2.5 precursor emissions weighted by potential to create PM2.5 (see 2012 AQMP, Appendix V: Modeling and Attainment Demonstrations: http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2012-air-quality-management-plan/final-2012-aqmp-(february-2013)/appendix-v-final-2012.pdf).

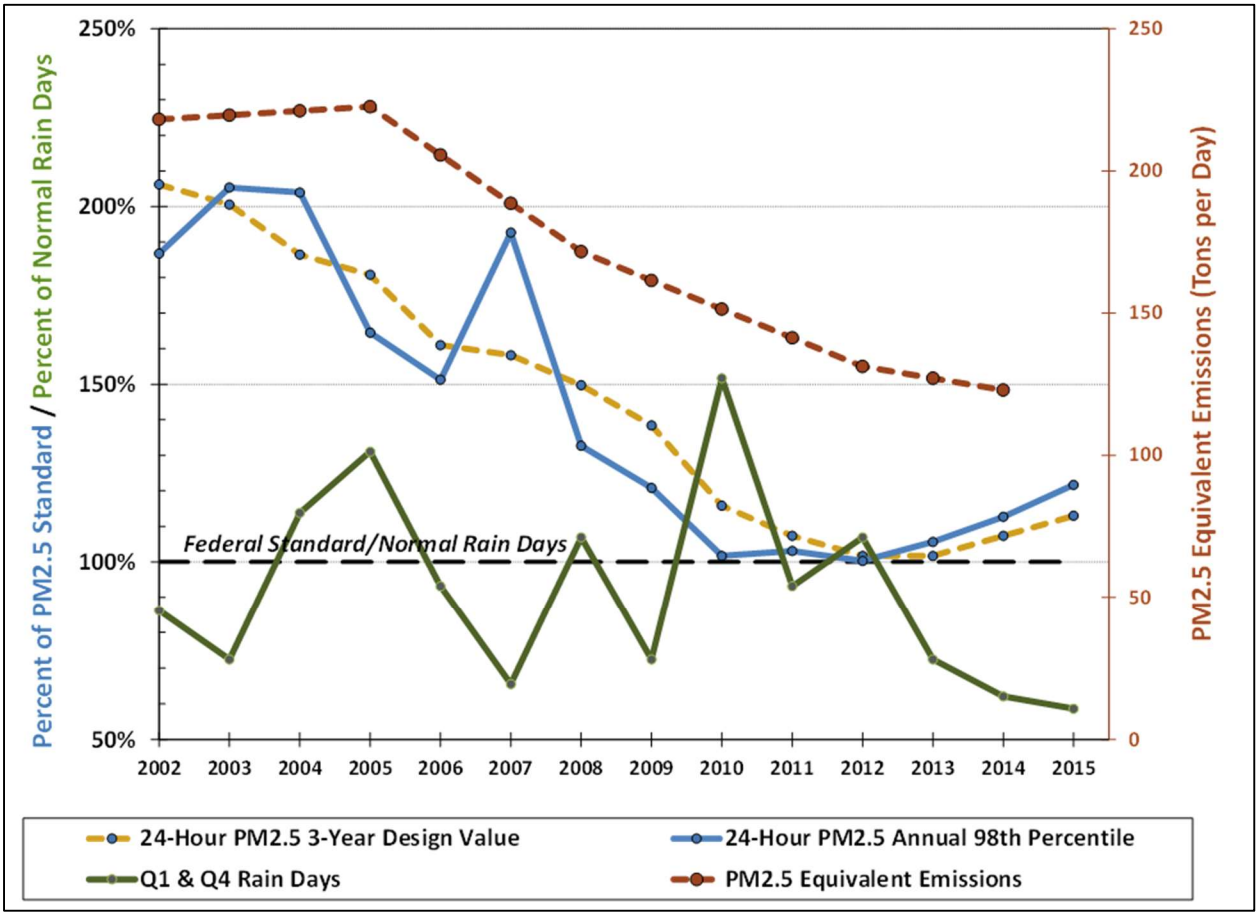

FIGURE 2-34

Trend of South Coast Air Basin Maximum 24-Hour PM2.5 3-Year Design Values and Corresponding Annual 98th Percentile Concentration as Percent of the 24-Hour PM2.5 NAAQS (35 µg/m^3), with Annual Trends of PM2.5 Equivalent Emissions and Percent of Normal Number of Rain Days for Quarters 1 (Jan.–Mar.) and 4 (Oct.–Dec.)

(Basin maximum PM2.5 from Riverside-Rubidoux air monitoring station through 2006, then Mira Loma after that station was installed)

Annual precipitation totals have been below the normal, or average, value of 14.93 inches (30-year average, 1981–2010) at Downtown Los Angeles from 2011 through most of 2015. Similar relative rainfall deficits were seen at stations throughout Southern California in this time period. After a very wet year in 2010, Downtown Los Angeles measured 82 percent of normal annual rainfall in 2011, with the number of rain days in the first and fourth quarters at 93 percent of the average of 29 days that typically occur during those months. Annual rainfall in 2012 was only 55 percent of normal, but the number of rain days in the first and fourth quarters was a little above normal. Although these initial signs of the emerging drought existed in 2011 and 2012, the cumulative effect of multiple dry years had not yet taken a significant toll on air quality and the amount of storm systems and rain events was not significantly below average. The 98th percentile 24-hour PM2.5 concentrations continued the steady decline in 2012, as had been seen in most years since the PM2.5 measurements started in 1999. This consistent trend of improving fine particulate air quality is associated with the continued implementation of PM2.5-related emission reductions in the Basin. In 2012, the Basin maximum annual 98th percentile 24-hour PM2.5 was at an all-time low of 35.1 µg/m^3 at Mira Loma, the Basin's

highest station, which was under the federal PM2.5 standard (35.5 µg/m^3 is needed to exceed the standard due to rounding conventions).

The 2013 annual rainfall total measured at Downtown Los Angeles was just 3.6 inches, 24 percent of normal. Rainfall events of 0.01 inches or more were 27 percent fewer in 2013 than the average of 29 days that typically occur during the first and fourth quarters of the year, when the Basin historically experiences its highest 24-hour PM2.5 concentrations. As the drought intensified, the impact on PM2.5 air quality became evident in 2013. The 2013 Mira Loma annual 98th percentile concentration increased to 37.5 µg/m^3. The Basin's PM2.5-related emissions continued to decrease, while the long-term trend of steady progress seen in prior years started to reverse due to the drought-related meteorological conditions.

By 2014 the rainfall deficit from the ongoing drought in Southern California had become severe, with annual rainfall totals at 65 percent of normal at Downtown Los Angeles. With only 62 percent of the normal number of rain days and the smaller rain amounts due to the weaker and less frequent storm systems in 2014 and that year's maximum 98th percentile PM2.5 concentration increased to 40.0 µg/m^3.

Southern California annual rainfall totals for 2015 were again quite low, with only 7.66 inches measured at Downtown Los Angeles, 51 percent of normal for the year. The first quarter of 2015 had very little rain, 2.79 inches, which is 30 percent of normal rainfall for that quarter. Only 50 percent of the normal number of rain days were recorded in the first quarter of 2015. A strong El Niño pattern developed by the end of 2015, but the rainfall increased only slightly in the fourth quarter. However, the storm track frequently reached Southern California. Even though there was little precipitation, the improved ventilation from the systems led to significantly improved PM2.5 concentrations in the fourth quarter of 2015. Unfortunately, the effect on the annual 98th percentile PM2.5 concentration was already significant due to the first quarter of 2015. That value for the year 2015 increased to 43.2 µg/m^3 at Mira Loma, the highest 98th percentile concentration measured in the Basin since 2008.

With daily measurements in the Basin for PM2.5, the 98th percentile concentration is typically the 8th highest measurement at the Mira Loma air monitoring station. In recent years, the 8th or 9th highest concentration at Mira Loma may still have been over the level of the federal standard, but with the ongoing effect of the long-term drought and lack of storm systems, the 17th highest concentration, in only the first quarter of 2015, was still over the level of the NAAQS at Mira Loma. This was the highest number of days over the standard at a single station since 2007. Basin-wide, 25 days exceeded the 24-hour standard in 2015, the most in a single year since 2009. Notably, there were no additional exceedances of the 24-hour PM2.5 standard occurring at Mira Loma through the remaining three quarters of 2015, including the fourth quarter which typically includes several days over the standard.

The preliminary PM2.5 data for the first quarter of 2016 indicates that only three days exceeded the 24-hour NAAQS at Mira Loma in that quarter, as compared to 17 days for the first quarter of 2015. Only four days Basin-wide had exceedances the NAAQS in the first quarter of 2016 at one or more stations, compared to 25 days in 2015. Likewise, the preliminary 2016 first quarter average at Mira Loma was 15.1 µg/m^3, compared to 18.4 µg/m^3 for the first quarter of 2015. As was seen in the fourth quarter of 2015, the Basin did not receive the anticipated high rainfall in the first quarter of 2016 with the El Niño conditions, but the amount of unsettled weather conditions was significantly greater than in 2014 and 2015, leading to fewer days with elevated PM2.5 levels.

While the 2012 AQMP PM2.5 attainment demonstration and the 2015 associated supplemental SIP submission indicated that attainment of the 24-hour standard was predicted to occur by the end of 2015, it could not anticipate the effect of the ongoing drought on the measured PM2.5. The 2006 to 2010 base period

used for the 2012 attainment demonstration had near-normal rainfall. While the trend of PM2.5-equivalent emission reductions continued through 2015, the severe drought conditions contributed to the PM2.5 increases observed after 2012. As a result of the disrupted progress toward attainment of the federal 24-hour PM2.5 standard, SCAQMD submitted a request and the U.S. EPA approved, in January 2016, a "bump up" to the nonattainment classification from "moderate" to "serious," with a new attainment deadline as soon as practicable, but not beyond December 31, 2019. Further discussion of drought effects on future air quality is contained in Appendix V: Modeling and Attainment Demonstrations.

PM10 Air Quality

In 2015, SCAQMD measured PM10 concentrations at 23 stations, including three in the Coachella Valley. Nineteen stations employed high-volume, filter-based FRM PM10 samplers with size-selective inlets. The 24-hour (midnight to midnight) samples are run on the federally required minimum 6-day sampling schedule, except that the Riverside-Rubidoux, Mira Loma (frequency increased in 2015), and Indio (Coachella Valley) stations sampled on a 3-day schedule for additional temporal resolution at these historic peak PM10 locations. Nine stations employed continuous PM10 monitors (4 BAM and 5 TEOM instruments). Five of these were collocated with FRM samplers, while the remaining four were not sited along with FRM monitors. The continuous monitors, for the most part, are clustered in the historic higher concentration areas. Unlike PM2.5 FEM measurements, there is no waiver for PM10 FEM instruments and those measurements are the official reading for attainment determination on the days with no FRM filter sample. At locations where both FRM samplers and FEM PM10 continuous analyzers are deployed together, the data is generally combined for attainment purposes, with the FRM data the primary data source when available. Figure 2-35 shows the routine ambient PM10 monitoring sites in the SCAQMD jurisdiction.

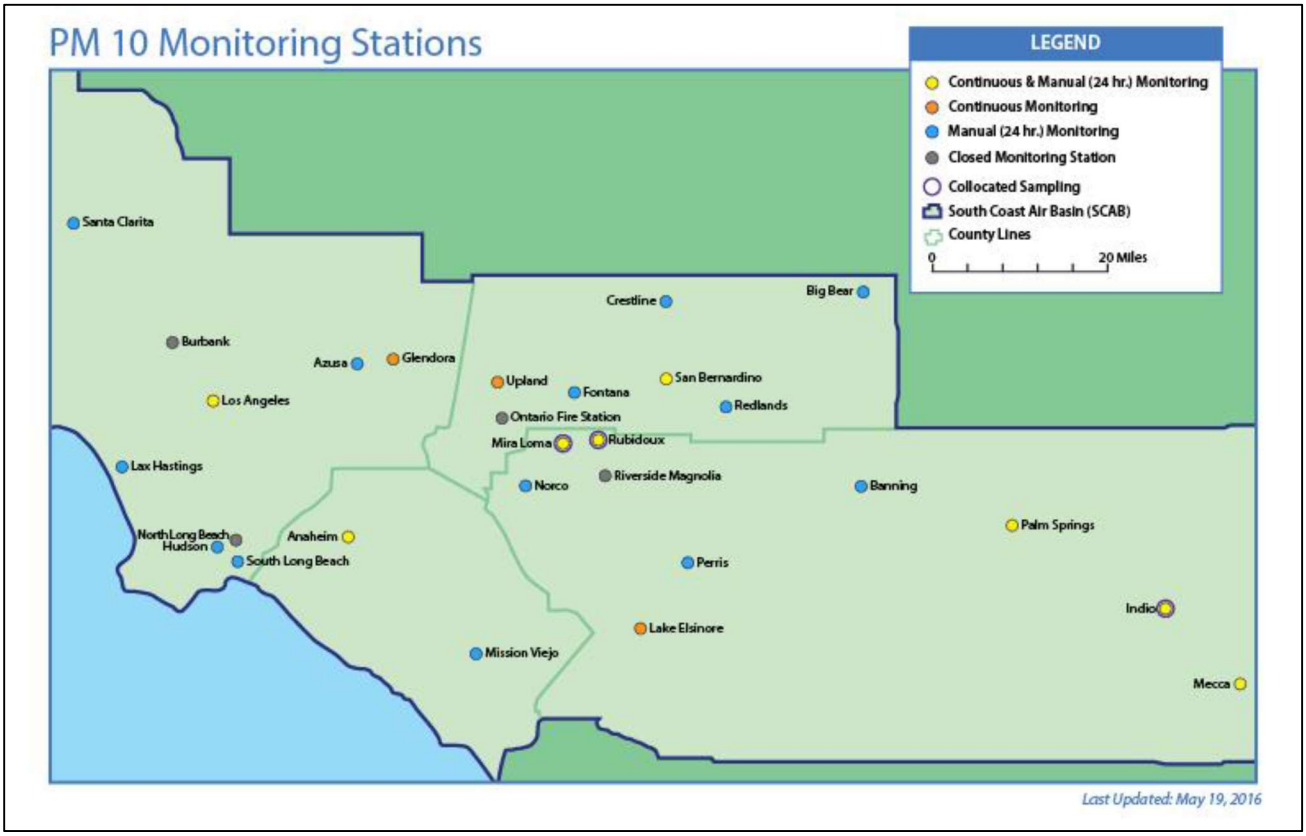

FIGURE 2-35

South Coast Air Quality Management District PM10 Monitoring Locations

(Note that PM10 stations were closed at N. Long Beach in 2013 and at Burbank and Ontario in 2014 are mapped with grey dots; the Big Bear station did not measure ambient PM10 in 2015; Palm Springs, Indio and Mecca-Saul Martinez stations are in the Salton Sea Air Basin – Coachella Valley; the manual FRM PM10 monitors also comprise the SCAQMD sulfates network)

The 2015 maximum 24-hour PM10 and 2013–2015 design values and state designation values are summarized by county and basin in Table 2-10. In that year, the federal 24-hour standard level (150 μg/m^3) was exceeded on two days in the Basin, at the Perris Valley station on September 9 (188 μg/m^3) and at the Central San Bernardino Valley station at in the City of San Bernardino on December 26 (187 μg/m^3). These high 24-hour averages were both associated with high-wind conditions and were flagged as exceptional events pending further documentation and U.S. EPA concurrence.[26] At this time, these two events also do not jeopardize the attainment design value, which allows for one exceedance per year at a station, averaged over three years. The PM10 standard was exceeded on eight days in the Coachella Valley at one or more of the three stations operating in 2015. These were all associated with high-winds and were flagged as exceptional events, pending further documentation and U.S. EPA concurrence.

[26] In this case, an exceptional event determination may not be pursued since the form of the PM10 standard allows for one exceedance per year at a station and the exceeding data may not affect attainment status or other regulatory decision. Exceptional event concurrence my not be pursued to if this data does not affect the attainment status or other regulatory decision.

The Basin has remained in attainment of the 24-hour PM10 NAAQS since 2006, with a 2013–2015 24-hour design value of 126 µg/m^3 in Metropolitan Riverside County at the Mira Loma station. The Coachella Valley 2013–2015 design value for PM10 is 150 µg/m^3 (100 percent of the NAAQS).[27] The much more stringent State 24-hour PM10 standard (50 µg/m^3) was exceeded at several stations in the Basin and in the Coachella Valley.

TABLE 2-10
2015 Maximum 24-hour Average PM10 Concentrations and 2013–2015 Design Values
by Basin and County

Basin/County	2015 Maximum 24-Hour PM10 Average (µg/m^3)*	2013–2015 24-Hour PM10 Design Value (µg/m^3)*	2013–2015 Percent of PM10 NAAQS (150 µg/m^3)#	Area of Design Value Max	2013–2015 High State 24-Hour PM10 Designation Value (µg/m^3)##	2013–2015 Percent of State 24-Hour PM10 Standard (50 µg/m^3)
South Coast Air Basin						
Los Angeles	101	93	60	East San Gabriel Valley	75.6	151
Orange	66	85	55	Central Orange County	12.1	24
Riverside	**139****	**126**	**81**	**Metropolitan Riverside County**	**123.8**	**248**
San Bernardino	96**	103	66	Central San Bernardino Valley	19.2	38
Salton Sea Air Basin						
Riverside	**152****	**150**	**100**	**Coachella Valley (Indio)**	**128.2**	**256**

* Based on the FRM data when available, otherwise daily averaged FEM data is included

** Higher concentrations in 2015 were measured in the Basin and Coachella Valley that were related to high-wind events and have been flagged for exclusion from NAAQS comparison in accordance with the U.S. EPA Exceptional Events Rule; U.S. EPA concurrence is required for exclusion of exceptional events after submittal of supporting documentation

155 µg/m^3 is needed to exceed the level of the PM10 NAAQS

The State 24-hour Expected Peak Day Concentration (EPDC) is a calculated 3-year value after accounting for statistical outliers; the State 24-hour Designation Value is the highest concentration at or below the EPDC over the 3-year period; State data may include exceptional events; State PM10 24-hour average designation value includes FRM and BAM FEM data, but not TEOM FEM instruments since the TEOM is not a California Approved Sampler (CAS) for standard compliance (most notably, SCAQMD uses TEOM instruments to supplement FEM measurements in the Coachella Valley)

The 2015 maximum annual average PM10 is summarized by basin and county in Table 2-11, along with the design values and state designation values. In 2015, the revoked annual average PM10 NAAQS (50 µg/m^3) was not exceeded in the Basin, with a maximum annual average PM10 concentration of 48.8 µg/m^3 in the Metropolitan Riverside County area at the Mira Loma station. The 3-year annual average for 2013–2015 however, exceeded the former NAAQS, with 51.8 µg/m^3 at Mira Loma. No other stations in the Basin or the Coachella Valley exceeded the former federal annual PM10 standard or the 2013–2015 annual average in

[27] After exclusion of flagged exceptional events, the Coachella Valley calculated design value is 152 µg/m^3, which rounds to 150 µg/m^3 per rounding requirements for comparison to the 24-hour PM10 NAAQS of 150 µg/m^3. This is equal to, but not exceeding the NAAQS.

2015. The much more stringent State annual PM10 standard (20 µg/m^3) was exceeded at most stations in each county in the Basin and in the Coachella Valley. The State standard was exceeded most frequently in the Basin's inland valleys, centered on Metropolitan Riverside County.

TABLE 2-11
2015 Maximum Annual Average PM10 Concentrations and 2013–2015 Design Values
by Basin and County

Basin/County	2015 Maximum Annual PM10 Average (µg/m^3)*	2013–2015 Annual PM10 Averages** (µg/m^3)	2013–2015 Percent of Former Annual PM10 NAAQS** (50 µg/m^3)	Area of Design Value Max	2013–2015 3-Yr. High State Annual Average PM10 Designation Value (µg/m^3)#	2013–2015 Percent of State PM10 Standard (20 µg/m^3)
South Coast Air Basin						
Los Angeles	37.1	38.0	76	East San Gabriel Valley	43	215
Orange	24.8	26.1	52	Central Orange County	27	135
Riverside	**48.8**	**51.8**	**104**	**Metropolitan Riverside County**	**45**	**225**
San Bernardino	37.8	39.4	79	Central San Bernardino Valley	39	195
Salton Sea Air Basin						
Riverside	36.5	37.2	74	Coachella Valley (Indio)	**45**	**225**

* Based on the FRM data when available, otherwise FEM data is used

** The federal annual PM10 standard was revoked in 2006

\# State data may include exceptional events; State PM10 annual average designation value includes FRM and BAM FEM data, but not TEOM FEM instruments since the TEOM is not a California Approved Sampler (CAS) for standard compliance (most notably, SCAQMD uses TEOM instruments to supplement FEM measurements in the Coachella Valley); State annual designation value is the highest year in the 3-year period

For each routine SCAQMD FRM ambient monitor, the annual arithmetic mean, percent of sampling days exceeding State and federal standards, and annual maximum 24-hour average PM10 concentrations are shown in Tables A-17 to A-19 in the attachment for the years 1995–2015. Please refer to Appendix II from the 2003 AQMP for the 1976–1989 prior-year statistics and to Appendix II from the 2007 AQMP for 1990–2005 data.

PM10 Spatial Variation

Figure 2-36 shows the contour map of the annual average (arithmetic mean) PM10 concentrations distribution in the Basin in 2015. The highest annual average PM10 concentration was recorded in the Metropolitan Riverside County area at the Mira Loma station with an annual averaged concentration of 48.8 µg/m^3, which did not exceed the revoked annual average PM10 NAAQS (50 µg/m^3). The areas with the highest annual average PM10 concentrations were generally recorded in and around the Metropolitan Riverside County area and in the San Bernardino Valley areas, as shown in Figure 2-36. Much of eastern Los Angeles County also saw elevated annual PM10, but still below the former NAAQS. The much more stringent State annual PM10 standard (20 µg/m^3) was exceeded in most stations in each county in the Basin and in the Coachella Valley.

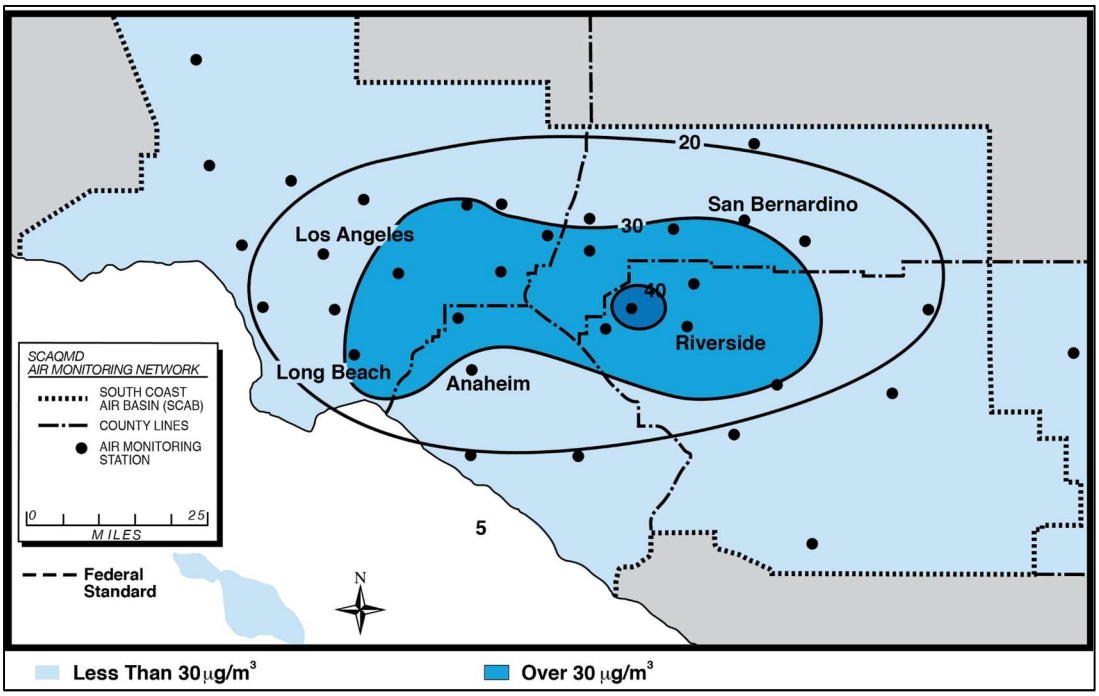

FIGURE 2-36

Annual Arithmetic Mean PM10 Particulate Matter (µg/m^3) in 2015

PM10 Trends

Figure 2-37 shows the trend for the period between 1995 and 2015 of the 3-year design value form of the 24-hour federal PM10 standard for the Basin (i.e., the fourth highest 24-hour average PM10 concentration in three years). The Basin's annual maximum 24-hour average concentration has remained below the federal PM10 standard (150 µg/m^3) since 2003, and U.S EPA finalized a clean data finding and attainment redesignation in 2013. Also shown is the trend for the design value form of the revoked annual federal PM10 standard (50 µg/m^3), that is, the 3-year average of the annual arithmetic mean concentrations. The Basin's annual average concentration had been reduced below the level of the revoked federal annual PM10 standard in 2011 and 2012, but was slightly over that standard at one location (Mira Loma) in the 2013, 2014, and 2015.

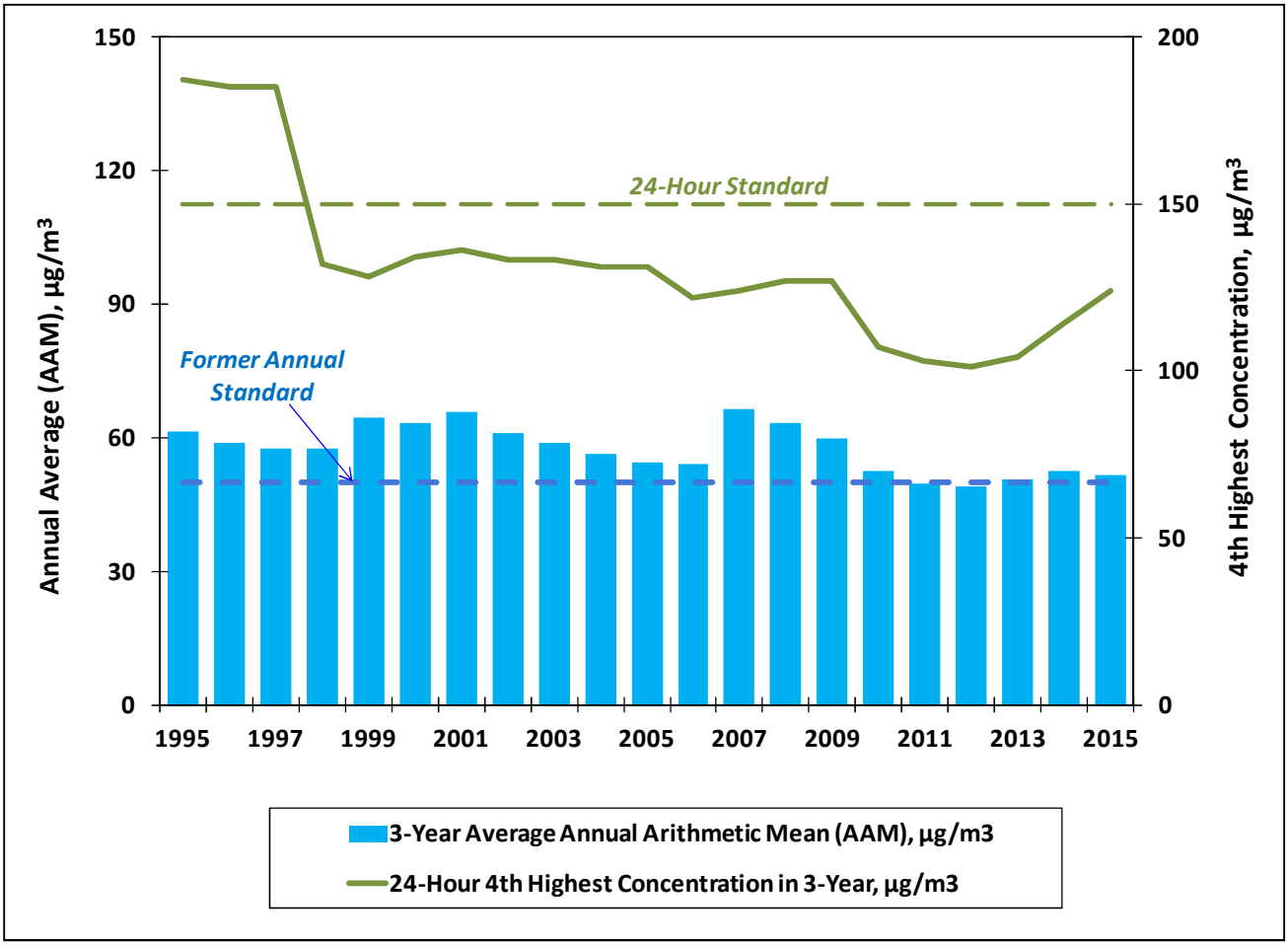

FIGURE 2-37

PM10 Particulate Matter Design Value Trend

(1995 through 2015 data, 3-Year Average of Annual Arithmetic Mean and 4th Highest 24-Hour PM10 Concentration in 3 Years, µg/m³)

PM10 Temporal Variation

Exceedances of the 24-hour PM10 federal standard in the Basin have become increasingly rare in recent years. In fact, the only exceedances in the Basin for the past decade have been associated with exceptional events, such as high-wind natural events or cultural events (Independence Day fireworks). As a consequence, variations in exceedances of the State 24-hour PM10 standard are considered here for the seasonal and day-of-week patterns in the Basin, using the FRM and FEM PM10 measurements combined.

Figure 2-38 shows the number of days in each month exceeding the State standard at one or more Basin locations in 2013–2015. Overall, the greatest number of exceedances of the State standard occurred in the summer months. This is consistent with previous analyses of seasonal variations in PM10 showing that the monthly average PM10 concentrations and the monthly average number of days exceeding the State standard tend to peak in summer and fall in the inland valley areas of the Basin where PM10 concentrations are highest. Higher summertime PM10 concentrations can be attributed to elevated wind speeds and lower relative humidity that both enhance wind induced re-suspended particles. Due to the higher number of exceedances in the inland valleys, the pattern for the Basin is more similar to those for individual sites in the inland valley areas. However, in the South Coastal Los Angeles County area (Long Beach), monthly average PM10

concentrations and the average number of days exceeding the State standard show different monthly trends with highest concentrations recorded in the late fall and winter months.

Figure 2-39 shows the monthly average concentration for stations in two areas, Metropolitan Riverside County (Riverside-Rubidoux) and Southwest Coastal Los Angeles County (LAX) with different seasonal characteristics. As was found in the previous analyses, PM10 concentrations tend to be higher in the summer and fall months in the inland valley areas, but higher in the late fall and winter months in the coastal areas. Most of the coastal high values occur at that time due to windblown dust from the strong, offshore Santa Ana winds that occur in the fall and winter. Moreover, higher port activity due to peak cargo traffic which typically occurs in the fall of each year coupled with the lower mixing height in the fall may also contribute to the higher PM10 concentrations during this time of year.

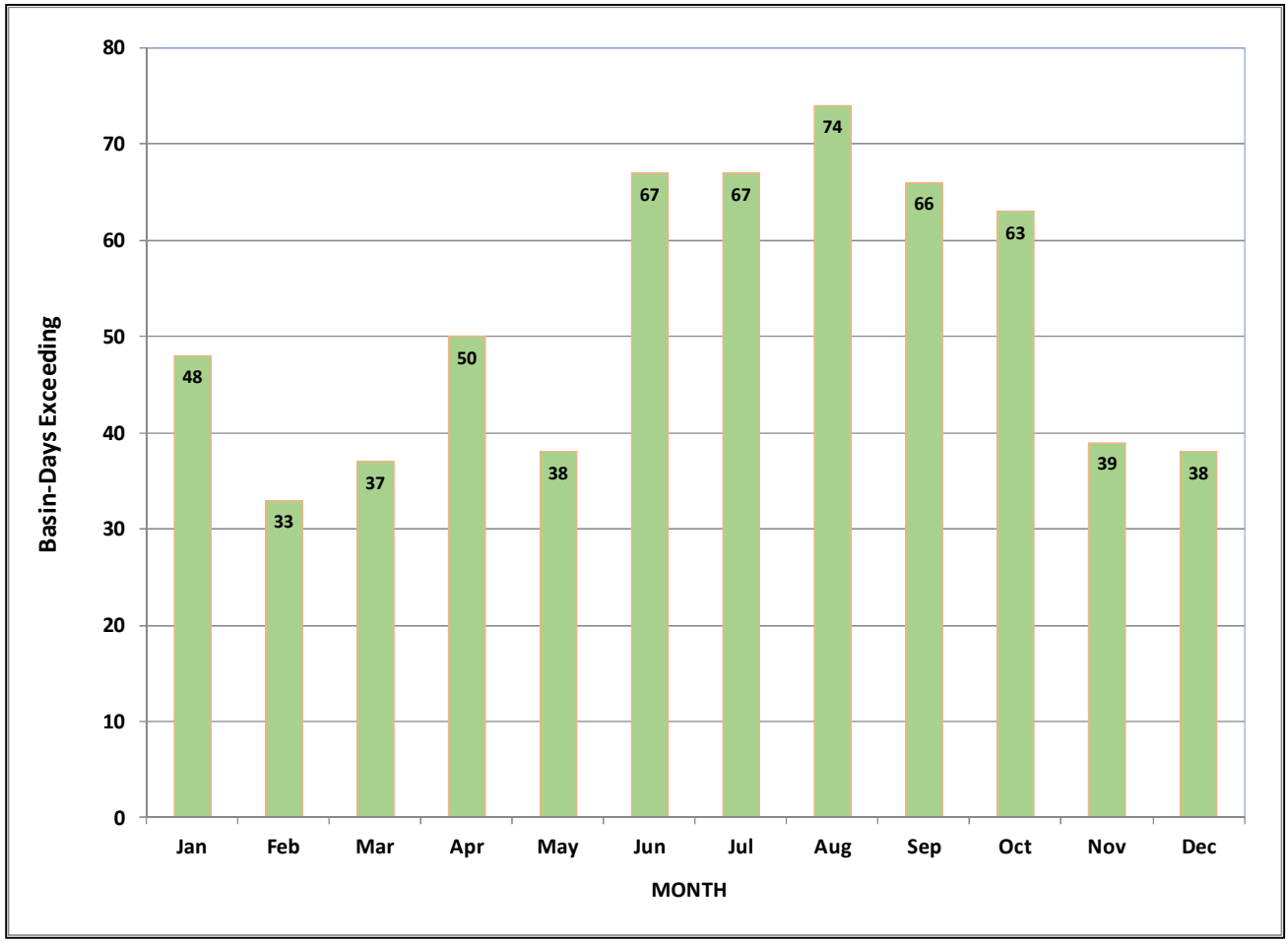

FIGURE 2-38

Basin-Days Exceeding the State PM10 Standard (50 µg/m^3) by Month, 2013–2015

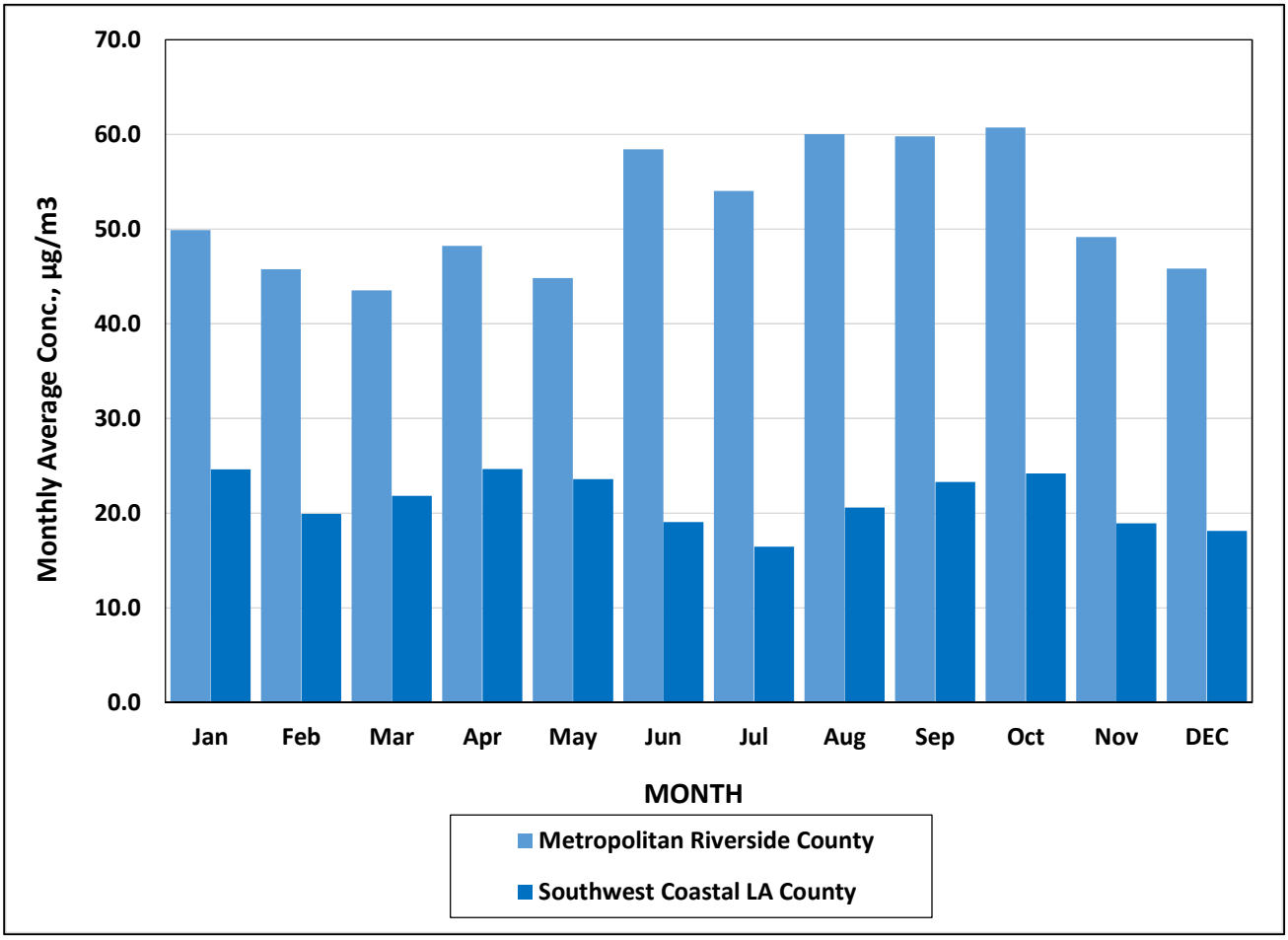

FIGURE 2-39

PM10 Monthly Average Concentration (µg/m^3), 2013–2015

Figure 2-40 shows averaged hourly PM10 concentrations for each hour of the day throughout 2015, including the entire Basin and averaged for select monitoring stations in each of the counties in the Basin. On average and for the Basin, PM10 concentrations show a peak between 0600 and 0900 PST during the morning rush-hour traffic, and as the day progresses and temperature increases, causing the temperature inversion base to rise and vertical mixing to increase, resulting in a decrease in PM10 concentrations between 1000 and 1600 PST. The morning peak is followed by the secondary PM10 peak associated with the evening rush hour traffic.

The diurnal variations in the PM10 concentrations can vary from one location to another, as well as seasonally. Since PM10 concentration are generally higher in the inland valleys, the diurnal trend for the Basin is more similar to those for individual sites in the inland valley areas. The Central Los Angeles site shows a different diurnal pattern, with concentrations remaining high between the morning and evening rush hour traffic. This site is located in downtown Los Angeles and in proximity to a network of major roadways and freeways, with persistent traffic throughout the day.

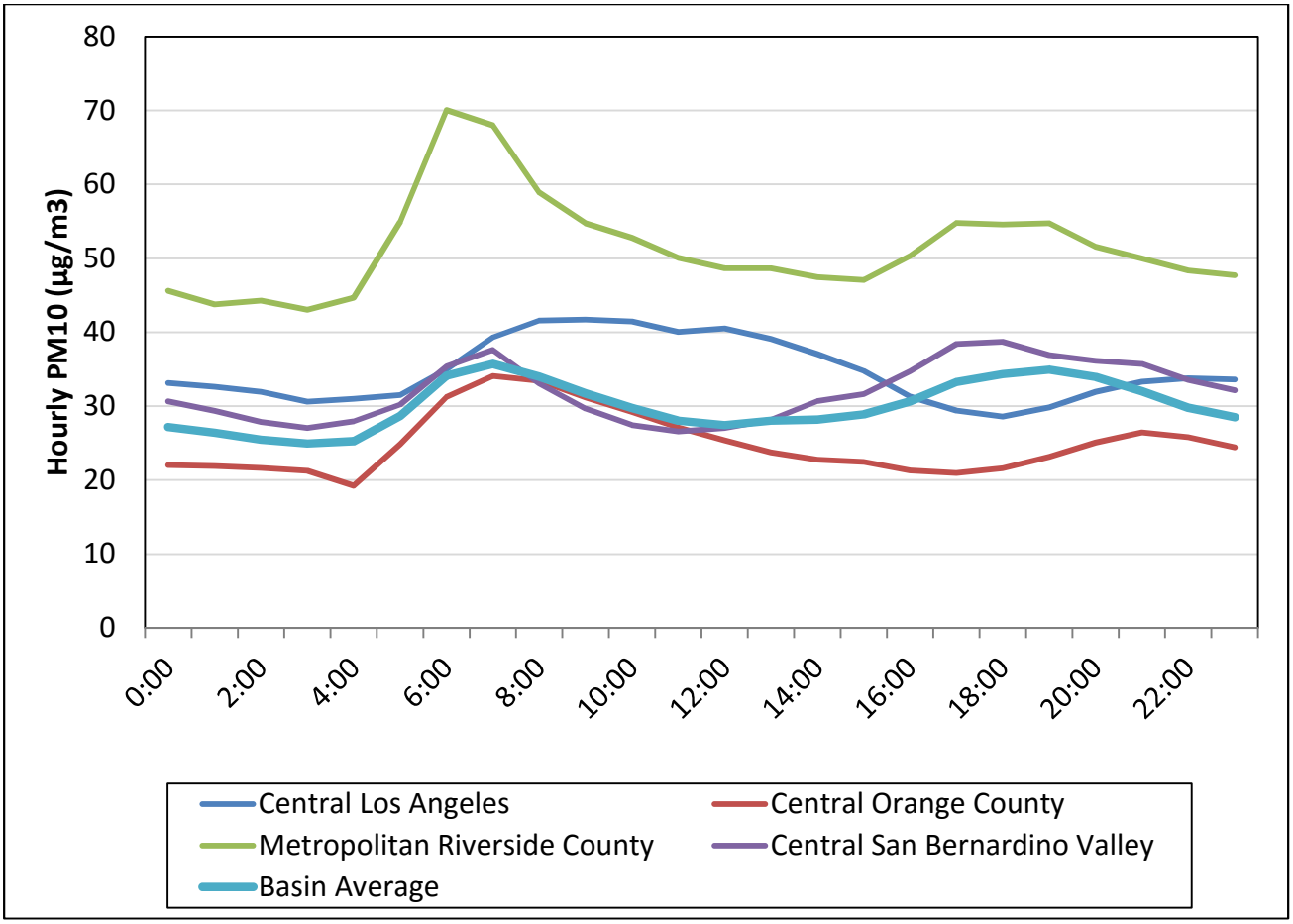

FIGURE 2-40

PM10 Diurnal Variation, 2015

(annual averaged FEM Hourly PM10 concentrations, by hour of the day; time in Pacific Standard Time)

Carbon Monoxide (CO)

CO Air Quality

In 2015, ambient CO concentrations were monitored at 25 locations throughout the SCAQMD jurisdiction, including one station in the Coachella Valley and two near-road monitors. The Burbank station in the East San Fernando Valley was closed during 2014, with relocation pending. The Riverside-Magnolia station in Metropolitan Riverside area was closed at the beginning of 2015. Relocation of that site is not planned, since nearby sites provide adequate coverage in that area. Figure 2-41 shows the routine ambient CO monitoring sites in the SCAQMD jurisdiction.

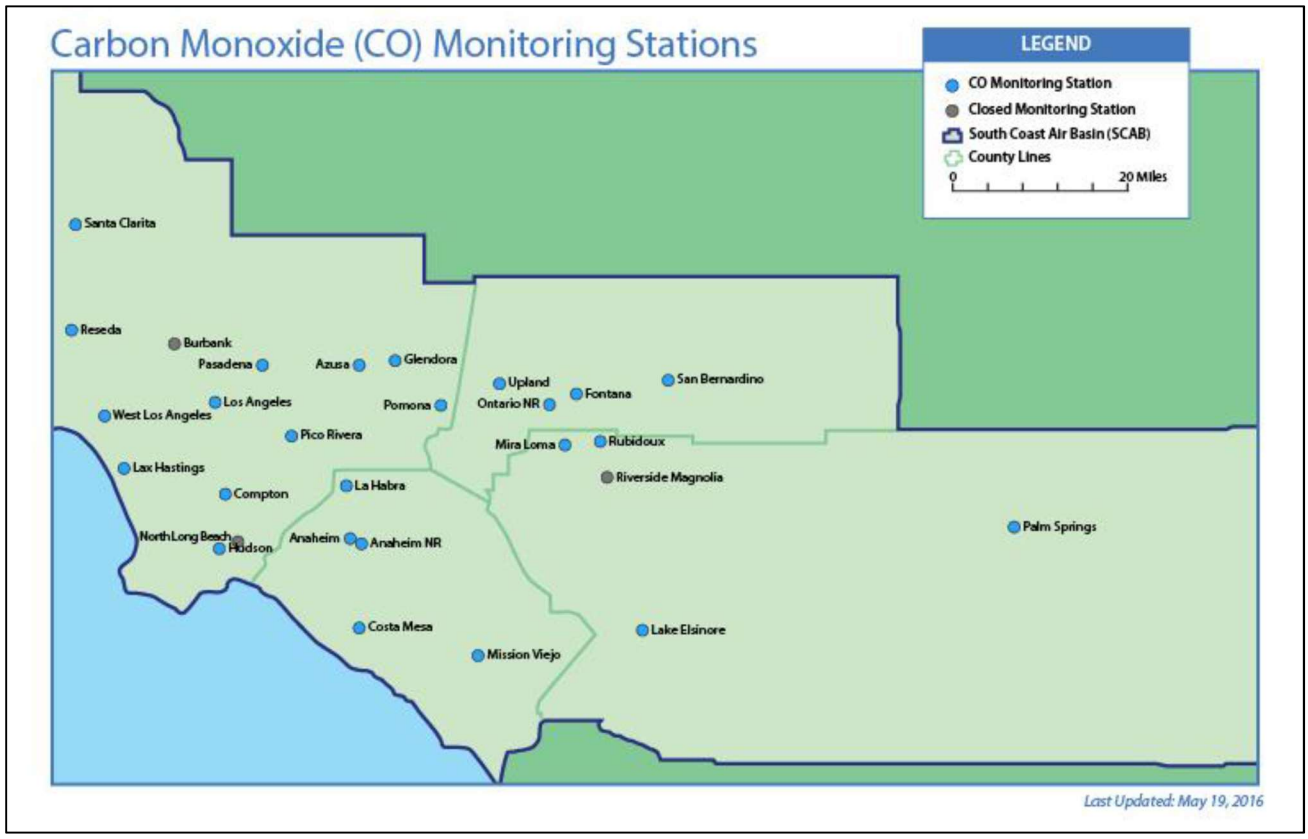

FIGURE 2-41

South Coast Air Quality Management District Carbon Monoxide Air Monitoring Locations

[Note that CO stations that were closed at N. Long Beach in 2013, Burbank in 2014, and Riverside-Magnolia in 2015 mapped with grey dots; near-road stations on the I-10 (labelled Ontario NR) and the I-5 (Anaheim NR) are shown]

Tables 2-12 and 2-13 summarize the 2015 1-hour and 8-hour average CO maximum concentrations and 2015 design values by air basin and county. In 2015, no areas exceeded the CO air quality standards, including the near-road stations. The highest ambient station concentrations of CO continued to be recorded in the areas of Los Angeles County, where vehicular traffic is dense and weak nighttime drainage flows transport CO from surrounding areas under relatively stagnant conditions. The Basin's 1-hour and 8-hour CO maximum concentrations (4.4 ppm and 3.3 ppm, respectively) and design values (4.3 ppm and 3.0 ppm, respectively)

were both recorded in the South Central Los Angeles County area. The new near-road monitors in Orange and San Bernardino counties did not increase the Basin's maximum CO values or design values in 2015 over that from Los Angeles County, although the near-road concentrations were often higher than the nearest ambient stations.

All areas of the Basin have continued to remain below the federal standard level since 2003. U.S. EPA redesignated the Basin to attainment of the federal CO standards, effective June 11, 2007. There have also been no exceedances of the Stage 1 episode (federal alert) level (8-hour average CO greater ≥ 15 ppm) since 1997. The CO concentrations are also well below the State standards.

The annual maximum 8-hour CO concentrations at all routine SCAQMD ambient air monitoring stations are shown in Table A-20 in the attachment to this appendix, for the period 1995–2015. Please refer to Appendix II from the 2003 AQMP for the 1976–1989 prior-year statistics and to Appendix II from the 2007 AQMP for 1990–2005 data.

TABLE 2-12

2015 Maximum 1-Hour CO Concentrations and 2015 Design Values by Basin and County

Basin/County	2015 Maximum 1-Hour CO Average (ppm)	2015 1-Hour CO Design Value* (ppm)	Percent of 1-Hour CO NAAQS (35 ppm)	Area of Design Value Max	Percent of 1-Hour CO State Standard (20 ppm)
South Coast Air Basin					
Los Angeles	**4.4**	**4.3**	**11**	**South Central L.A. County**	**22**
Orange	3.1 *(3.1 at I-5 N.R.)*	2.9 *(2.9 at I-5 N.R.)*	8 *(8)*	North Orange County	15 *(15)*
Riverside	2.5	2.2	6	Metropolitan Riverside County	11
San Bernardino	2.8 *(2.7 at I-10 N.R.)*	2.2 *(2.7 at I-10 N.R.)***	6 *(8)*	Central San Bernardino Valley	11 *(14)*
Salton Sea Air Basin					
Riverside	2.0	1.9	5	Coachella Valley	10

Bold text denotes Basin maximum; I-5 and I-10 near-road monitors are shown in parenthesis

* The 1-hour CO design value is the 2nd highest 1-hour average concentration at a station in a single year

** The 2015 1-hour CO design value maximum in San Bernardino County was at the I-10 near-road station

TABLE 2-13

2015 Maximum 8-Hour CO Concentrations and 2015 Design Values by Basin and County

Basin/County	2015 Maximum 8-Hour CO Average (ppm)	2015 8-Hour CO Design Value* (ppm)	Percent of 8-Hour CO NAAQS (9 ppm)	Area of Design Value Max	Percent of 8-Hour CO State Standard (9.0 ppm)
South Coast Air Basin					
Los Angeles	**3.3**	**3.0**	**33**	**South Central L.A. County**	**33**
Orange	2.2 *(2.3 at I-5 N.R.)*	2.0 *(2.3 at I-5 N.R.)*	22 *(26)*	Central Orange County	22 *(26)*
Riverside	1.7	1.5	17	Metropolitan Riverside County	17
San Bernardino	1.8 *(2.6 at I-10 N.R.)*	1.8 *(2.5 at I-10 N.R.)*	20 *(28)*	Central San Bernardino Valley	20 *(28)*
Salton Sea Air Basin					
Riverside	0.7	0.5	6	Coachella Valley	6

Bold text denotes Basin maximum; I-5 and I-10 near-road monitors are shown in parenthesis

* The 8-hour CO design value is the 2nd highest 8-hour average concentration at a station in a single year

Near-Road CO

On August 12, 2011 U.S. EPA issued a decision to retain the existing NAAQS for CO, determining that those standards provided the required level of public health protection. However, U.S. EPA added a monitoring requirement for near-road CO monitors in urban areas with population of 1 million or more, utilizing stations that would be implemented to meet the 2010 NO2 near-road monitoring requirements. The two new CO monitors are at the I-5 Near-Road site, located in Orange County near Anaheim, and the I-10 Near-Road site, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga and Fontana.

The near-road CO measurements began at these two locations in late December 2014. From that time to the end of 2015, the data shows that while the near-road measurements were often higher than the nearest ambient monitors, as would be expected in the near-road environment, they did not exceed the levels of the 1-hour or 8-hour CO NAAQS. Tables 2-14 and 2-15 compare the available near-road measurements for annual peak 1-hour and 8-hour CO, respectively, to the comparable measurements from the nearby ambient stations at Anaheim and Fontana. The form of the CO standard is that the peak concentration is not to be exceeded more than once per year. The tables include the design value, which is the second highest CO concentration in a single year.

The 2015 near-road peak 1-hour CO concentration measured was 3.1 ppm, measured at the I-5 Near-Road site, while the peak 8-hour CO concentration was 2.6 ppm at the I-10 Near-Road site, both well below the respective NAAQS levels (35 ppm and 9 ppm, respectively). The 2015 near-road CO design values were higher than that of the nearest ambient stations for both federal standards. Based on this limited period of data, it appears that the near-road CO design values will be very unlikely to affect the Basin's attainment status for the State and federal CO standards.

TABLE 2-14

2014 and 2015 Maximum and Second Highest 1-Hour CO Concentrations at South Coast Air Basin Near-Road Sites and Nearby Ambient Stations

Near-Road CO						Nearby Ambient CO				
		Peak 1-Hour CO (ppm)		2nd Max. 1-Hour CO (ppm)			Peak 1-Hour CO (ppm)		2nd Max. 1-Hour CO (ppm)	
Near-Road Station	**Start Date**	**2014**	**2015**	**2014**	**2015**	**Ambient Station**	**2014**	**2015**	**2014**	**2015**
I-5 N. R. (at Vernon St., Orange County)	12/18/2014	N/A	3.1	N/A	**2.9**	**Anaheim**	3.1	3.1	2.6	2.6
I-10 N. R. (at Etiwanda Av., San Bernardino County)	12/23/2014	N/A	2.7	N/A	**2.7**	**Fontana**	2.6	**2.8**	2.2	2.2

Bold text denotes maximum concentration between near-road and nearby ambient stations

N/A = complete data was not available for valid calculation

The 1-hour CO NAAQS is 35 ppm, not to be exceeded more than once at a station in a single year

TABLE 2-15

2014 and 2015 Maximum and Second Highest 8-Hour CO Concentrations at South Coast Air Basin Near-Road Sites and Nearby Ambient Stations

Near-Road CO						Nearby Ambient CO				
		Peak 8-Hour CO (ppm)		2nd Max. 8-Hour CO (ppm)			Peak 8-Hour CO (ppm)		2nd Max. 8-Hour CO (ppm)	
Near-Road Station	**Start Date**	**2014**	**2015**	**2014**	**2015**	**Ambient Station**	**2014**	**2015**	**2014**	**2015**
I-5 N. R. (at Vernon St., Orange County)	12/18/2014	N/A	**2.3**	N/A	**2.3**	**Anaheim**	2.1	2.2	2.1	2.0
I-10 N. R. (at Etiwanda Av., San Bernardino County)	12/23/2014	N/A	**2.6**	N/A	**2.5**	**Fontana**	1.2	1.2	1.1	1.1

Bold text maximum concentration between near-road and nearby ambient stations

N/A = complete data was not available for valid calculation

The 8-hour CO NAAQS is 9 ppm, not to be exceeded more than once at a station in a single year

Nitrogen Dioxide (NO_2)

NO_2 Air Quality

In 2015, ambient NO_2 concentrations were monitored at 27 locations throughout the SCAQMD jurisdiction, including one station in the Coachella Valley and four near-road monitoring stations. The Burbank station in the East San Fernando Valley was closed during 2014, with relocation pending. The Riverside-Magnolia station in Metropolitan Riverside area was closed at the beginning of 2015. Relocation of that site is not planned, since nearby sites provide adequate coverage in that area. Figure 2-42 shows the routine ambient NO_2 monitoring sites in the SCAQMD jurisdiction.

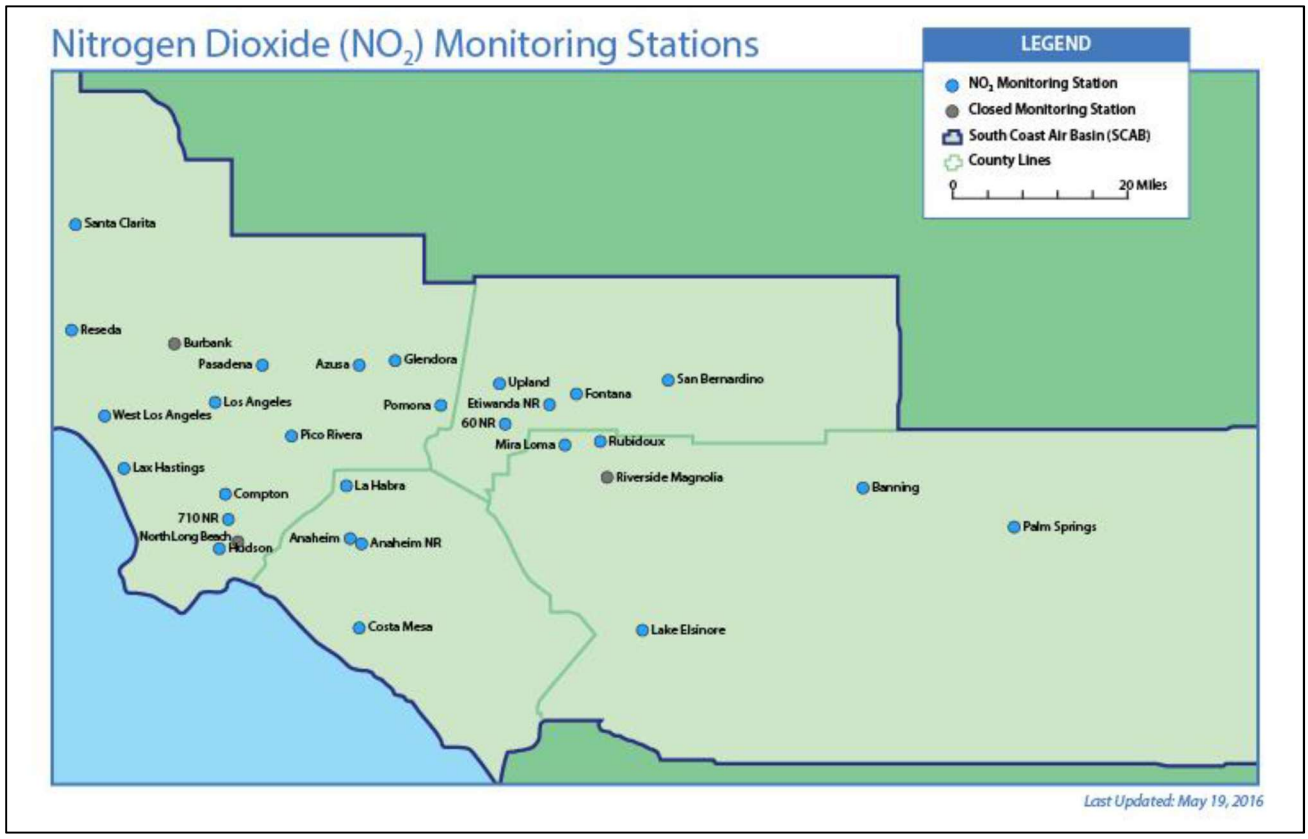

FIGURE 2-42

South Coast Air Quality Management District Nitrogen Dioxide Air Monitoring Locations

[Note that NO_2 stations that were closed at N. Long Beach in 2013, Burbank in 2014, and Riverside-Magnolia in 2015 are mapped with grey dots; near-road stations on the I-710 (710NR), CA-60 (60NR), I-5 (Anaheim NR), and I-10 (Etiwanda NR) are shown]

The current 1-hour average NO_2 NAAQS (100 ppb) was exceeded on one day in 2015 in the South Coastal Los Angeles County area at the Long Beach-Hudson air monitoring station (a location close to periodic diesel truck and bus activity). However, the 98th percentile form of the 1-hour NAAQS was not exceeded and the 2013–2015 design value is not in violation of the NAAQS. The higher relative concentrations in the Los Angeles area are indicative of the concentrated emission sources, especially motor vehicles. Although the Basin is in

attainment of the State and federal standards, NO_2 is still of concern, since oxides of nitrogen (NOx) are precursors to both ozone and particulate matter. Further control of NO_x will be required to attain the ozone and particulate standards.

The Basin has not exceeded the federal annual standard for NO_2 (0.053 ppm or 53 ppb) since 1991, when the Los Angeles County portion of the Basin recorded the last violation of that standard in the U.S. No State NO_2 standards were exceeded in 2015. Tables 2-16 and 2-17 summarize the 2015 ambient station maximum 1-hour and annual average concentrations of NO_2 by air basin and county, in comparison to federal and State standards. These tables do not include the new near-road stations, since the period of record is not yet sufficient to calculate the 3-year NO_2 design values. The near-road NO2 data is summarized further below.

TABLE 2-16

2015 Maximum 1-Hour NO_2 Concentrations and 2013–2015 Design Values by Basin and County

Basin/County	2015 Maximum 1-Hour NO_2 Average (ppb)	2013–2015 1-Hour NO_2 Design Value (ppb)	Design Value Percent of 1-Hour NO_2 NAAQS (100 ppb)	Area of Design Value Max	2013–2015 1-Hour NO_2 State Designation Value (ppm)	Percent of 1-Hour NO_2 State Standard (0.18 ppm)
South Coast Air Basin						
Los Angeles	**101.8***	**74**	**74**	**South Coastal LA Co.**	**0.14**	**78**
Orange	59.1	58	58	Central Orange County	0.09	50
Riverside	68.1	54	54	Metropolitan Riverside County	0.07	39
San Bernardino	89.1	64	64	Central San Bernardino Valley	0.09	50
Salton Sea Air Basin						
Riverside	41.5	39	39	Coachella Valley	0.05	28

Bold text denotes the peak value

Table does not include near-road stations since data period is insufficient for 3-year design value calculation (see near-road NO_2 discussion below)

The 1-hour NO_2 design value is the annual 98th percentile daily maximum 1-hour concentration, averaged over 3 years at a station

* Although the maximum 1-hour concentration exceeded the standard on 1 day, the 98th percentile form of the design value did not violate the NAAQS

TABLE 2-17
2015 Maximum Annual Average NO_2 Concentrations and 2013–2015 Design Values by Basin and County

Basin/County	2015 Maximum Annual NO_2 Average (ppm)	2013–2015 Annual NO_2 Design Value (ppm)	Percent of Annual NO_2 NAAQS (0.053 ppm)	Area of Design Value Max	2013–2015 Annual State NO_2 Designation Value# (ppm)	Percent of Annual State NO_2 Standard (0.030 ppm)
South Coast Air Basin						
Los Angeles	**0.0222**	**0.022**	**42**	**Central Los Angeles County**	**0.023**	**77**
Orange	0.0150	0.016	30	Central Orange County	0.018	60
Riverside	0.0144	0.016	30	Metropolitan Riverside County	0.017	57
San Bernardino	0.0187	0.020	38	Central San Bernardino Valley	0.021	70
Salton Sea Air Basin						
Riverside	0.0062	0.007	13	Coachella Valley	0.008	27

Bold text denotes the peak value
The annual NO_2 design value is the annual average of the quarterly averages, averaged over 3 years at a station
This table does not include near-road stations since data period is insufficient for 3-year design value calculation (see near-road NO_2 discussion below)

The annual average and annual maximum 1-hour average NO_2 concentrations, for each monitoring station in the SCAQMD jurisdiction for the years 1995–2015, are shown in Tables A-21 and A-22, respectively, in the attachment to this appendix. Please refer to Appendix II from the 2003 AQMP for the 1976–1989 prior-year statistics and to Appendix II from the 2007 AQMP for 1990–2005 data.

Near-Road NO_2

With the revised NO_2 NAAQS in 2010, near-road NO_2 measurements were required to be phased in for larger cities. The four near-road monitoring stations are: (1) I-5 Near-Road, located in Orange County near Anaheim; (2) I-710 Near-Road, located at Long Beach Blvd. in Los Angeles County near Compton and Long Beach; (3) CA-60 Near-Road, located west of Vineyard Avenue near the San Bernardino/Riverside County border near Ontario, Mira Loma and Upland; and (4) I-10 Near-Road, located near Etiwanda Avenue in San Bernardino County near Ontario, Rancho Cucamonga and Fontana.

The longest operating near-road station in the Basin, adjacent to I-5 in Orange County, has not exceeded the level of the 1-hour NO_2 NAAQS (100 ppb) since the measurements began on January 1, 2014. The peak 1-hour NO_2 concentration at that site in 2014 was 78.8 ppb and the peak concentration for 2015 was 70.2 ppb. This can be compared to the annual peak values measured at the nearest ambient monitoring station in Central Orange County (Anaheim station), where the 2014 and 2015 peaks were 75.8 and 59.1, respectively. In terms of the design value form of the NAAQS, the 98th percentile daily maximum 1-hour concentrations at the Anaheim near-road site were 66.0 ppb and 61.4 ppb, respectively, for 2014 and 2015, compared to 59.8 ppb and 54.6 ppb from the Anaheim ambient monitoring station. The annual average NO_2 NAAQS (0.053 ppm, or 53 ppb) was also not exceeded. Thus, while the Anaheim near-road NO_2 measurements are higher

than the ambient Orange County measurements, as would be expected close to traffic emissions sources, it does not appear that NO_2 design values will violate the NAAQS or CAAQS at this location.

Likewise, the shorter period of data available from the remaining three near-road stations indicates that these locations will also likely measure higher NO_2 than the nearest ambient stations, but they have not exceeded the level of the 1-hour or annual NO_2 NAAQS or CAAQS through the end of 2015. Tables 2-18 and 2-19 compare the available near-road NO_2 measurements for peak 1-hour and annual average NO_2, respectively, to the nearest ambient measurements. The 98th percentile concentration is included for comparison to the design value form of the 1-hour NO_2 NAAQS of 100 ppb. Based on this limited period of data, it appears that the near-road NO_2 measurements will be unlikely to affect the Basin's attainment status for the State and federal NO_2 standards.

TABLE 2-18

2014 and 2015 Maximum and 98th Percentile 1-Hour NO_2 Concentrations at South Coast Air Basin Near-Road Sites and Nearby Ambient Stations

Near-Road NO_2						Nearby Ambient NO_2				
		Annual Peak 1-Hour NO_2 (ppb)		98th Percentile 1-Hour NO_2 (ppb)			Annual Peak 1-Hour NO_2 (ppb)		98th Percentile 1-Hour NO_2 (ppb)	
Near-Road Station	**Start Date**	**2014**	**2015***	**2014**	**2015***	**Ambient Station**	**2014**	**2015**	**2014**	**2015**
I-5 N. R. (at Vernon St., Orange County)	1/1/2014	**78.8**	**70.2**	**66.0**	**61.4**	**Anaheim**	75.8	59.1	59.8	54.6
I-10 N. R. (at Long Beach Bl., Los Angeles County)	2/18/2015	N/A	**94.7**	N/A	**74.8**	**Compton**	68.2	73.6	59.2	58.7
CA-60 N. R. (West of Vineyard Av., San Bernardino/Riverside County)	7/9/2015	N/A	**79.2**	N/A	**77.2**	**Upland**	74.1	71.6	56.7	55.7
I-10 N. R. (at Etiwanda Av., San Bernardino County)	10/8/2014	**93.0**	87.2	**69.5**	**73.0**	**Fontana**	70.4	**89.1**	63.6	66.1

Bold text denotes maximum concentration between near-road and nearby ambient stations

N/A = complete data was not available for valid calculation

* 2015 NO_2 data is incomplete for I-710 and CA-60 Near-Road Sites

The 1-hour NO_2 NAAQS is 100 ppb

TABLE 2-19

2014 and 2015 Annual NO_2 Concentrations at South Coast Air Basin Near-Road Sites and Nearby Ambient Stations

Near-Road NO_2				Nearby Ambient NO_2		
		Annual Average NO_2 (ppb)			Annual Average NO_2 (ppb)	
Near-Road Station	**Start Date**	**2014**	**2015**	**Ambient Station**	**2014**	**2015**
I-5 N. R. (at Vernon St., Orange County)	1/1/2014	**27.2**	**25.4**	**Anaheim**	15.2	14.6
I-710 N. R. (at Long Beach Bl., Los Angeles County)	2/18/2015	N/A	**23.9**	**Compton**	15.6	16.9
CA-60 N. R. (West of Vineyard Av., San Bernardino/Riverside County)	7/9/2015	N/A	N/A	**Upland**	16.6	15.9
I-10 N. R. (at Etiwanda Av., San Bernardino County)	10/8/2014	N/A	**29.8**	**Fontana**	20.2	18.7

Bold text denotes maximum concentration between near-road and nearby ambient stations

N/A = complete data was not available for valid calculation

* 2015 is incomplete for I-710 and CA-60 Near-Road Sites

The annual average NO_2 NAAQS is 0.053 ppm, or 53 ppb

Sulfur Dioxide (SO_2)

SO_2 Air Quality

In 2015, ambient sulfur dioxide was measured at six Basin locations. The Burbank station was closed in 2014, pending relocation to a new location. Figure 2-43 shows the routine ambient SO_2 monitoring sites in the SCAQMD jurisdiction.

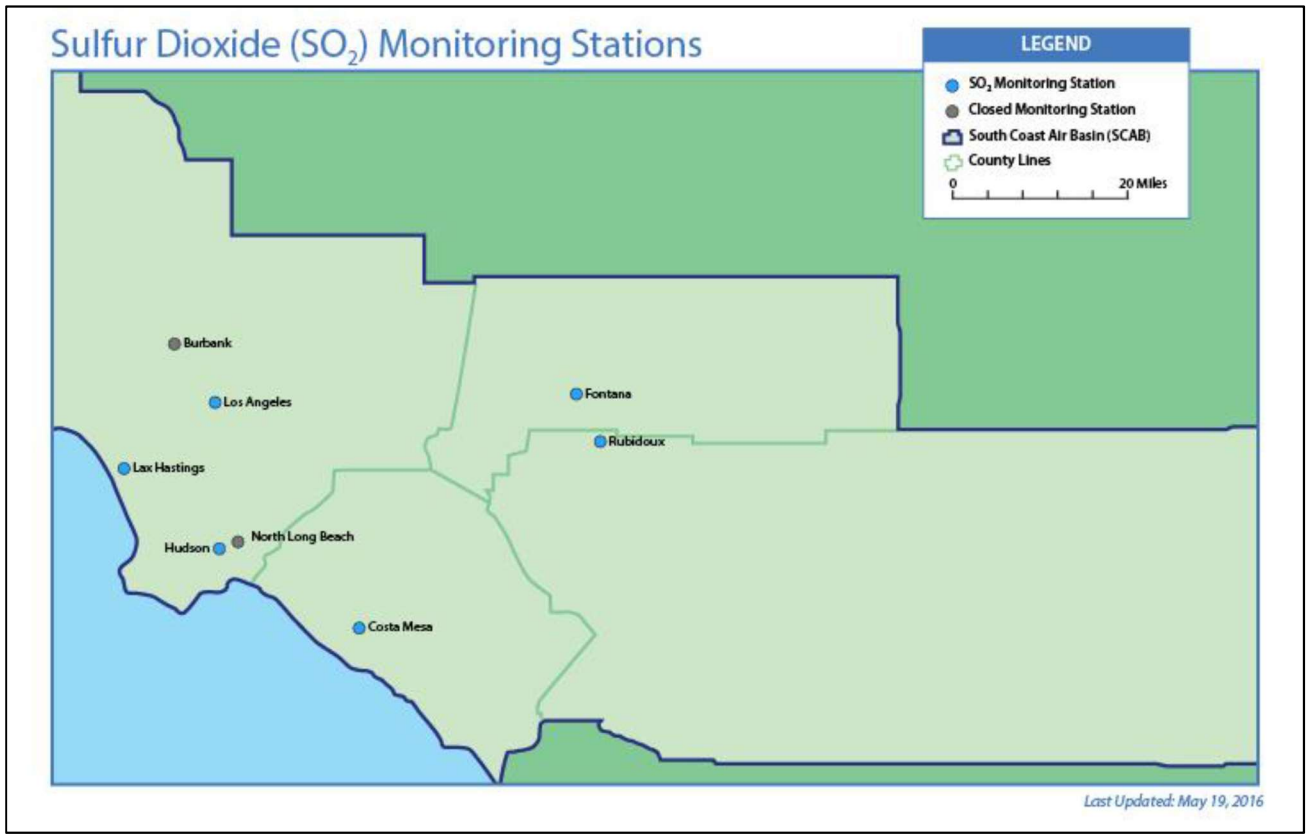

FIGURE 2-43

South Coast Air Quality Management District Sulfur Dioxide Air Monitoring Locations

(Note that SO_2 stations that were closed at N. Long Beach in 2013 and Burbank in 2014 are mapped with grey dots)

Based on the review of the SO_2 standards, U.S. EPA established the 1-hour SO_2 standard to protect the public health against short-term exposure. The level of the 1-hour average standard was set at 75 ppb, effective August 2, 2010, revoking the former annual (0.03 ppm) and 24-hour (0.14 ppm) federal standards. No violations have occurred of the current federal 1-hour standards, the former federal annual or 24-hour standards, or the State standards (0.25 ppm, 1-hour or 0.04 ppm, 24-hour) in 2015, or in recent years, in the Basin. The annual and 24-hour federal standards were last exceeded in the 1960's and the State standards were last exceeded in 1990. Though sulfur dioxide concentrations remain well below the standards, sulfur dioxide is a precursor to sulfate, which is a component of fine particulate matter. Tables 2-20 and 2-21 summarize the 2015 maximum and design value 1-hour and 24-hour average SO_2 concentrations, respectively, by county. The annual maximum 1-hour average SO_2 concentrations for each monitoring station in the SCAQMD jurisdiction are shown in Table A-23 in the attachment, for the years 1995–2015.

TABLE 2-20

2015 Maximum 1-Hour SO_2 Concentrations and 2013–2015 Design Values by Basin and County

Basin/County	2015 Maximum 1-Hour SO_2 Average (ppb)	2013–2015 1-Hour SO_2 Design Value (ppb)	Percent of 1-Hour SO_2 NAAQS (75 ppb)	Area of Design Value Max	Percent of 1-Hour SO_2 State Standard (0.25 ppm or 250 ppb)
South Coast Air Basin					
Los Angeles	**37.5**	**11**	**15**	**South Coastal LA County**	**4**
Orange	4.5	3	4	North Coastal Orange County	1
Riverside	1.9	3	4	Metropolitan Riverside County	1
San Bernardino	4.0	3	4	Central San Bernardino Valley	1
Salton Sea Air Basin					
Riverside	N.D.	N.D.	N.D.	Coachella Valley	N.D.

Bold text denotes the peak value

N.D. = No Data. Historical analyses and lack of emissions sources indicate concentrations are well below standards

The 1-hour SO_2 design value is the annual 99th percentile 1-hour daily maximum concentration, averaged over 3 years at a station

TABLE 2-21

2015 Maximum 24-Hour Average SO_2 Concentrations and 2013–2015 Design Values by Basin and County

Basin/County	2015 Maximum 24-Hour SO_2 Average (ppm)	2013–2015 24-Hour SO_2 Design Value (ppm)	Percent of 24-Hour SO_2 former NAAQS (0.14 ppm)	Area of Design Value Max	Percent of 24-Hour SO_2 State Standard (0.04 ppm)
South Coast Air Basin					
Los Angeles	**0.005**	**0.003**	**2**	**South Coastal LA County**	**8**
Orange	0.001	0.001	1	North Coastal Orange County	3
Riverside	0.001	0.001	1	Metropolitan Riverside County	3
San Bernardino	0.001	0.001	1	Central San Bernardino Valley	3
Salton Sea Air Basin					
Riverside	N.D.	N.D.	N.D.	Coachella Valley	N.D.

Bold text denotes the peak value

N.D. = No Data. Historical analyses and lack of emissions sources indicate concentrations are well below standards

The 24-hour SO_2 design value is the 2nd highest 24-hour average concentration at a station in a single year

Sulfates (SO_4^{2-})

Sulfate Air Quality

Sulfates, as measured from FRM PM10 filters, was sampled at 18 stations in 2015 in the SCAQMD jurisdiction, including two locations in the Coachella Valley. Two stations were closed in 2014, Burbank and Ontario Fire Station, with only partial-year data available. The North Long Beach station was closed in 2013. New locations are pending for the Burbank and North Long Beach stations. Since the sulfate measurement is analyzed in the laboratory from the collected 24-hour PM10 filters, the sulfate network is identical to the FRM PM10 monitoring network. The measurements are done every sixth day, except that two stations in Metropolitan Riverside County (Rubidoux and Mira Loma) and one in the Coachella Valley (Indio) measure every third day. Figure 2-35, in the PM10 section above, maps the manual FRM PM10 stations that also comprise the SCAQMD sulfate network.

In 2015, the State 24-hour PM10-sulfate standard (25 µg/m^3) was not exceeded anywhere in the Basin or the Coachella Valley, nor has it been exceeded since 1990. The peak Basin sulfate concentration of 21.0 µg/m^3 (84 percent of the State standard) was measured in the East San Gabriel Valley. This was higher than the peaks in recent years, due to the impact of Independence Day fireworks on the July 5 measurement. Several other stations in the Basin also had annual peaks on this day and it is anticipated that these will not be included in the State designation value calculations for 2015. There is no corresponding federal standard for sulfates. Maximum 24-hour concentrations and anticipated maximum State designation values by air basin and county are summarized in Table 2-22. The annual maximum 24-hour average sulfate concentrations for each monitoring station in the SCAQMD jurisdiction are shown in Table A-24 in the attachment, for the years 1995–2015.

TABLE 2-22
2015 Maximum 24-Hour Average Sulfates (SO_4^{2-} from PM10) Concentrations
by Basin and County

Basin/County	2015 Maximum 24-Hour SO_4^{2-} Average (µg/m³)	2013–2015 24-Hour SO_4^{2-} State Designation Value (µg/m³)	2015 Percent of State SO_4^{2-} Standard (25 µg/m³)	Area of Max
South Coast Air Basin				
Los Angeles	**21.0***	**6.9***	**33**	**South Coastal Los Angeles County**
Orange	4.2	4.2	17	Central Orange County
Riverside	5.9*	4.2*	17	Metropolitan Riverside County
San Bernardino	14.7*	4.6*	18	Central San Bernardino Valley
Salton Sea Air Basin				
Riverside	4.6**	2.6**	10	Coachella Valley (Palm Springs)

Bold text denotes the peak value

* The 2015 Basin maximum sulfate concentration of 21.0 µg/m³ in Los Angeles County, as well as the peaks in Riverside and San Bernardino Counties, occurred on July 5, 2015, due to fireworks on Independence Day; it is anticipated that these may be excluded from the State designation value calculations for a peak 2015 Basin designation value of 6.9 µg/m³

** The 2015 Coachella Valley maximum sulfate concentration of 4.6 µg/m³ at the Palm Springs station was associated with a high-wind exceptional event; it is anticipated that this may be excluded from the State designation value calculations for a peak 2015 Basin designation value of 2.6 µg/m³

Lead (Pb)

Current Lead Air Quality

In 2015, SCAQMD's lead monitoring network included eight ambient monitoring locations and an additional five source-specific sites near major lead emissions sources. The North Long Beach station was closed in 2013 and the Riverside-Magnolia station was closed at the beginning of 2015. The source-specific station at Van Nuys Airport was closed in 2013, with no violation of the lead standards measured. A new source-specific lead monitor was installed in Fontana near a recycling facility, starting in January 2015. Figure 2-44 shows the ambient and source-specific lead monitoring sites in the SCAQMD jurisdiction.

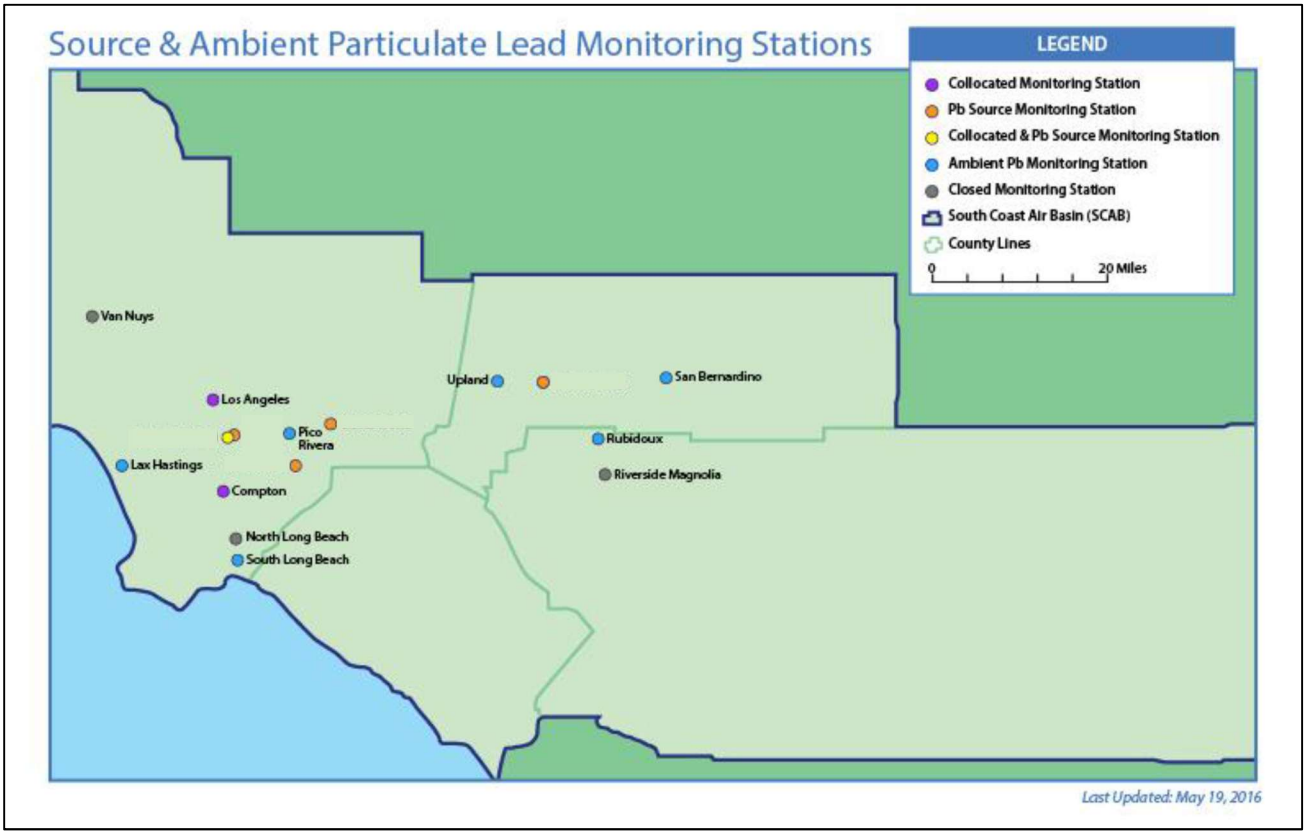

FIGURE 2-44

South Coast Air Quality Management District Ambient and Source-Specific Lead (Pb) Air Monitoring Locations

(Note that lead stations that were closed at N. Long Beach and Van Nuys in 2013 and at Riverside-Magnolia in January 2015 are mapped with grey dots)

Based on the review of the NAAQS for lead, U.S. EPA established the current standard of 0.15 µg/m^3 for a rolling 3-month average, effective October 15, 2008 (measured from total suspended particulates, TSP). There have been no violations of the lead standards at the District's regular ambient air monitoring stations since 1982, primarily as a result of removal of lead from gasoline. However, monitoring at two stations, immediately adjacent to stationary sources of lead, recorded exceedances of the standard in Los Angeles County for the 2007–2009 data period, which was used for designation under the revised standard that included the new requirements for near-source monitoring. As a result, a non-attainment designation was determined for the Los Angeles County portion of the Basin when the current standard was implemented. While near-source lead measurements in Los Angeles County had previously violated the current NAAQS, there have been no exceedances of the federal standard in the Basin as of either the 2012–2014 or the 2013–2015 3-year design value period.

Table 2-23 summarizes the Basin's maximum 3-month rolling average lead concentrations recorded in 2015 and in the 2013–2015 design value period, by county. The current lead concentrations in Los Angeles county are now well below the lead NAAQS (0.15 µg/m^3), including the monitoring at the source oriented locations (down to 27 percent of the NAAQS for the 2015 maximum 3-month rolling average). The lead data from both the ambient and source-specific locations throughout the Basin has remained well below the NAAQS since 2012, due mainly to the implementation of stricter SCAQMD rules for the lead sources. The new source-specific measurements in San Bernardino County in 2015 are generally higher than the ambient

measurements, but are well below the level of NAAQS. The less-stringent State 30-day standards for lead were not exceeded in any other area of the Basin in 2015, as is also shown in Table 2-23, or any recent year.

As a result of the 2012–2014 and 2013–2015 design value remaining well below the NAAQS, SCAQMD will be petitioning U.S. EPA for a redesignation to attainment for the federal lead standard for the Los Angeles County nonattainment area. Stringent SCAQMD rules governing lead-producing sources will protect from again exceeding the federal standard. Furthermore, the business that had been the largest single source of lead emissions in Los Angeles County has closed in recent months and is in the process of demolition and clean-up.

The maximum calendar annual maximum monthly average and 3-month rolling average lead concentrations at each monitoring site in the SCAQMD jurisdiction for the years 1995–2015 are provided in Tables A-25 and A-26, respectively, in the attachment.

TABLE 2-23

2015 Maximum 3-Month Rolling Average Lead Concentrations
and 2013–2015 Design Values by Basin and County

Basin/County	2015 Max 3-Month Rolling Average Design Value (µg/m³)	2013–2015 Max 3-Month Rolling Average Design Value (µg/m³)	Percent of Current NAAQS (0.15 µg/m³)	Area of Design Value Max	2015 Max 30-Day Average (µg/m³)	Percent of State Standard (1.5 µg/m³)
South Coast Air Basin						
Los Angeles*	**0.04**	**0.08**	**53**	**Southeast Los Angeles County**	**0.05**	**3**
Orange	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Riverside	0.01	0.01	7	Metropolitan Riverside County	0.01	1
San Bernardino*	0.03	0.03	20	Central San Bernardino Valley	0.04	3
Salton Sea Air Basin						
Riverside	N.D.	N.D.	N.D.	Coachella Valley	N.D.	N.D.

Bold text denotes the peak value

N.D. = No Data; historical analyses and emissions profiles indicate concentrations would be well below standards

The lead NAAQS design value is the highest rolling 3-month average over a 3-year period at a station

* The higher lead concentrations in Los Angeles and San Bernardino Counties were measured at sites immediately downwind lead sources; the maximum 3-month average design value was measured at a near-source station in Los Angeles County (Santa Fe Springs) for February through April of 2013; the single year of data from the San Bernardino County near-source lead monitor is insufficient for a complete 3-year design value calculation, but is included here

CHAPTER 3

AIR QUALITY IN THE SALTON SEA AIR BASIN, RIVERSIDE COUNTY (COACHELLA VALLEY)

Overview of Coachella Valley Air Quality

Current Air Quality Summary
Attainment/Nonattainment Designations

Pollutant-Specific Air Quality Discussion

Ozone (O_3)
Fine Particulate Matter (PM2.5)
Particulate Matter (PM10)
Carbon Monoxide (CO)
Nitrogen Dioxide (NO_2)
Sulfur Dioxide (SO_2)
Sulfate (SO_4^{2-})
Lead (Pb)
Hydrogen Sulfide (H_2S)

Overview of Coachella Valley Air Quality

In 2015, the SCAQMD monitored air quality at four routine locations in the Riverside County portion of the Salton Sea Desert Air Basin (SSAB), all within the Coachella Valley. Figure 3-1 shows a map of the area and topography. A long-term monitoring station (Palm Springs) is located immediately downwind of the densely populated South Coast Air Basin (Basin). A second long-term station (Indio) is located further downwind in the Coachella Valley. A relatively new monitoring station has also been operational in the community of Mecca at the Saul Martinez Elementary School to measure PM10, with a continuous TEOM instrument, and Hydrogen Sulfide (H_2S), a gas emitted naturally from the Salton Sea that causes strong odors at times. The Mecca station is in the southeastern Coachella Valley, a few miles from the northern shore of the Salton Sea. Additional continuous H_2S monitoring is now being conducted at the northern shore of the Salton Sea in a sparsely populated area. Since the end of May 2014, SCAQMD has also been measuring PM2.5 with a continuous, special-purpose monitor in Desert Hot Springs, predominantly downwind of the 800 megawatt CPV Sentinel natural gas-powered electric generation facility.

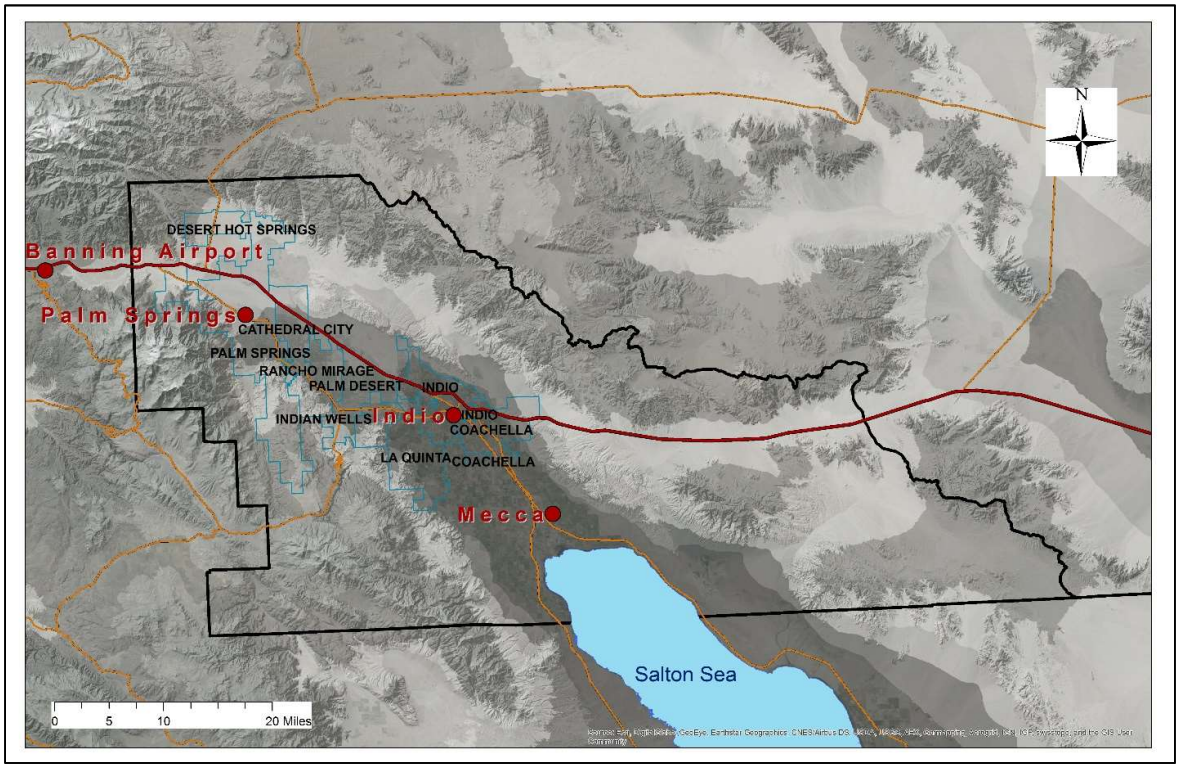

FIGURE 3-1

Location and Topography of the Coachella Valley Planning Area

[the San Gorgonio Pass (AKA Banning Pass) is the west-east pass between the mountains near the Banning Airport air monitoring station that leads from the South Coast Air Basin into the Coachella Valley; SCAQMD air monitoring stations at Palm Springs, Indio, and Mecca are shown within the Coachella Valley boundaries]

Current Air Quality Summary

Federal and State standards for PM2.5, carbon monoxide (CO), and nitrogen dioxide (NO_2) were not exceeded in the Coachella Valley in 2015, nor was the State standard for Sulfate (SO_4^{2-}, from PM10). However, the Coachella Valley exceeded State and federal standards for both ozone and PM10, although the NAAQS PM10 exceedances were due to high-wind exceptional events.

In 2015, the new 2015 8-hour ozone federal standard (0.070 ppm) was exceeded in the Coachella Valley on 47 days (13 percent of the year), while the revised 2008 (0.075 ppm) and revoked 1997 (0.08 ppm) 8-hour standards were exceeded on 26 and 5 days, respectively. The maximum 8-hour ozone concentration was 0.092 ppm (131, 123 and 109 percent of the 2015, 2008 and 1997 ozone standards, respectively). The former 1979 1-hour federal ozone standard level (0.12 ppm) was not exceeded in the Coachella Valley in 2015, with a maximum 1-hour concentration of 0.10 ppm. Ozone concentrations in the Coachella Valley, and the number of days exceeding the federal ozone standards, are greatest in the late spring and summer months, with no exceedances during the winter. The Palm Springs station consistently has more days above the federal and State ozone standards each year than the Indio station.

The 24-hour PM10 NAAQS was exceeded on eight days in 2014 and eight more in 2015. These were flagged by the District for consideration under the U.S. EPA Exceptional Events Rule,[28] due to high-wind natural windblown dust events. The stations at Palm Springs, Indio and Mecca were included in this summary. Pending preparation of supporting documentation and U.S. EPA concurrence with the flags, the Coachella Valley did not violate the 24-hour PM10 NAAQS in 2014 or 2015.

The maximum concentrations measured at the SCAQMD Coachella Valley air monitoring stations in 2015 are shown in Figure 3-2, as percentages of the State and federal standards. Figure 3-3 shows the Coachella Valley 3-year (2013–2015) design values, as percentages of the current and revoked federal standards.

[28]The U.S. EPA Exceptional Events Rule, *Treatment of Data Influence by Exceptional Events*, became effective May 21, 2007. The previous U.S. EPA *Natural Events Policy* for Particulate Matter was issued on May 30, 1996. On September 16, 2016, U.S. EPA promulgated revisions to the Exceptional Event Rule. Under the Exceptional Events Rule, U.S. EPA allows certain data to be flagged in the U.S. EPA Air Quality System (AQS) database and not considered for NAAQS attainment status when that data is influenced by exceptional events, such as high winds, wildfires, volcanoes, or some cultural events (Independence Day fireworks) that meet strict requirements.

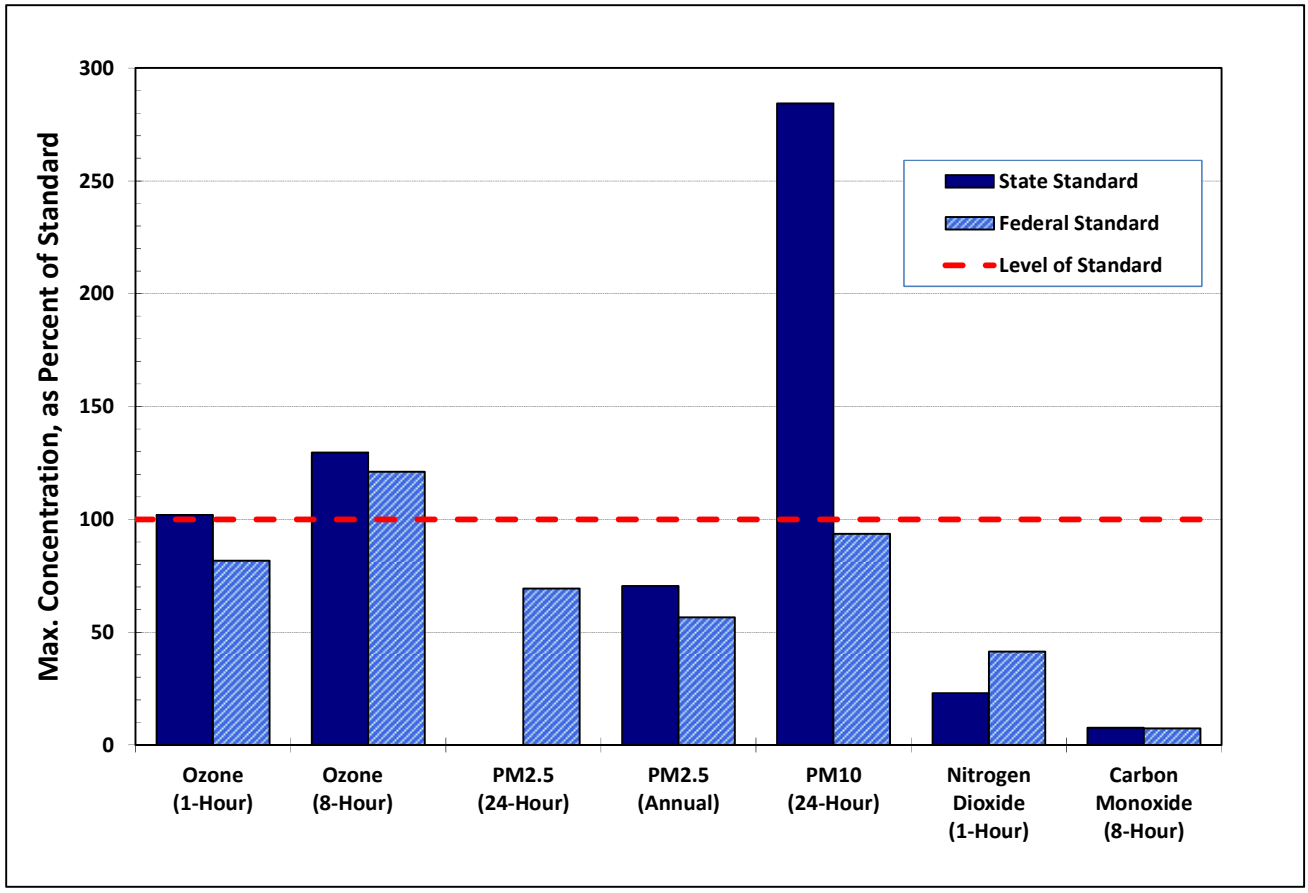

FIGURE 3-2

Coachella Valley 2015 Maximum Pollutant Concentrations
as Percent of State and Federal Standards

(the 2008 8-hour federal ozone standard is shown – note that the bar for the State 8-hour ozone standard is the nearly the same as for the new 2015 8-hour federal ozone standard, which is not shown; for PM10, flagged exceptional events are excluded, pending required event documentation and U.S. EPA concurrence; there is no State 24-hour PM2.5 standard)

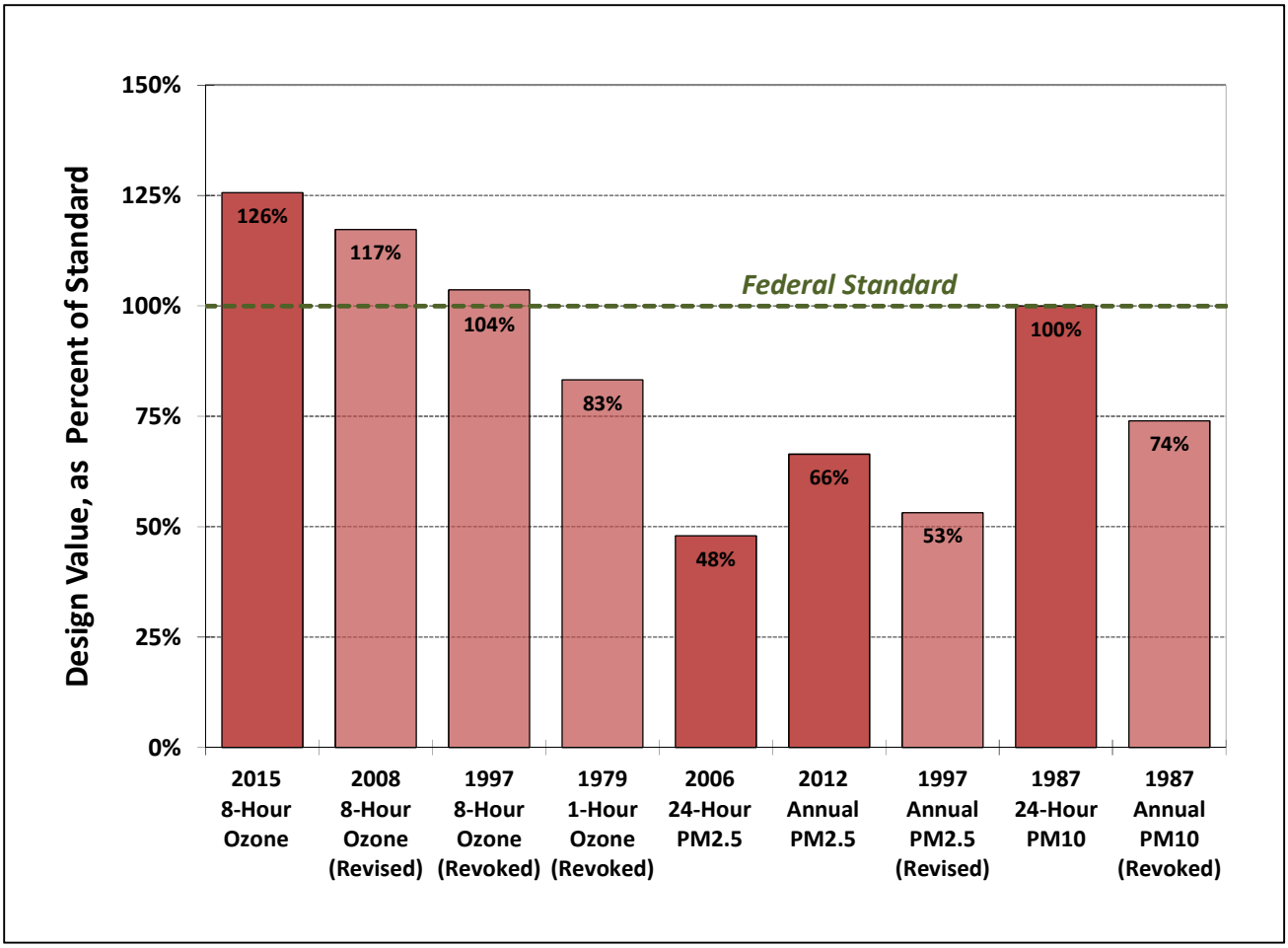

FIGURE 3-3

Coachella Valley 3-Year (2012–2014) Design Values as Percent of Federal Standard

(PM10 flagged exceptional events are excluded but supporting documentation and U.S. EPA concurrence is still needed; note that 100 percent of the Federal Standard is not exceeding that standard; darker shading indicates current, most-stringent NAAQS)

Attainment/Nonattainment Designations

The current NAAQS and CAAQS, with attainment designations for the Coachella Valley, are presented in Tables 3-1 and 3-2, respectively. Statistics for Coachella Valley ambient air monitoring data are included in the tables by pollutant for the years 1995–2014, which can be found along with the Basin monitoring data in the attachment to this appendix.

TABLE 3-1

National Ambient Air Quality Standards (NAAQS) Attainment Status

Coachella Valley Portion of the Salton Sea Air Basin

Criteria Pollutant	Averaging Time	Designation[a]	Attainment Date[b]
Ozone (O_3)	(1979) **1-Hour** (0.12 ppm)[c]	Attainment	11/15/2007 (attained 12/31/2013)
	(2015) **8-Hour** (0.070 ppm)[d]	Pending – Expect Nonattainment (Severe)	Pending
	(2008) **8-Hour** (0.075 ppm)[d]	Nonattainment (Severe-15)	7/20/2027
	(1997) **8-Hour** (0.08 ppm)[d]	Nonattainment (Severe-15)	6/15/2019
PM2.5[e]	(2006) **24-Hour** (35 µg/m^3)	Unclassifiable/Attainment	N/A (attained)
	(2012) **Annual** (12.0 µg/m^3)	Unclassifiable/Attainment	N/A (attained)
	(1997) **Annual** (15.0 µg/m^3)	Unclassifiable/Attainment	N/A (attained)
PM10[f]	(1987) **24-hour** (150 µg/m^3)	Nonattainment (Serious)	12/31/2006
Lead (Pb)	(2008) **3-Months Rolling** (0.15 µg/m^3)	Unclassifiable/Attainment	Unclassifiable/ Attainment
CO	(1971) **1-Hour** (35 ppm)	Unclassifiable/Attainment	N/A (attained)
	(1971) **8-Hour** (9 ppm)	Unclassifiable/Attainment	N/A (attained)
NO_2[g]	(2010) **1-Hour** (100 ppb)	Unclassifiable/Attainment	N/A (attained)
	(1971) **Annual** (0.053 ppm)	Unclassifiable/Attainment	N/A (attained)
SO_2[h]	(2010) **1-Hour** (75 ppb)	Designations Pending	N/A
	(1971) **24-Hour** (0.14 ppm) (1971) **Annual** (0.03 ppm)	Unclassifiable/Attainment	Unclassifiable/ Attainment

a) U.S. EPA often only declares Nonattainment areas; everywhere else is listed as Unclassifiable/Attainment or Unclassifiable

b) A design value below the NAAQS for data through the full year or smog season prior to the attainment date is typically required for an attainment demonstration

c) The 1979 1-hour ozone NAAQS (0.12 ppm) was revoked, effective 6/15/05; the Southeast Desert Modified Air Quality Management Area, including the Coachella Valley, had not timely attained this standard by the 11/15/07 "severe-17" deadline, based on 2005-2007 data; on 8/25/14, U.S. EPA proposed a clean data finding based on 2011-2013 data and a determination of attainment for the former 1-hour ozone NAAQS for the Southeast Desert nonattainment area; this rule was finalized by U.S. EPA on 4/15/15, effective 5/15/15, and included preliminary 2014 data

d) The 2008 8-hour ozone NAAQS (0.075 ppm) was revised to 0.070 ppm, effective 12/28/15 with classifications and implementation goals to be finalized by 10/1/17; the 1997 8-hour ozone NAAQS (0.08 ppm) was revoked in the 2008 ozone NAAQS implementation rule, effective 4/6/15; there are continuing obligations under the 1997 and 2008 ozone NAAQS until they are attained

e) The annual PM2.5 standard was revised on 1/15/13, effective 3/18/13, from 15 to 12 µg/m3

f) The annual PM10 standard was revoked, effective 12/18/06; the 24-hour PM10 NAAQS attainment deadline was 12/31/2006; the Coachella Valley Attainment Redesignation Request and PM10 Maintenance Plan was postponed by U.S. EPA pending additional monitoring and analysis in the southeastern Coachella Valley

g) New 1-hour NO_2 NAAQS became effective 8/2/10; attainment designations 1/20/12; annual NO_2 NAAQS retained

h) The 1971 Annual and 24-hour SO_2 NAAQS were revoked, effective 8/23/10; however, these 1971 standards will remain in effect until one year after U.S. EPA promulgates area designations for the 2010 SO_2 1-hour standard; final area designations expected by 12/31/2020 with SSAB expected to be designated Unclassifiable/Attainment

TABLE 3-2

California Ambient Air Quality Standards (CAAQS) Attainment Status

Coachella Valley portion of Salton Sea Air Basin

Pollutant	Averaging Time and Level[b]	Designation[a]
		Coachella Valley
Ozone (O_3)	**1-Hour** (0.09 ppm)[c]	Nonattainment
	8-Hour (0.070 ppm)[d]	Nonattainment
PM2.5	**Annual** (12.0 µg/m^3)	Attainment
PM10	**24-Hour** (50 µg/m^3)	Nonattainment
	Annual (20 µg/m^3)	Nonattainment
Lead (Pb)	**30-Day Average** (1.5 µg/m^3)	Attainment
CO	**1-Hour** (20 ppm)	Attainment
	8-Hour (9.0 ppm)	Attainment
NO_2	**1-Hour** (0.18 ppm)	Attainment
	Annual (0.030 ppm)	Attainment
SO_2	**1-Hour** (0.25 ppm)	Attainment
	24-Hour (0.04 ppm)	Attainment
Sulfates	**24-Hour** (25 µg/m^3)	Attainment
H_2S[c]	**1-Hour** (0.03 ppm)	Unclassified[c]

a) CA State designations shown were updated by CARB on January 5, 2016, based on the 2012-2014 3-year period; stated designations are based on a 3-year data period after consideration of outliers and exceptional events [Source: http://www.arb.ca.gov/desig/statedesig.htm#current]

b) CA State standards, or CAAQS, for ozone, CO, SO_2, NO_2, PM10 and PM2.5 are values not to be exceeded; lead, sulfates, and H_2S standards are values not to be equaled or exceeded; CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations

c) SCAQMD began monitoring H_2S in the southeastern Coachella Valley in November 2013 due to odor events related to the Salton Sea; three full years of data are not yet available for a designation, but nonattainment is anticipated for the H_2S CAAQS in at least part of the Coachella Valley

Pollutant-Specific Air Quality Summary

Ozone (O_3)

Atmospheric ozone in the Riverside county portion of SSAB is both directly transported from the Basin and formed photochemically from precursors emitted upwind. The precursors are emitted in greatest quantity in the coastal and central Los Angeles County areas of the Basin. The Basin's prevailing sea breeze causes polluted air to be transported inland. As the air is being transported inland, ozone is formed, with peak concentrations occurring in the inland valleys of the Basin, extending from eastern San Fernando Valley through the San Gabriel Valley into the Riverside-San Bernardino area and the adjacent mountains. As the air is transported still further inland into the Coachella Valley, through the San Gorgonio Pass, ozone concentrations typically decrease due to dilution, although ozone standards can still be exceeded.

Ozone is measured continuously at two locations in the Coachella Valley at the Palm Springs and Indio air monitoring stations. In 2015, the new 2015 8-hour ozone federal standard (0.070 ppm) was exceeded in the Coachella Valley on 47 days (13 percent of the year), while the previous 2008 (0.075 ppm) and 1997 (0.08 ppm) 8-hour standards were exceeded on 26 and 5 days, respectively. The maximum 8-hour ozone concentration was 0.092 ppm (131, 123 and 109 percent of the level of the 2015, 2008 and 1997 ozone standards, respectively). The former 1979 1-hour federal ozone standard level (0.12 ppm) was not exceeded in the Coachella Valley in 2014, with a maximum 1-hour concentration of 0.102 ppm. Ozone concentrations in the Coachella Valley, and the number of days exceeding the federal ozone standards, are greatest in the late spring and summer months, with no exceedances during the winter.

The 8-hour ozone design value for the Coachella Valley for the 3-year period of 2013–2015 was 0.088 ppm (126, 117, and 104 percent of the 2015, 2008, and 1997 ozone NAAQS, respectively). The 1-hour ozone design value was 0.104 ppm, which is 83 percent of the former 1979 1-hour ozone NAAQS. While the Coachella Valley remains in attainment of the former 1-hour federal standard, the 8-hour NAAQS are still violated. The Palm Springs station had higher ozone design values and significantly more days above the standards than the Indio station.

The 1-hour and 8-hour State ozone standards were exceeded on 3 days and 51 days, respectively, in the Coachella Valley in 2015. The 1-hour ozone health advisory level (≥ 0.15 ppm) has not been exceeded in the Coachella Valley area since 1998. No 1-hour Stage 1 episode levels (≥ 0.20 ppm) have been recorded in the Coachella Valley area since 1988.

Figure 3-4 shows the trend of the annual peak ozone concentrations (1-hour and 8-hour averages) measured in the Coachella Valley between 1990 and 2015. Figure 3-5 shows the trend of the annual number of days exceeding federal and State ozone standards at Coachella Valley monitoring sites for the years 1990–2015. Figure 3-6 shows the 3-year ozone design value trends from 1990 through 2015 (labeled as the end year of each 3-year design value period). As is illustrated, the Coachella Valley has experienced a trend of steady ozone improvements over the years. However, additional gains are needed to achieve the new and previous 8-hour ozone standards.

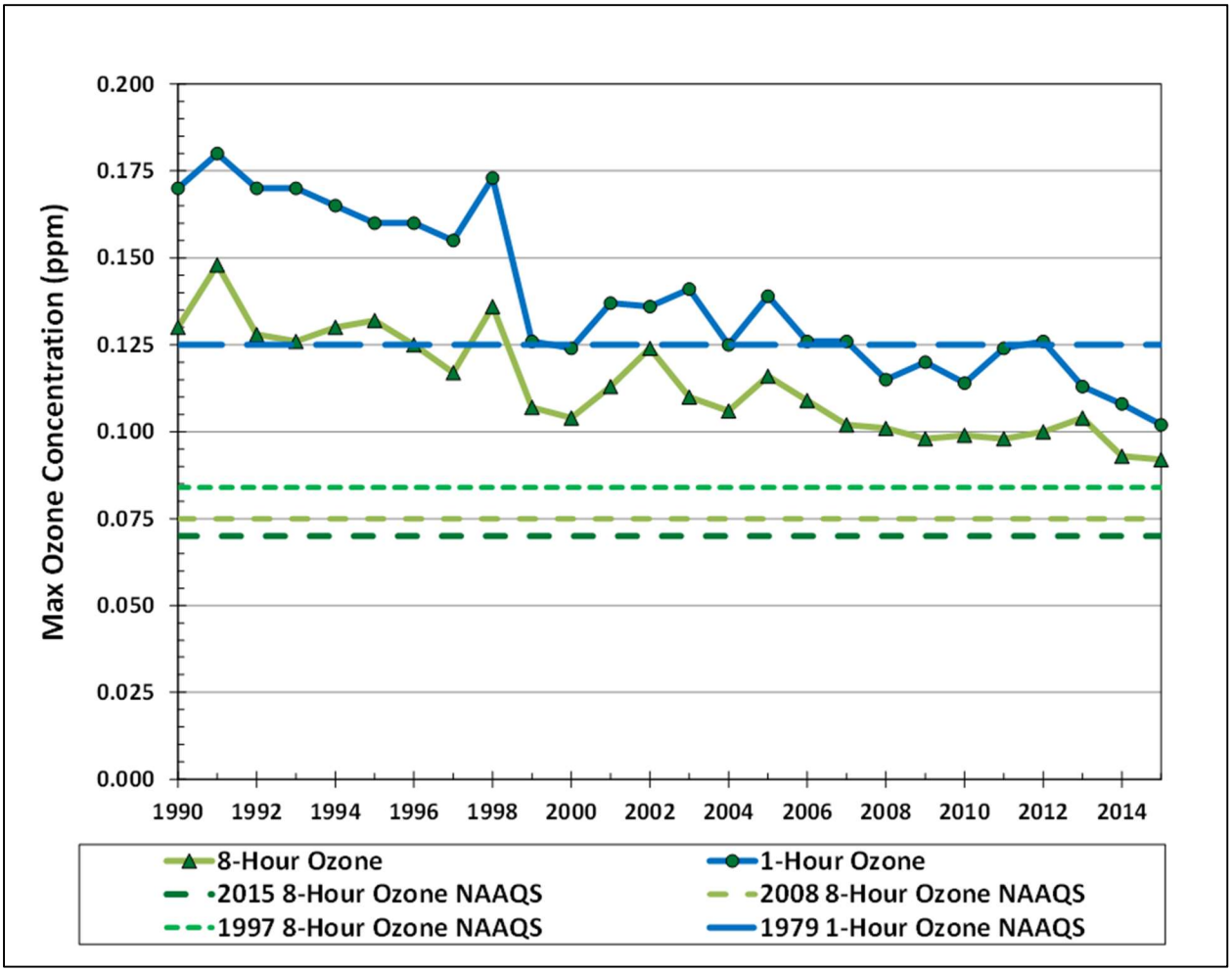

FIGURE 3-4

Trends of Coachella Valley Maximum 1-hour and 8-hour Ozone Concentrations, 1990–2015

(dashed lines depict the new 2015 8-hour and the previous 2008 and 2997 8-hour and 1979 1-hour federal ozone standards)

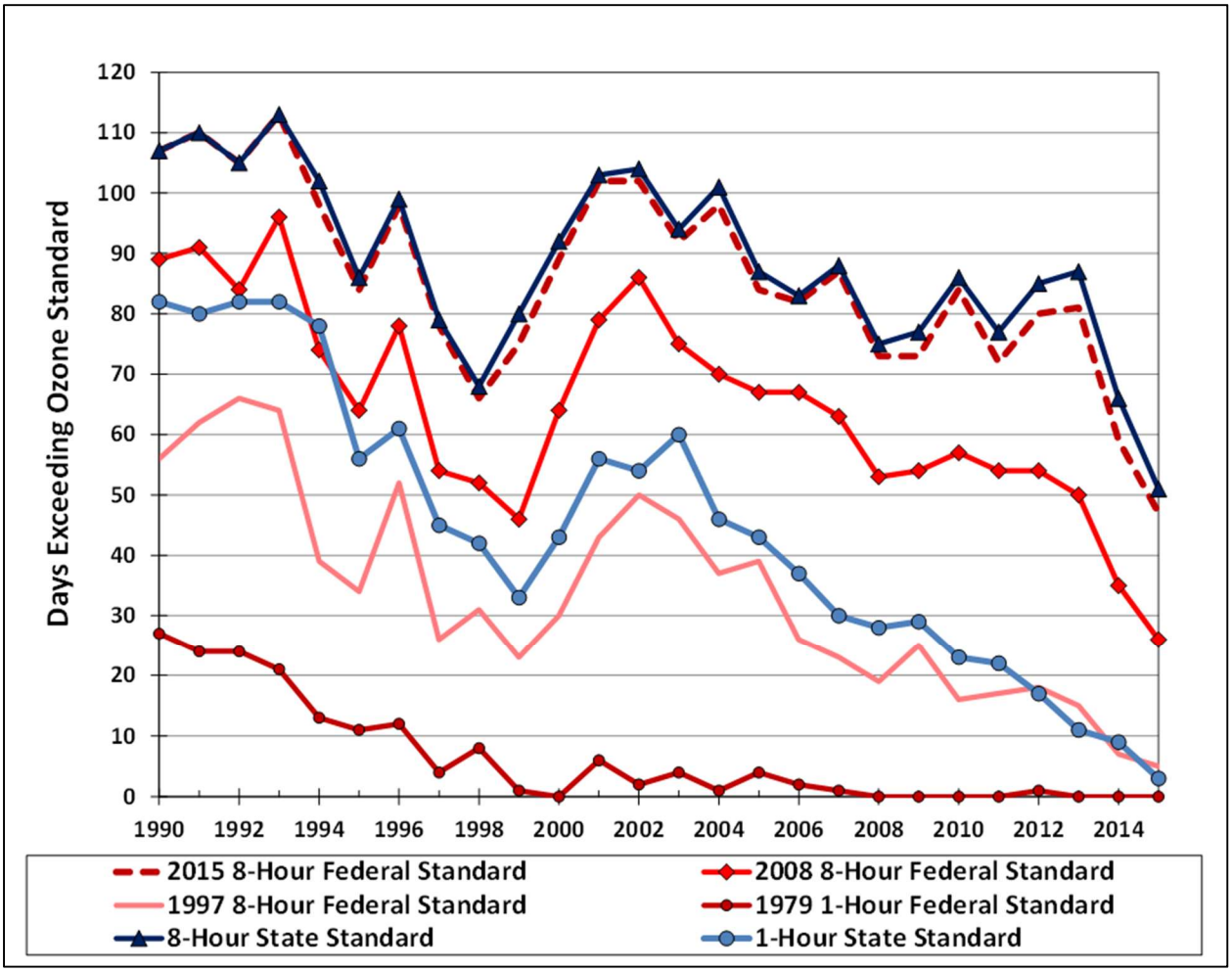

FIGURE 3-5

Number of Days Exceeding Federal and State Ozone Standards
in the Coachella Valley, 1990–2015

(the new 2015 8-hour federal standard is now the current ozone NAAQS, but commitments remain toward timely attainment of the former federal standards; the Coachella Valley has attained the former 1979 federal 1-hour ozone standard)

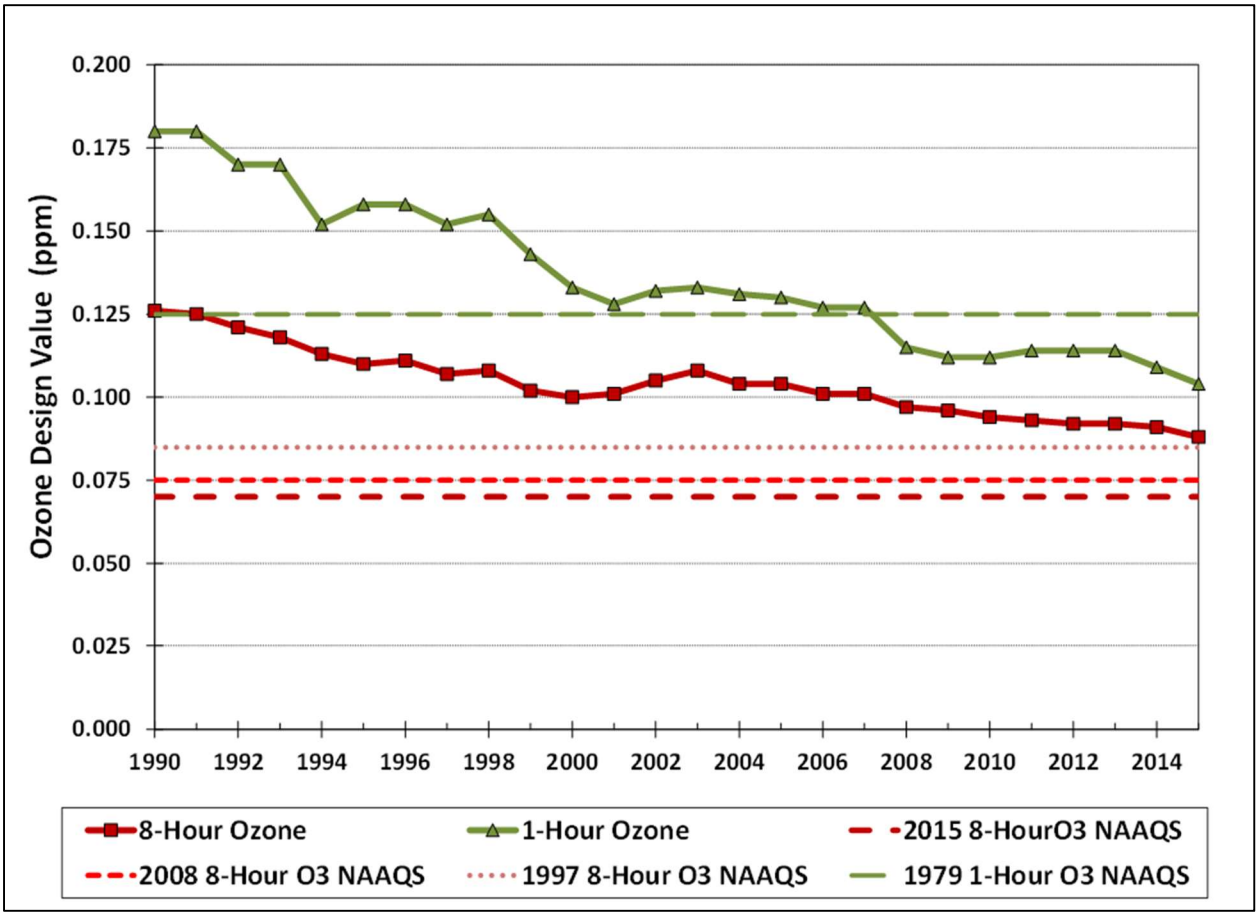

FIGURE 3-6

Coachella Valley Federal 8-Hour and 1-Hour Ozone 3-Year Design Value Trends, 1990–2015

[dashed lines indicate the current 2015, revised 2008, and revoked 1997 8-hour NAAQS and the revoked 1979 1-hour ozone NAAQS (attained); year plotted is the end year of the 3-year design value period]

Tables A-2 through A-10 in the attachment to this appendix show the number of days exceeding the federal 8-hour and 1-hour ozone standards, as well as the fourth highest 8-hour average and maximum 1-hour concentrations, at all routine SCAQMD air quality monitoring stations including the two Coachella Valley sites, for the period 1995–2014. Please refer to Appendix II from the 2003 AQMP for the 1976–1989 prior-year statistics and to Appendix II from the 2007 AQMP for 1990–2005 data.

Ozone and Ozone Precursor Transport

Pollutant transport from the South Coast Air Basin to the Salton Sea Air Basin occurs through the San Gorgonio Pass (sometimes referred to as the Banning Pass) to the Coachella Valley.[29] The transport pathway to the

[29] Keith, R.W. (1980). A Climatological Air Quality Profile: California's South Coast Air Basin. Staff Report, South Coast Air Quality Management District.

Coachella Valley has been well documented and studied in the past. An experiment in the early 1970s concluded that the South Coast Air Basin was the source of the observed high ozone levels in the Coachella Valley.[30] Transport from Anaheim to Palm Springs was directly identified with an inert sulfur hexafluoride tracer release.[31] A comprehensive study of transport from the South Coast Air Basin to the Salton Sea Air Basin also confirmed the ozone transport pathway to the Coachella Valley.[32]

Ozone pollutant transport to the Coachella Valley can be demonstrated by examining averaged ozone concentrations by time of day for various stations along the transport corridor from Los Angeles County into Riverside County and into the Coachella Valley. Figure 3-7 shows the diurnal distribution of averaged 1-hour ozone concentrations for the May–October smog season, by hour, for the 2012–2014 period. The Coachella Valley transport route is represented, starting at Central Los Angeles as the main emissions source region and passing through Riverside-Rubidoux and Banning and finally through the San Gorgonio Pass to Palm Springs in the Coachella Valley. Near the source regions, ozone peaks occur just after mid-day (1:00 to 2:00 p.m. Pacific Standard Time, PST), on average, during the peak of incoming solar radiation and therefore the peak of ozone production. Ozone peaks near the emissions source region are not as high as those further downwind, due to the photochemical reaction time needed for ozone to form from precursor gases. Downwind of the source region, ozone peaks occur later in the day and at generally higher concentrations as ozone and ozone precursors are transported downwind and photochemical reactions continue. At Palm Springs, ozone concentration peaks occur between 4:00 and 6:00 p.m. PST. If this peak were locally generated, it would be occurring closer to near mid-day, as is seen in the major source areas of the South Coast Air Basin, and not in the late afternoon or early evening, as is seen at Palm Springs.

[30] Kauper, E.K. (1971). Coachella Valley Air Quality Study. Final Report, Pollution Res. & Control Corp., Riverside County Contract & U.S. Public Health Service Grant No. 69-A-0610 RI.

[31] Drivas, P.J., and F.H. Shair. (1974). A Tracer Study of Pollutant Transport in the Los Angeles Area. *Atmos. Environ*. 8, 1155-1163.

[32] Smith, T.B., et al. (1983). The Impact of Transport from the South Coast Air Basin on Ozone Levels in the Southeast Desert Air Basin. CARB Research Library Report No. ARB-R-83-183. CARB Contract to MRI/Caltech. [http://www.arb.ca.gov/research/single-project.php?row_id=64953]

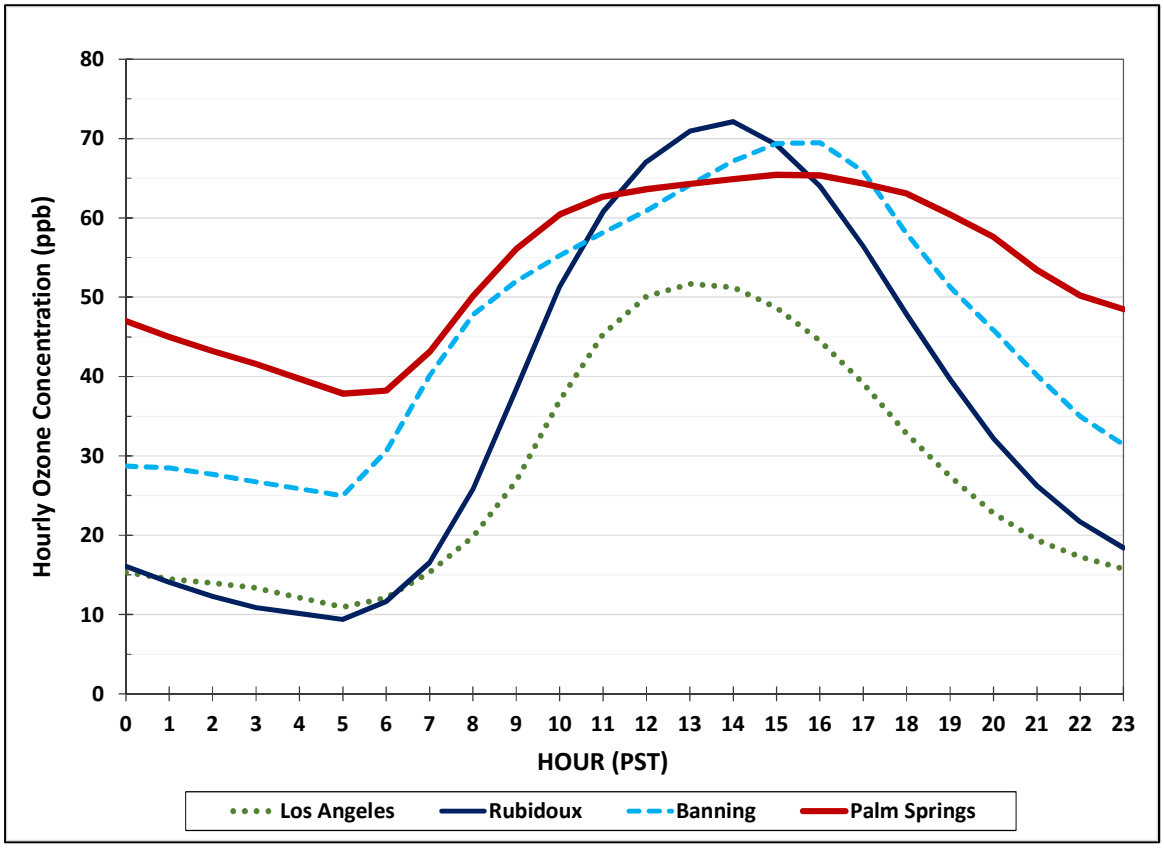

FIGURE 3-7

Diurnal Profile of 3-Year (2012–2014) Hourly Ozone Concentrations
Along the Transport Route into the Coachella Valley
[hours in Pacific Standard Time (PST); averaged for the May-October ozone season by hour]

Palm Springs also exhibits higher morning ozone concentrations, when compared to the concentrations in the morning in the South Coast Air Basin closer to the main emissions source areas (i.e., Los Angeles and Rubidoux). The stations in the South Coast have more local NOx emissions (mostly from mobile sources) that help scavenge[33] the ozone after dark when ozone photochemistry ceases. The Coachella Valley has limited local NOx emissions to help scavenge the ozone at night. This elevated overnight ozone contributes to an early morning start to the daily ozone increase in Coachella Valley, starting after sunrise (5-6 a.m. PST), with the ample sunlight and strong overnight temperature inversions in the desert. Ozone concentrations observed on high ozone days in the Coachella Valley can reach an initial peak before noon and then drop slightly with increased mixing in the early afternoon, before climbing to the daily peak, typically between 4 and 6 p.m., as the typical onshore flow reaches the Coachella Valley through the San Gorgonio Pass, transporting new ozone from the South Coast Air Basin.

[33] Freshly emitted NOx includes NO, which destroys ozone through a fast reaction colloquially termed 'scavenging.'

Fine Particulate Matter (PM2.5)

SCAQMD began PM2.5 fine particulate monitoring in both the Coachella Valley and the Basin in 1999. Two long-term, routine stations (Palm Springs and Indio) measure PM2.5 with 24-hour filter-based FRM measurements every third day, as required by U.S. EPA monitoring regulations. PM2.5 has remained relatively low, especially when compared to the South Coast Air Basin, due to fewer combustion-related emissions sources and less secondary aerosol formation in the atmosphere. There is also typically increased vertical mixing and horizontal dispersion in the desert areas. When looking at the 3-year design value for the 2013-2015 period, the Coachella Valley PM2.5 24-hour design value (17 µg/m^3) is 48 percent of the 24-hour NAAQS (35 µg/m^3) and the annual average design value (8.0 µg/m^3) is 66 percent of the current (2012) annual NAAQS (12.0 µg/m^3).

Figure 3-8 shows the trend of 3-year design values for annual average and 24-hour PM2.5 from 2001 through 2015. The stations in the Coachella Valley have not violated the 3-year design value form of the current standards since monitoring began. The annual average for the first year of measurements (1999) was just slightly above the level of the standard as can be seen in the trend of the annual average PM2.5 concentrations, as shown in Figure 3-9, along with annual trend of PM10. As was seen elsewhere in California, the increasing trend in the 24-hour design values in the Coachella Valley after 2012 is likely due, at least in part, to the ongoing drought conditions (see the PM2.5 section in Chapter 2 for additional drought discussion).

There are occasionally some individual days that exceeded the level of the 24-hour PM2.5 standard in the Coachella Valley, due to the PM2.5 fine particulate portion of windblown dust during very high PM10 events caused by high winds. Even though the PM2.5 standard can be exceeded during these exceptional events, the PM2.5 mass is a very small fraction of the total PM10 mass. These events are extreme and can be flagged as exceptional events, but they do not occur frequently enough to violate the 98th percentile form of the 24-hour PM2.5 standard.

The 2015 Coachella Valley maximum 24-hour average and the highest annual average concentrations (24.6 µg/m^3 and 7.5 µg/m^3, respectively, both at Indio) were 69 percent and 62 percent of the current federal 24-hour and annual standards. The annual PM2.5 State standard (12.0 µg/m^3), which is the same level as the federal annual standard, but with different rounding requirements, is also not exceeded in the Coachella Valley.

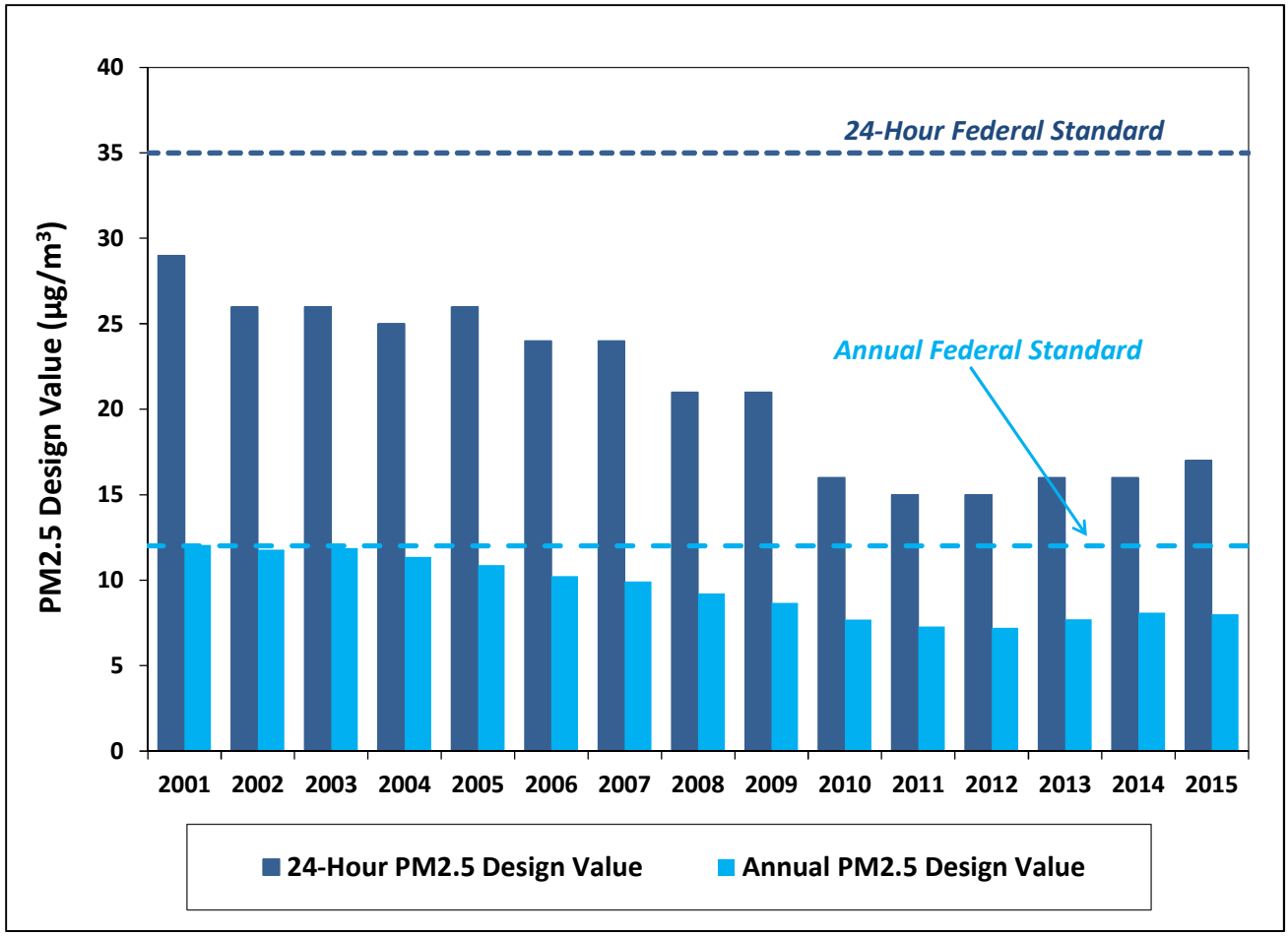

FIGURE 3-8

Coachella Valley Trend of 24-Hour and Annual Average PM2.5 Design Values, 2001–2015

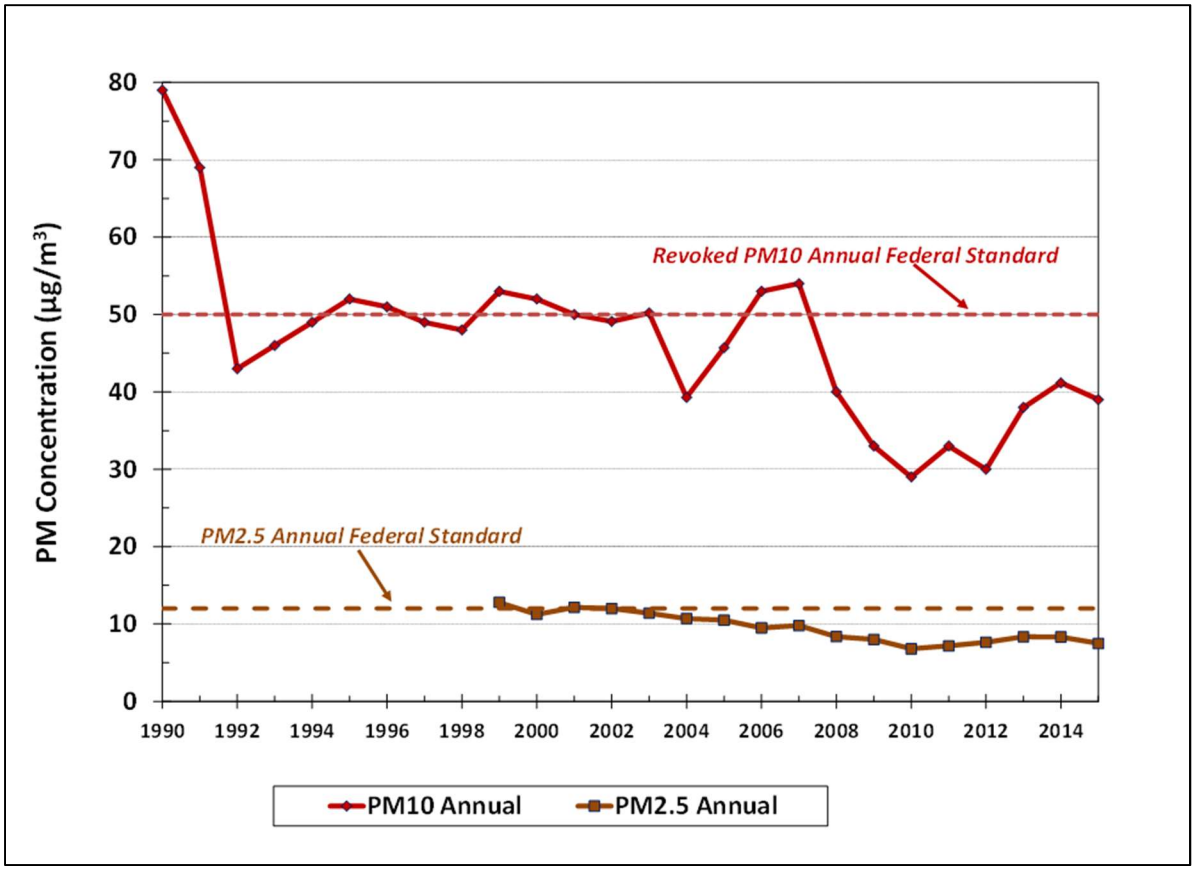

FIGURE 3-9
Coachella Valley Trend of Annual Average PM10 and PM2.5, 1990–2015

Desert Hot Springs PM2.5 Monitoring

In addition to the routine PM2.5 measurements, SCAQMD has been measuring PM2.5 since May 28, 2014 with a continuous FEM instrument in Desert Hot Springs. This station is in the predominantly downwind direction of the 800 megawatt CPV Sentinel natural gas-powered electric generation facility.[34] Through the end of 2015, only a single day, June 19, 2015, exceeded the level of the 24-hour federal standard with a concentration of 52.3 µg/m^3. That high day was associated with a strong windblown dust event that also had very high PM10 concentrations, due to outflows from thunderstorm activity over the desert southwest. Therefore this day would qualify for flagging as a high-wind exceptional event and this PM2.5 concentration was not correlated to power plant emissions. In addition, such occasional single high values over the level of the standard have not caused a violation of the 98th percentile, 3-year design value form of the PM2.5 NAAQS.

The Desert Hot Springs PM2.5 annual average for 2015, the first full year of measurements, was 6.66 µg/m3, well below the 12.0 µg/m3 annual federal standard in this northern Coachella Valley location. While the

[34] Current and historic preliminary data from the Desert Hot Springs temporary special purpose monitor near CPV Sentinel can be found on the SCAQMD website at:
[http://www.aqmd.gov/home/library/air-quality-data-studies/special-monitoring/cpv-sentinel-monitoring]

concentrations from the continuous PM2.5 instruments, such as that used at the Desert Hot Springs station, are typically biased higher than the filter-based FRM PM2.5 measurements, the annual average concentration of 6.7 µg/m3 is slightly above the 2015 FRM PM2.5 annual average measured at Palm Springs (5.8 µg/m3) and slightly below that measured at Indio (7.5 µg/m3).

Particulate Matter (PM10)

PM10 is measured daily at both Indio and Palm Springs by supplementing the (primary) 1-in-3-day Federal Reference Method (FRM) filter sampling at Indio and the 1-in-6-day FRM sampling at Palm Springs with (secondary) continuous hourly Federal Equivalent Method (FEM) measurements at both stations. In addition, a third station has been operational in the community of Mecca in the southeastern Coachella Valley since 2013, measuring PM10 with a real-time FEM sampler. This monitoring was started at the request of U.S. EPA Region IX to help evaluate windblown dust in that portion of the Coachella Valley, which is potentially impacted by high-wind natural events, agricultural activities, and fugitive dust from the exposed shoreline of the receding Salton Sea.

Although exceedances of the ozone standard in the Coachella Valley area are primarily due to the transport of ozone and its precursors from the densely populated areas of the upwind Basin to the west, PM10 in the Coachella Valley is largely due to locally generated sources of fugitive dust (e.g., construction activities, re-entrained dust from paved and unpaved road travel, and natural wind-blown sources). The Coachella Valley is subject to frequent high winds that generate wind-blown sand and dust, leading to high episodic PM10 concentrations, especially from disturbed soil and natural desert blowsand[35] areas. PM10 is the only pollutant which often reaches higher concentrations in the SSAB than in the Basin. All days in recent years that exceeded the 24-hour PM10 NAAQS at the Indio, Palm Springs, or Mecca stations would not have exceeded that standard except for the contribution of windblown dust and sand due to strong winds in the upwind source area (high-wind natural events).

On some of the Coachella Valley's high PM10 days, long-range transport of wind-generated dust and sand occurs with relatively light winds in the Coachella Valley, when entrained dust from desert thunderstorm outflows is transported to the Coachella Valley from the desert areas of southeastern California, Arizona, Nevada or northern Mexico. These events are typically seen in the summer months with southeasterly flows and thunderstorm activity related to the North American Monsoon.[36] In the more extreme cases seen in the southwestern U.S. deserts, a deep wall of dust entrained by the thunderstorm downdraft and outflow can advance long distances from the origin, creating dust storms that are often referred to as *haboobs*.

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[35] The blowsand process is a natural sand migration caused by the action of winds on the vast areas of sand in the Coachella Valley. The sand is supplied by weather erosion of the surrounding mountains and foothills. Although the sand migration is somewhat disrupted by urban growth in the Valley, the overall region of blowsand activity encompasses approximately 130 square miles, extending from near Cabazon in the San Gorgonio Pass to the Salton Sea.

[36] Adams, D.K., and A.C. Comrie. (1979). The North American Monsoon. *Bull. Amer. Meteor. Soc.,* 78, 2197-2213. [http://journals.ametsoc.org/doi/pdf/10.1175/1520-0477%281997%29078%3C2197%3ATNAM%3E2.0.CO%3B2]
_____. (2004). The North American Monsoon. Reports to the Nation on our Changing Planet. NOAA/National Weather Service. [http://www.cpc.noaa.gov/products/outreach/Report-to-the-Nation-Monsoon_aug04.pdf]

On other high PM10 days, local windblown dust and sand is generated from strong winds in the Coachella Valley. Air forced through the San Gorgonio Pass (also referred to as Banning Pass) can create strong northwesterly winds along the centerline of the Coachella Valley. This wind forcing is often related to a marine air mass with a deep marine layer and strong westerly onshore (sea-breeze) flows in the South Coast Air Basin pushing through the San Gorgonio Pass. On other days, storm systems with frontal passages create strong winds through the San Gorgonio Pass and along the Valley. Hourly averaged winds measured near Cathedral City, in the Whitewater River Wash near the centerline of the Coachella Valley, typically exceeded 25 mph for at least one hour on approximately one third of the days in each year.

In 2015, high-wind natural events occurred on eight days that caused high 24-hour PM10 concentrations over the federal standard at the monitors at Indio, Palm Springs, or Mecca. Eight days in 2015 were flagged as exceptional events due to high winds. The days for which PM10 data was flagged for high-wind exceptional events in 2014 and 2015 are summarized in Table 3-3. Seven high-wind events in 2014 and four more in 2015 were associated with strong onshore winds from the Basin through the San Gorgonio Pass and down the Coachella Valley. Two days in 2014 and four days in 2015 had high PM10 due to strong outflows from thunderstorms over Arizona and northern Mexico that entrained dust and sand that was transported into the Coachella Valley. Some of the highest PM10 concentrations measured in the Coachella Valley in 2014 and 2015 occurred because of these monsoonal thunderstorm events.

As was done for similar high-wind events in prior years, the 2014 and 2015 events in the Coachella Valley have been flagged in the U.S. EPA Air Quality System (AQS) database as high-wind exceptional events, in accordance with the U.S. EPA Exceptional Events Rule, with further documentation and U.S. EPA concurrence pending. After excluding days flagged due to high-wind natural events, the federal 24-hour and former annual PM10 standards were not exceeded at the Coachella Valley stations in 2014, nor in 2015. Therefore, the maximum 2015 24-hour PM10 concentration (152 $\mu g/m^3$) and annual average (39 $\mu g/m^3$) were 100 and 78 percent of the current 24-hour federal PM10 standard and the revoked annual federal standard (50 $\mu g/m^3$), respectively.[37]

[37] Technically, a 24-hour PM10 concentration ≥ 155 $\mu g/m^3$ is required to exceed the federal standard, due to rounding requirements. While Coachella Valley concentrations near, but below 155 $\mu g/m^3$, are also influenced by high winds, exceptional event flagging may only apply to data that exceeds a NAAQS. Likewise, the revoked federal annual PM10 standard required an annual PM10 concentration ≥ 50.1 $\mu g/m^3$ to exceed that standard.

TABLE 3-3

High-Wind Exceptional Event Days in the Coachella Valley in 2014 and 2015

Date	Palm Springs PM10 (µg/m³)	Indio PM10 (µg/m³)	Mecca PM10 (µg/m³)#	Event Description
03/26/2014	113*	**168**	123*	high winds
04/12/2014	57*	**243**	**183***	high winds
04/13/2014	32*	**168**	132*	high winds
04/25/2014	49*	52	**183***	high winds
05/10/2014	73*	**215**	**226***	high winds
06/13/2014	29*	101	**183***	high winds
06/27/2014	38*	**165**	130*	high winds
07/27/2014**	106*	152	152*	high winds – monsoonal thunderstorms
08/18/2014	**313***	**298**	**237***	high winds – monsoonal thunderstorms
05/07/2015	15*	ND	**209***	high winds
07/08/2015	23*	**174**	**180***	high winds – monsoonal thunderstorms
07/17/2015	**161**	**337**	**306***	high winds – monsoonal thunderstorms
08/19/2015	48*	**181**	147*	high winds – monsoonal thunderstorms
09/09/2015	**187**	**176**	128*	high winds – monsoonal thunderstorms
11/02/2015	ND	**182**	87*	high winds
12/14/2015	11*	55	**203***	high winds
12/26/2015	13*	100	**300***	high winds

ND = No Data

Bold text indicates concentrations in excess of the PM10 NAAQS

In 2014 Mecca PM10 monitor was considered special purpose for evaluation purposes and the data was not submitted to the U.S. EPA AQS database; the 2014 Mecca data considered preliminary and subject to change in validation; 2015 Mecca FEM PM10 data was submitted to the AQS database, including exceptional event flags

* Indicates measurement with continuous FEM (TEOM) instrument; FRM filter is primary measurement when available

** Peak measured concentrations on 7/27/14 did not technically exceed the federal PM10 standard, which requires a 24-hour average of 155 µg/m³, or above to exceed

When considering the form of the federal PM10 standards, after excluding the flagged high-wind exceptional events, the 3-year (2013–2015) design values for the Coachella Valley are 150 µg/m^3 for the 24-hour average and 38 µg/m^3 for the annual average (former standard). These are 100 and 70 percent of the 24-hour and former annual PM10 federal standards, respectively, and 304 and 190 percent of the California State 24-hour (50 µg/m^3) and annual average (20 µg/m^3) PM10 standards. Figure 3-9 (in the previous section) shows the trend of the annual average PM10 concentrations in the Coachella Valley for the station showing the highest PM10 measurements from 1990 through 2015, along with the annual PM2.5 trend.

For each routine District ambient air monitoring station, the annual arithmetic mean, percent of sampling days exceeding State and federal standards, and maximum 24-hour average PM concentrations are shown in Tables A-11 to A-19 in the attachment to this appendix for the years 1995-2015. Please refer to Appendix II from the 2003 AQMP for the 1976–1989 prior-year statistics and to Appendix II from the 2007 AQMP for 1990–2005 data.

Carbon Monoxide (CO)

Carbon monoxide was measured at one Coachella Valley air monitoring station (Palm Springs) in 2015. Neither the federal nor State standards were exceeded. The maximum 8-hour average CO concentration recorded in 2015 (0.7 ppm) was less than 8 percent of both the federal (9 ppm) and State (9.0 ppm) 8-hour standards. The maximum 1-hour CO concentration (2.0 ppm) was 6 percent of the federal (35 ppm) and 10 percent of the State (20 ppm) 1-hour CO standards. Historical carbon monoxide air quality data show that the Coachella Valley area has not exceeded the federal CO standards in nearly three decades.

For the 3-year period 2013–2015, the 1-hour and 8-hour design values were 1.9 ppm and 0.5, 5 and 6 percent, respectively, of the federal standards (10 percent of the State 1-hour standard and 6 percent of the State 8-hour standard).

The annual maximum 8-hour CO concentrations at all District air monitoring stations, including the Coachella Valley, are shown in Table A-20 in the attachment, for the period 1995-2015.

Nitrogen Dioxide (NO_2)

Nitrogen dioxide was measured at one station (Palm Springs) in the Coachella Valley in 2015. The maximum 1-hour average NO_2 concentration (41.5 ppb) was 42 percent of the 2010 federal 1-hour standard (100 ppb) and 23 percent of the State 1-hour standard (180 ppb). The maximum annual average NO_2 concentration (0.0062 ppm) was approximately 12 percent of the federal annual standard (0.0534 ppm) and 21 percent of the State annual standard (0.030 ppm).

For the 3-year of 2013–2015, the NO_2 design values for the Coachella Valley were 39 ppb for the 1-hour average and 0.0069 ppm for the annual average, 39 percent and 13 percent of those NAAQS, respectively.

The annual averages and annual maximum 1-hour average NO_2 concentrations for each monitoring station in the District (including the Coachella Valley) for the years 1995–2015 are shown in Tables A-21 and A-22, in the attachment to this appendix.

Sulfur Dioxide (SO_2)

Sulfur dioxide was not measured in the Coachella Valley in 2015. Historic analyses have shown SO_2 concentrations to be well below the State and federal standards and there are no significant emissions sources of SO_2 in the Coachella Valley.

Sulfates (SO_4^{2-})

Sulfate, from FRM PM10 filters, was measured at two stations (Palm Springs and Indio) in the Coachella Valley in 2015. The 2015 maximum 24-hour average sulfate concentration was 4.6 $\mu g/m^3$ and the 3-year maximum State designation value was 2.6 $\mu g/m^3$ (10 percent of the 25 $\mu g/m^3$ State sulfate standard). While still low, the 4.6 $\mu g/m^3$ peak value may not be the State designation value, since it was associated with a high-wind exceptional event that caused exceedances of the PM10 NAAQS at Indio at both the Palm Springs and Indio air monitoring stations. There is no federal sulfate standard.

The maximum 24-hour average concentrations at each SCAQMD air monitoring station, including the Coachella Valley, for the years 1995–2015 are shown in Table A-24 in the attachment.

Lead (Pb)

Lead concentrations were not measured in the Coachella Valley in 2015. Historic analyses have shown concentrations to be less than the State and federal standards and no major sources of lead emissions are located in the Coachella Valley.

Hydrogen Sulfide (H_2S)

SCAQMD started measuring H_2S near the Salton Sea at two locations in November 2013, in order to better understand odor events related to the Salton Sea and to better communicate these events to the community. One of the H_2S monitoring stations is located on Torres-Martinez tribal land that is close to the shore, in a sparsely populated area. The second monitor is located at the SCAQMD Mecca air monitoring station site (Saul Martinez Elementary School), a more populated community approximately four miles north of the Salton Sea.

A significant H_2S odor event occurred in September 2012, bringing sulfur or rotten-egg odors and widespread attention to this issue of H_2S odors from the Salton Sea. This event affected people in communities throughout the Coachella Valley, across many areas of the South Coast Air Basin, and into portions of the Mojave Desert Air Basin to the north. Over 235 complaints were registered with SCAQMD during this event, from as far west as the San Fernando Valley in Los Angeles County.

The H_2S produced in the Salton Sea is a product of anaerobic organic decay that is particularly active in the summer months, especially at the bottom of the shallow Sea with the abundant desert sunlight and heat. The 2012 event occurred during a period of moist southeasterly “monsoonal” flows in desert areas of southeastern California, along with desert thunderstorms. Strong outflow winds from thunderstorms to the south crossed the Salton Sea, causing mixing in the water layers that released and transported significant amounts of H_2S gas and the associated odors.

While strong events like that of September 2012 are uncommon, less extreme releases of H_2S can frequently cause odors in areas close to the Salton Sea. These events are more prevalent during the hot summer months, especially when the southeasterly "monsoonal" flow events occur, but they sometimes occur at other times of the year. Elevated H_2S concentrations are typically measured near the Salton Sea during wind shifts that bring flows from the south or east directions. These shifts occur most often in the early morning or the late afternoon/early evening hours in this area. The Salton Sea's receding shorelines and shallower waters may affect the number or severity of these odor events in the future.

While there is no federal standard for H_2S, the State of California has set a standard of 30 parts per billion (ppb), averaged over one hour as a level not to be reached or exceeded. The State standard was adopted in 1969, based on the thresholds for annoyance and unpleasant odors, with the purpose of decreasing odor annoyances.[38] Humans can detect H_2S odors at extremely low concentrations, down to a few ppb. Above the State standard, most individuals can smell the offensive odor and many may experience temporary symptoms such as headaches and nausea due to unpleasant odors. The CAAQS for H_2S was reviewed in 1984 and retained.

In 2014 and 2015, 24 and 27 days, respectively, had exceedances of the 1-hour State H_2S standard at the sparsely populated Torres-Martinez monitoring site at the Salton Sea. Of these, five days in 2014 and 12 days in 2015 had H_2S exceedances that lasted longer than one hour. The highest number of hourly exceedances in a day was 20, on September 9, 2015, while the next highest number of hours exceeding was six. The exceedances at this station occurred between the beginning of April and the end of October, with most occurring in August and September. The highest 1-hour concentration measured at the Torres-Martinez station in 2014 and 2015 was 183 ppb, on September 9, 2015.

Further north from the Salton Sea in Mecca, the State H_2S standard was exceeded on three days in 2014 and on 6 days in 2015, with a peak concentration of 129 ppb on September 3, 2015. The most hours in a day to exceed the standard at Mecca was six, on September 9, 2014. Most of the daily exceedances only lasted one or two hours. All the 2014 and 2015 Mecca exceedances occurred in the months of August and September. Figure 3-10 shows the 2014 and 2015 monthly number of days by station exceeding the State H_2S standard in the Coachella Valley.

[38] Collins, J., and D. Lewis. (2000). Hydrogen Sulfide: Evaluation of Current California Air Quality Standards with Respect to Children. California Office of Environmental Health Hazard Assessment document prepared for CARB. [http://www.arb.ca.gov/ch/ceh/001207/h2s_oehha.PDF]

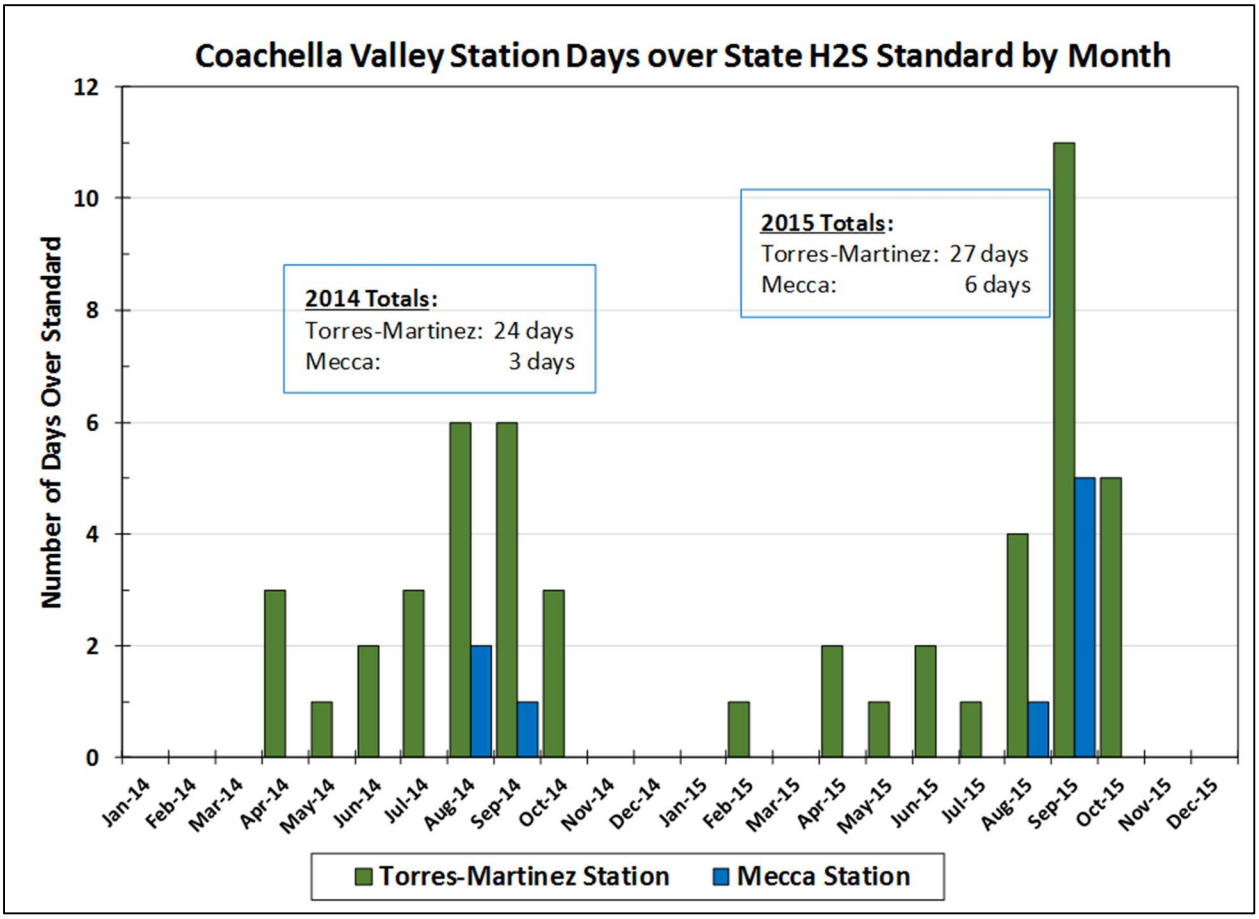

FIGURE 3-10

Number of Days in Each Month with 1-Hour Hydrogen Sulfide (H_2S) over the State Standard in 2014 and 2015 for Coachella Valley Monitoring Stations

(the Salton Sea near-shore site is labeled Torres-Martinez and the nearby community site is Mecca)

ATTACHMENT TO APPENDIX II

TABLE A-1
Air Monitoring Stations and Source/Receptor Areas*

AREA #	SOURCE/RECEPTOR AREA*	LOCATION	STN #
LOS ANGELES COUNTY			
1	Central LA	Los Angeles	087
2	Northwest Coastal LA County	West Los Angeles	091
3	Southwest Coastal LA County 1	Hawthorne (moved)	094
3	Southwest Coastal LA County 2	LAX-Hastings	820
4	South Coastal LA County 1	North Long Beach (closed in 2013)#	072
4	South Coastal LA County 2	South Long Beach	077
4	South Coastal LA County 3	Long Beach, Port	033
6	West San Fernando Valley	Reseda	074
7	East San Fernando Valley	Burbank (closed in 2014)	069
8	West San Gabriel Valley	Pasadena	088
9	East San Gabriel Valley 1	Azusa	060
9	East San Gabriel Valley 2	Glendora	591
10	Pomona/Walnut Valley	Pomona	075
11	South San Gabriel Valley	Pico Rivera	085
12	South Central LA County 1	Lynwood (moved)	084
12	South Central LA County 2	Compton	112
13	Santa Clarita Valley	Santa Clarita	090
ORANGE COUNTY			
16	North Orange County	La Habra	3177
17	Central Orange County	Anaheim	3176
18	North Coastal Orange County	Costa Mesa	3195
19	Saddleback Valley 1	El Toro (moved)	3186
19	Saddleback Valley 2	Mission Viejo	3812
RIVERSIDE COUNTY			
22	Norco/Corona	Norco	4155
23	Metropolitan Riverside County 1	Riverside – Rubidoux	4144
23	Metropolitan Riverside County 2	Riverside – Magnolia (closed in 2015)	4146
23	Metropolitan Riverside County 3	Mira Loma	4165
24	Perris Valley	Perris	4149
25	Elsinore Area	Lake Elsinore	4158
26	Temecula Valley	Temecula – Lake Skinner	4031
29	Banning Airport	Banning Airport	4164
30	Coachella Valley 1**	Palm Springs	4137
30	Coachella Valley 2**	Indio	4157
30	Coachella Valley 2**	Mecca (started PM10 in 2013)	4157
SAN BERNARDINO COUNTY			
32	Northwest San Bernardino Valley	Upland	5175
33	Southwest San Bernardino Valley	Ontario (closed in 2014)	5817
34	Central San Bernardino Valley 1	Fontana	5197
34	Central San Bernardino Valley 2	San Bernardino	5203
35	East San Bernardino Valley	Redlands	5204
37	Central San Bernardino Mountains	Crestline – Lake Gregory	5181
38	East San Bernardino Mountains	Big Bear Lake	5818

* Source/receptor areas and area numbers are mapped in Figure A-1
The four near-road monitoring sites started in 2014-2015 are not listed, please refer to Chapter 1 of this appendix for more information

** Salton Sea Air Basin

Site continues to monitor filter based (FRM) PM2.5

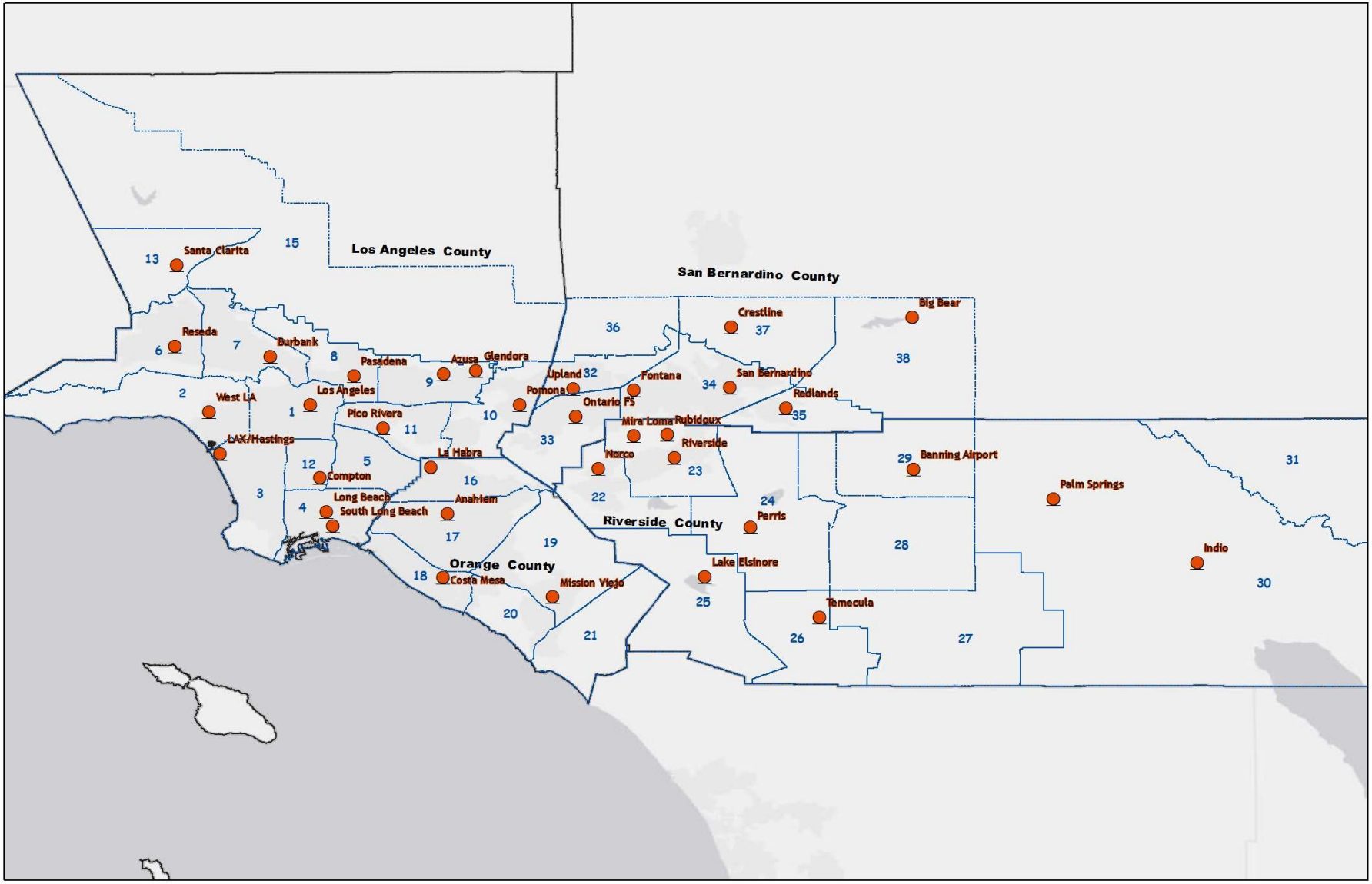

FIGURE A-1
South Coast Air Basin and Adjoining Areas of Salton Sea Air Basin
(with Source/Receptor Areas)

TABLE A-2
Ozone – Number of Days Exceeding the 2015 Federal Standard
(0.070 ppm, 8-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	104	65	41	40	26*	32	33	26	48	35	20	24	27	37	29	8	18	18	15	18	27
069	East San Fernando Valley	58	37	20	29	27	29	20	21	43	48	22	32	18	31	27	8	10	15	17	2	--
072	South Coastal Los Angeles County 1	4	5	1*	3	2	2	0	0	0	2	0	0	1	1	0	1	0	0	0	--	--
033	South Central Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0	0	0	1	0
074	West San Fernando Valley	48	68	18	32	12	12	34	60	91	82	43	55	43	37	28	35	35	38	20	27	32
075	Pomona/Walnut Valley	84	41	20	34	18	19	13	32	46	36	30	40	26	46	36	10	23	28	22	53	53
084	South Central Los Angeles County 1															--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0	0	0	1	4	1
085	South San Gabriel Valley	59	31	22	29	9	11	7	5	17	12	--	8*	8	12	5	1	1	6	1	7	11
087	Central Los Angeles	32	23	9	14	11	10	8	6	14	13	3	7	4	6	5	1	0	2	0	6	6
088	West San Gabriel Valley	83	54	26	33	18	36	32	28	52	46	19	34	17	26	19	5	13	20	2	13	18
090	Santa Clarita Valley	81	79	63	50	42	50	50	102	100	91	79	78	62	79	75	40	51	81	57	64	52
091	Northwest Coastal Los Angeles County	14	19	12	2	3	4	2	5	19	13	10	2	2	8	5	3	0	1	1	5	2
094	Southwest Coastal Los Angeles County 1	9	11	13	0	1	1	14	1	3	--	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	17	2	0	1	1	0	0	0	1	1	6	3
591	East San Gabriel Valley 2	117	88	67	61	29	48	65	47	67	49	36	41	41	60	62	41	40	57	40	58	48
ORANGE COUNTY:																						
3176	Central Orange County	15	10	1	10	1	8	0*	3	15	49	7	4	6	10	2	1	1	0	0	6	1
3177	North Orange County	27	23	9	14	8	11	5	4	12	11	2	11	9	14	8	4	3	3	2	6	7
3186	Saddleback Valley 1				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	11	3	1	10	1	3	1	0	17	11	2	0	1	5	3	2	1	1	2	6	2
3812	Saddleback Valley 2	--	--	--	--	--	4	16	13	26	32	10	22	10	25	12	2	4	4	5	10	8
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	70	93	75*	63	64	87	98	99	88	86	75	78	81	68	71	76	66	76	76	55	47
4144	Metropolitan Riverside County	117	116	98*	84	64	69	64	89	98	87	79	73	66	85	54	74	90	70	36	66	55
4149	Perris Valley	118	119	78	52	28	89	102	90	81	58	2	97	87	92	88	76	75	64	58	59	49
4157	Coachella Valley 2**	61	55	11	39	49	22	62	63	59	67	56	41	48	43	39	45	40	43	35	24	11
4158	Lake Elsinore	104	24	1	75	90	87	101	90	78	76	68	69	52	88	63	40	43	29	24	13	31
4031	Temecula Valley			--	--	--	--	--	--	--	--	--	--	--	--	--	--					
4164	Banning Airport	40	51	176	93	88	80	94	100	107	89	86	90	58	94	89	75	57	71	65	58	46
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--			60	28	56	58	70	31	52	51
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	108	59	68	57	38	50	59	41	62	46	43	64	54	64	69	52	45	66	44	57	66
5181	Central San Bernardino Mountains	129	132	109	121	127	109	127	128	115	125	119	103	113	114	104	97	102	99	98	93	86
5197	Central San Bernardino Valley 1	96	84	64	64	38	45	54	42	69	68	61	65	55	79	63	49	53	85	66	52	57
5203	Central San Bernardino Valley 2	116	121	110	70	65	68	75	59	83	77	70	70	70	83	76	58	65	74	51	75	78
5204	East San Bernardino Valley	126	130	128	86	77	97	87*	90	109	101	53	78	79	100	90	82	96	98	90	79	76
	District Maximum	129	132	176	121	127	109	127	128	115	125	119	103	113	114	104	97	102	99	98	93	86

* Less than 12 full months of data

** Salton Sea Air Basin

Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-3
Ozone – Number of Days Exceeding the 2008 Federal Standard
(0.075 ppm, 8-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	88	53	26	33	19*	27	25	17	35	21	14	17	20	28	17	4	12	10	6	11	17
069	East San Fernando Valley	49	25	15	24	15	23	7	14	38	36	10	23	13	17	14	5	6	8	6	1	--
072	South Coastal Los Angeles County 1	2	2	0*	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	--	--
033	South Central Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	0	0
074	West San Fernando Valley	39	49	11	23	7	10	21	44	73	62	26	33	28	26	19	22	26	23	11	11	15
075	Pomona/Walnut Valley	73	36	16	28	14	10	5	24	38	22	17	27	18	35	23	7	16	15	15	33	36
084	South Central Los Angeles County 1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0	0	0	1	2	0
085	South San Gabriel Valley	46	24	15	22	4	9	5	3	14	6	--	4*	5	5	3	1	0	0	0	5	2
087	Central Los Angeles	21	17	8	11	5	8	4	6	8	5	2	3	3	3	2	1	0	1	0	2	0
088	West San Gabriel Valley	70	45	21	26	10	25	23	19	40	25	12	23	11	16	12	3	5	9	0	7	7
090	Santa Clarita Valley	66	68	42	39	25	36	41	90	89	74	68	62	44	62	64	28	31	57	40	45	37
091	Northwest Coastal Los Angeles County	10	10	6	2	1	1	1	1	12	5	4	0	2	2	3	1	0	0	0	4	0
094	Southwest Coastal Los Angeles County 1	5	9	8	0	1	0	6	0	1	--	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	12	1	0	0	0	0	0	0	0	1	3	1
591	East San Gabriel Valley 2	105	69	45	49	19	30	49	33	58	33	26	29	26	45	42	24	30	45	24	38	34
ORANGE COUNTY:																						
3176	Central Orange County	8	7	1	7	1	3	0*	1	11	29	2	3	1	4	1	1	0	0	0	4	1
3177	North Orange County	18	13	8	6	4	7	2	2	7	3	0	7	8	5	3	1	0	2	1	2	2
3186	Saddleback Valley 1	8	11	5	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	3	2	1	2	0	2	0	0	7	5	0	0	0	3	0	1	1	1	1	4	1
3812	Saddleback Valley 2	--	--	--	--	--	4	8	6	15	16	6	13	5	15	10	2	2	1	2	5	3
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	52	73	54*	47	38	61	77	82	70	55	61	61	58	51	53	55	49	51	46	35	26
4144	Metropolitan Riverside County	104	99	79*	69	46	50	50	64	86	70	55	57	46	64	35	50	68	47	26	41	39
4149	Perris Valley	101	93	67	41	17	71	85	72	72	44	16	83	73	77	67	53	54	46	34	38	31
4157	Coachella Valley 2**	44	46	3	22	30	18	40	45	40	50	34	28	29	27	24	22	19	24	18	10	4
4158	Lake Elsinore	82	18	1	63	64	65	77	67	57	43	41	54	35	69	37	23	28	17	12	6	19
4031	Temecula Valley	0	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	14	4	3	4	6
4164	Banning Airport	--	--	127	63	63	64	72	86	84	64	64	74	43	74	70	62	41	53	41	38	25
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	44	23	47	22	40	36	47	21	29	36
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	97	52	52	47	24	32	52	32	46	28	30	51	35	50	49	42	36	45	27	42	53
5181	Central San Bernardino Mountains	113	120	89	111	104	94	103	112	107	92	98	96	93	97	92	75	84	86	72	68	61
5197	Central San Bernardino Valley 1	88	75	47	56	30	26	43	34	69	48	45	46	43	58	48	38	39	62	42	37	39
5203	Central San Bernardino Valley 2	109	105	89	60	54	50	62	42	62	55	56	56	51	63	62	47	39	54	36	51	57
5204	East San Bernardino Valley	118	111	105	72	68	76	73*	74	101	74	44	62	58	75	73	61	80	79	63	55	54
	District Maximum	118	120	127	111	104	94	103	112	107	92	98	96	93	97	92	75	84	86	72	68	61

* Less than 12 full months of data

** Salton Sea Air Basin

Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-4
Ozone – Number of Days Exceeding the 1997 Federal Standard
(0.084 ppm, 8-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	68	36	17	22	7*	15	18	11	21	10	6	10	14	14	7	0	3	2	1	3	7
069	East San Fernando Valley	29	11	6	13	3	11	4	5	21	7	2	12	7	8	5	0	0	2	0	0	--
072	South Coastal Los Angeles County 1	0	0	0*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--
033	South Central Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	0	0
074	West San Fernando Valley	20	28	2	12	0	0	7	27	49	30	12	17	9	14	8	5	7	10	3	2	4
075	Pomona/Walnut Valley	55	22	10	20	8	5	3	14	24	13	11	16	10	19	9	0	6	4	4	9	14
084	South Central Los Angeles County 1															--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	0	0	0	0	0	0
085	South San Gabriel Valley	24	11	7	12	2	4	2	0	2	0	--	3*	2	1	1	1	0	0	0	1	0
087	Central Los Angeles	9	7	3	9	2	4	1	0	2	1	1	0	2	1	1	0	0	0	0	1	0
088	West San Gabriel Valley	53	27	13	17	3	13	9	10	28	10	5	7	6	6	6	0	0	1	0	4	0
090	Santa Clarita Valley	48	42	25	34	11	12	25	52	69	52	47	40	17	35	33	7	18	29	18	16	15
091	Northwest Coastal Los Angeles County	1	4	0	0	0	0	0	0	1	1	1	0	1	1	1	0	0	0	0	2	0
094	Southwest Coastal Los Angeles County 1	3	4	2	0	0	0	0	0	0	--	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	4	0	0	0	0	0	0	0	0	0	0	0
591	East San Gabriel Valley 2	84	52	24	37	7	21	28	21	40	16	13	15	14	26	19	7	16	14	7	14	11
ORANGE COUNTY:																						
3176	Central Orange County	1	0	1	4	0	1*	0	0	1	8	0	1	1	1	0	1	0	0	0	0	0
3177	North Orange County	8	6	3	4	1	2	2	0	2	0	0	4	2	0	0	1	0	0	0	2	0
3186	Saddleback Valley 1					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
3812	Saddleback Valley 2	--	--	--	--	--	2	2	1	8	4	1	6	2	6	3	0	0	0	0	2	2
RIVERSIDE COUNTY:																						1
4137	Coachella Valley 1**	27	52	26*	30	20	28	39	46	43	32	35	23	21	17	22	14	14	16	11	7	5
4144	Metropolitan Riverside County	78	72	52*	57	22	26	33	35	62	35	32	30	17	38	11	21	35	17	7	12	17
4149	Perris Valley	73	63	36	28	6	39	56	39	46	20	0	53	38	41	29	23	21	11	8	7	12
4157	Coachella Valley 2**	17	23	1	12	7	7	15	15	19	18	18	7	6	8	5	3	6	5	5	2	1
4158	Lake Elsinore	51	10	1	44	33	26	46	41	36	21	15	24	19	32	16	6	12	5	1	1	12
4031	Temecula Valley			--	--	--	--	--	--	--	--	--	--	--	--	--	--					
4164	Banning Airport	18	18	102	39	31	34	47	48	62	41	39	43	16	45	41	21	22	24	11	11	11
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--			23	6	10	22	19	7	6	20
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	78	37	28	39	16	18	30	19	34	18	15	25	18	30	25	10	17	25	12	15	27
5181	Central San Bernardino Mountains	91	96	66	86	82	64	74	82	71	66	69	59	62	67	60	41	48	43	39	41	30
5197	Central San Bernardino Valley 1	72	60	30	42	15	16	31	21	43	29	23	29	19	35	27	7	22	35	21	14	20
5203	Central San Bernardino Valley 2	85	87	63	47	30	23	38	29	45	39	31	29	25	43	27	14	24	27	11	21	29
5204	East San Bernardino Valley	96	88	77	58	36	47	52*	44	72	56	24	36	25	50	43	24	41	43	27	27	30
	District Maximum	96	96	102	86	82	64	74	82	72	66	69	59	62	67	60	41	48	43	39	41	30

* Less than 12 full months of data

** Salton Sea Air Basin

Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-5
Ozone – Number of Days Exceeding the Former (1979) 1-Hour Federal Standard
(0.12 ppm, 1-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	63	26	11	19	2*	11	9	5	11	2	4	7	3	7	4	0	0	1	0	0	0
069	East San Fernando Valley	20	6	2	7	0	3	2	1	4	2	2	6	0	1	1	0	0	0	0	0	--
072	South Coastal Los Angeles County 1	0	0	0*	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	--	--
033	South Central Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	0	0
074	West San Fernando Valley	8	11	0	7	0	0	2	9	14	2	2	6	1	0	1	0	3	1	0	0	0
075	Pomona/Walnut Valley	47	16	7	18	2	3	1	5	13	4	3	9	2	5	1	0	0	0	1	0	2
084	South Central Los Angeles County 1	0	1	0	0	0	0	0	0	0	0	0	0	0	0*	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	0	0	0	0
085	South San Gabriel Valley	20	32	6	10	0	2	1	0	1	0	--	1*	2	0	1	0	0	0	0	0	0
087	Central Los Angeles	5	24	0	5	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
088	West San Gabriel Valley	44	54	5	14	0	7	1	3	7	1	2	5	3	0	3	0	0	0	0	0	0
090	Santa Clarita Valley	26	68	13	16	0	1	9	32	35	13	11	20	2	8	5	1	3	6	2	2	1
091	Northwest Coastal Los Angeles County	1	13	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
094	Southwest Coastal Los Angeles County 1	0	1	0	0	1	0	0	0	0	0*	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	0*	0	0	0	0	0	0	0	0	0	0	0
591	East San Gabriel Valley 2	73	49	18	28	3	11	13	12	22	5	8	10	3	12	7	0	4	3	1	5	2
ORANGE COUNTY:																						
3176	Central Orange County	2	1	0	2	0*	1	0*	0	2	0	0	0	1	0	0	0	0	0	0	0	0
3177	North Orange County	4	5	1	5	0	1	0	0	1	0	0	3	1	0	0	0	0	0	0	0	0
3186	Saddleback Valley 1	1	2	2	2	0	1*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3812	Saddleback Valley 2	--	--	--	--	--	2*	1	2	4	0	1	0	0	0	0	0	0	0	0	0	0
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	9	12	4*	8	1	0	6	2	4	1	4	2	1	0	0	0	0	1	0	0	0
4144	Metropolitan Riverside County	52	36	13*	32	3	3	7	12	18	8	3	8	2	8	0	1	4	1	0	1	1
4149	Perris Valley	36	31	6	8	0	15	19	4	7	2	1	12	4	4	1	0	2	0	0	0	0
4157	Coachella Valley 2**	3	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4158	Lake Elsinore	23	17	4	22	5	1	12	6	7	2	3	3	3	6	1	0	1	0	0	0	1
4031	Temecula Valley	0	0*	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0	0	0	0
4164	Banning Airport	--	--	--	25	5	4	16	13	27	7	10	8	1	10	1	0	3	0	0	0	0
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	4	0	4	0	0	1	0	0	1	1
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	67	35	12	30	4	10	14	5	15	3	8	14	7	9	3	1	5	4	3	1	2
5181	Central San Bernardino Mountains	65	62	29	57	30	17	26	22	34	9	18	9	13	16	7	6	8	2	0	1	3
5197	Central San Bernardino Valley 1	57	38	10	32	4	7	13	8	26	7	9	12	9	8	3	2	5	5	2	1	3
5203	Central San Bernardino Valley 2	61	63	32	39	14	7	18	6	19	6	9	10	8	11	2	1	2	0	2	0	6
5204	East San Bernardino Valley	69	65	35	43	12	11	21*	23	38	12	6	11	7	12	1	1	7	3	3	2	2
	District Maximum	73	68	35	57	30	17	26	32	38	13	18	20	13	16	7	6	8	6	3	5	6

* Less than 12 full months of data
** Salton Sea Air Basin
Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-6
Ozone – Annual Maximum 8-Hour Average (ppb)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	146	136	123	147	98	142	130	102	124	104	122	120	113	111	107	81	72	95	85	92	96
069	East San Fernando Valley	115	116	103	124	99	118	104	95	106	109	108	128	96	109	96	84	84	88	83	79	--
072	South Coastal Los Angeles County 1	78	83	73	75	81	81	70	64	68	74	69	58	73	74	67	84	61	67	70	--	--
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	63	66	69	72	94
074	West San Fernando Valley	112	124	94	118	84	84	116	121	127	115	113	109	105	103	100	91	103	98	92	92	66
075	Pomona/Walnut Valley	150	126	115	131	103	122	107	111	121	100	112	127	109	110	99	82	96	92	99	99	98
084	South Central Los Angeles County 1	83	86	56	64	67	57	55	64	62	52	63	69	81	--	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	78	60	65	70	80	81	72
085	South San Gabriel Valley	119	104	101	120	98	114	100	79	97	81	65	94	100	93	101	86	74	75	72	92	81
087	Central Los Angeles	107	95	92	111	108	103	99	79	88	91	98	79	102	90	100	80	65	77	69	94	74
088	West San Gabriel Valley	134	126	113	140	96	134	119	101	108	102	114	117	101	100	114	81	84	86	75	96	84
090	Santa Clarita Valley	150	129	129	147	98	110	128	144	152	133	141	120	110	131	122	105	122	112	104	110	108
091	Northwest Coastal Los Angeles County	85	95	84	79	82	79	80	77	104	89	90	74	87	96	94	78	68	73	75	94	72
094	Southwest Coastal Los Angeles County 1	101	93	89	69	84	75	79	72	77	60	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	76	66	75	75	70	70	67	75	81	80	77
591	East San Gabriel Valley 2	158	150	130	171	103	146	134	114	134	107	130	127	117	118	118	99	111	110	100	101	102
ORANGE COUNTY:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3176	Central Orange County	86	84	87	104	76	97	70	78	87	97	77	88	99	86	77	88	92	67	70	81	80
3177	North Orange County	109	103	100	115	91	99	89	79	87	79	75	114	107	84	82	96	74	78	78	88	82
3186	Saddleback Valley 1	97	101	96	110	81	110	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	81	80	77	85	75	86	73	70	88	87	72	62	72	79	72	76	77	76	83	79	79
3812	Saddleback Valley 2	--	--	--	--	--	87	97	93	105	90	85	105	90	104	95	82	83	78	82	88	88
RIVERSIDE COUNTY:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4137	Coachella Valley 1**	132	125	117	136	104	104	113	124	110	106	116	109	102	101	98	99	98	100	104	93	92
4144	Metropolitan Riverside County	146	162	129	169	110	112	119	124	140	114	129	117	111	116	100	98	115	102	103	104	105
4149	Perris Valley	161	133	112	129	97	126	135	117	121	104	78	122	116	114	108	107	112	93	90	94	102
4157	Coachella Valley 2**	111	100	94	115	107	96	98	110	105	99	95	90	95	92	90	87	90	89	87	91	85
4158	Lake Elsinore	142	123	85	143	123	104	120	114	137	113	119	109	109	118	105	91	106	89	89	86	98
4031	Temecula Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	85	82	78	100	87
4164	Banning Airport	127	117	148	134	123	112	128	130	146	116	132	116	114	120	104	107	111	98	103	97	97
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	119	104	107	90	94	104	102	96	102	104
SAN BERNARDINO COUNTY:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5175	Northwest San Bernardino Valley	166	152	132	171	116	149	138	116	134	104	121	131	115	122	121	97	122	111	111	101	106
5181	Central San Bernardino Mountains	203	164	138	206	142	148	139	139	142	145	145	142	137	126	117	123	136	112	105	106	127
5197	Central San Bernardino Valley 1	156	162	133	172	105	138	135	123	148	123	128	123	122	124	128	100	124	110	122	105	111
5203	Central San Bernardino Valley 2	165	173	137	180	132	126	144	112	137	129	129	126	121	122	126	104	121	109	112	99	117
5204	East San Bernardino Valley	174	164	143	186	130	130	143	122	153	135	123	135	124	120	122	111	133	109	119	104	115
	District Maximum	203	173	148	206	142	149	144	144	153	145	145	142	137	131	128	123	136	112	122	110	127

+ Site relocated * Less than 12 full months of data ** Salton Sea Air Basin

Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-7
Ozone – Annual Maximum 4th Highest 8-Hour Average (ppb)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	138	127	113	126	95	108	102	97	104	92	87	90	96	101	91	76	82	79	80	81	88
069	East San Fernando Valley	106	98	95	101	84	97	87	91	96	89	81	97	88	92	86	77	81	81	79	69	--
072	South Coastal Los Angeles County 1	71	73	67	65	68	66	60	59	63	70	59	56	56	64	64	57	60	60	60	--	--
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57	54	57	61	87
074	West San Fernando Valley	101	110	83	100	81	80	89	111	119	101	98	103	92	95	93	87	91	95	84	83	56
075	Pomona/Walnut Valley	136	113	95	120	89	88	82	99	109	95	96	108	102	100	95	81	86	85	85	90	94
084	South Central Los Angeles County 1	51	57	53	51	41	50	54	49	57	65	63	64	56	55+	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	64	50	61	64	63	73	65
085	South San Gabriel Valley	105	93	97	102	80	86	81	74	82	78	51	78	79	77	72	59	63	71	70	79	75
087	Central Los Angeles	91	93	81	96	79	85	76	77	82	77	70	75	72	73	73	64	60	68	60	72	72
088	West San Gabriel Valley	130	117	100	117	86	104	90	95	101	93	85	96	89	91	95	75	77	80	70	86	82
090	Santa Clarita Valley	130	123	116	127	95	97	112+	131	137	107	118	112	101	108	103	88	101	102	94	97	91
091	Northwest Coastal Los Angeles County	81	88	78	70	69	71	64	73	83	76	76	67	67	73	75	70	62	65	59	77	69
094	Southwest Coastal Los Angeles County 1	78	86	83	63	66	65	79	64	70	56*	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	86*	68	62	66	65	61	59	62	59	60	75	69
591	East San Gabriel Valley 2	148	140	121	142	96	112	110	110	123	95	97	106	104	112	108	91	95	95	88	96	95
ORANGE COUNTY:																						
3176	Central Orange County	82	81	68	87	61	74	66	69	80	88	75	70	73	76	68	64	67	65	63	76	65
3177	North Orange County	96	90	82	93	78	83	73	71	80	75	65	89	82	78	75	71	69	70	66	75	73
3186	Saddleback Valley 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	75	70	70	76	70	67	69	66	79	75	66	60	65	75	66	60	67	60	65	76	68
3812	Saddleback Valley 2	--	--	--	--	--	87	72	81	95	84	78	90	80	92	84	69	74	71	74	78	75
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	106	116	101	108	98	96	111	109	105	99	108	98	97	96	96	93	92	94	90	89	86
4144	Metropolitan Riverside County	142	130	118	136	104	106	109	109	120	111	105	111	99	111	89	94	107	96	94	91	96
4149	Perris Valley	132	122	105	115	91	111	124	107	116	95	82	113	103	106	101	100	94	90	88	89	94
4157	Coachella Valley 2**	96	98	82	97	89	87	93	97	100	94	92	85	87	88	85	84	85	85	85	84	79
4158	Lake Elsinore	126	108	111	128	106	98	111	104	112	102	97	101	97	108	96	88	92	87	81	79	93
4031	Temecula Valley	81	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	73	77	75	77	79
4164	Banning Airport	101	107	93	81	114+	102	116	113	127	112	119	104	95	108	100	99	100	95	91	94	91
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	105	103	100	109	86	92	96	95	92	87	93
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	145	138	112	137	103	117	120	105	114	102	101	112	112	108	102	91	98	102	95	93	101
5181	Central San Bernardino Mountains	167	155	125	183	133	122	133	131	130	122	130	111	126	120	108	109	106	103	99	102	107
5197	Central San Bernardino Valley 1	143	137	115	132	98	100	123	114	132	111	113	114	112	110	100	94	105	106	100	93	100
5203	Central San Bernardino Valley 2	152	145	127	145	115	111	128	105	123	112	113	118	117	112	101	96	101	100	97	95	105
5204	East San Bernardino Valley	162	138	126	148	115	112	131	117	137	119	113	124	112	112	100	97	113	105	104	99	102
	District Maximum	167	155	127	183	133	122	133	131	137	122	130	124	126	120	108	109	113	106	104	102	107

+ Site relocated * Less than 12 full months of data ** Salton Sea Air Basin

Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-8
Ozone – 3-Year 8-HourDesign Values (ppb)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	143	135	126	122	111	109	101	102	101	97	94	89	91	95	96	89	83	79	80	80	83
069	East San Fernando Valley	108	103	99	98	93	94	89	91	91	92	88	89	88	92	88	85	81	79	80	76	74
072	South Coastal Los Angeles County 1	74	73	70	68	66	66	64	61	60	64	64	61	57	58	61	61	60	58	59	60	60
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	58	56	56	57	58
074	West San Fernando Valley	114	106	98	97	88	87	83	93	106	110	106	100	97	96	93	91	90	91	90	87	84
075	Pomona/Walnut Valley	139	129	114	109	101	99	86	89	96	101	100	99	102	103	99	92	87	84	85	86	89
084	South Central Los Angeles County 1	60	56	54	57	48	47	48	51	53	57	61	64	61	58							
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	58	56	58	58	62	66	67
085	South San Gabriel Valley	114	108	98	97	93	89	82	80	79	78	70	69	69	78	76	69	64	63	67	73	74
087	Central Los Angeles	101	100	88	90	85	86	80	79	78	78	76	74	72	73	72	70	65	64	62	66	68
088	West San Gabriel Valley	132	126	115	111	101	102	93	96	95	96	93	91	90	92	91	87	82	77	75	78	77
090	Santa Clarita Valley	145	135	123	122	112	106	101	113	126	125	120	112	110	107	104	99	97	97	99	97	94
091	Northwest Coastal Los Angeles County	87	86	82	78	72	70	68	69	73	77	78	73	70	69	71	72	69	65	62	67	68
094	Southwest Coastal Los Angeles County 1	81	81	82	77	70	64	68	68	69	--	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	62	64	61	65	64	64	61	60	60	60	64	68
591	East San Gabriel Valley 2	157	146	136	134	119	116	106	110	114	109	105	99	102	107	108	103	98	93	92	93	93
ORANGE COUNTY:																						
3176	Central Orange County	91	88	77	78	72	74	67	69	71	79	81	77	72	73	72	69	65	64	64	68	68
3177	North Orange County	108	101	89	88	84	84	78	75	74	75	73	76	78	83	78	74	71	70	68	70	71
3186	Saddleback Valley 1	93	91	83	83	77	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	75	72	71	72	72	71	68	67	71	73	73	67	63	66	68	67	63	60	62	66	70
3812	Saddleback Valley 2	--	--	--	--	--	--	79	80	82	86	85	84	82	87	85	81	74	70	72	74	76
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	110	111	107	108	102	100	101	105	108	104	104	101	101	97	96	95	93	93	92	91	88
4144	Metropolitan Riverside County	150	140	130	128	119	115	106	108	112	113	112	109	105	107	99	98	96	98	98	93	93
4149	Perris Valley	142	132	119	114	103	105	108	114	115	106	97	96	99	107	103	102	98	94	90	89	90
4157	Coachella Valley 2**	95	95	92	92	89	91	89	92	96	97	95	90	88	86	86	85	84	84	85	84	82
4158	Lake Elsinore	130	124	115	115	115	110	105	104	109	106	103	100	98	102	100	97	92	89	86	82	84
4031	Temecula Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	79	77	76	76
4164	Banning Airport	111	111	100	93	96	99	110	110	118	117	119	111	106	102	101	102	99	98	95	93	92
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	104	102	104	98	95	91	94	94	91	89
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	151	144	131	129	117	119	113	114	113	107	105	105	108	110	107	100	97	97	98	96	96
5181	Central San Bernardino Mountains	166	162	149	154	147	146	129	128	131	127	127	121	122	119	118	112	107	106	102	101	102
5197	Central San Bernardino Valley 1	149	143	131	128	115	110	107	112	123	119	118	112	113	112	107	101	99	101	103	99	97
5203	Central San Bernardino Valley 2	155	153	141	139	129	123	118	114	118	113	116	114	116	115	110	102	99	98	99	97	99
5204	East San Bernardino Valley	166	155	142	137	129	125	119	120	128	124	123	118	116	116	108	103	103	105	107	102	101
	District Maximum	166	162	149	154	147	146	129	128	131	127	127	121	122	119	118	112	107	106	107	102	102

+ Site relocated * Less than 12 full months of data ** Salton Sea Air Basin

Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-9
Ozone – Annual Maximum 1-Hour Average (ppm)

	LOCATION	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
087	Central Los Angeles	.34	.21	.30	.31/	.29	.32	.40	.26	.29	.30	.22	.22	.21	.25
060	East San Gabriel Valley 1	.38	.32	.40	.45	.41	.35	.36	.39	.31	.36	.31	.30	.30	.33
069	East San Fernando Valley	.35	.31	.30	.39	.35	.27	.25	.31	.26	.30	.28	.23	.24	.20
091	Northwest Coastal Los Angeles County	.28	.18/	.24/	.26	.21	.23	.28	.23	.27/	.27	.20	.28	.24	.25
072	South Coastal Los Angeles County 1	.16	.15	.19	.21	.20	.23	.22	.30	.27	.23	.18	.17	.16	.16
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
074	West San Fernando Valley	.27	.34	.27	.33	.38	.25	.22	.26	.26	.25	.22	.22	.25	.23
075	Pomona/Walnut Valley	.36	.32	.41	.35	.37	.33	.31	.34	.31	.33	.27	.29	.29	.25
094	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	.19	.20	.22	.19
820	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	--	--	--	--
088	West San Gabriel Valley	.34	.32	.42	.44	.41	.33	.37/	.34	.30	.37	.26	.28	.29	.27
090	Santa Clarita Valley	.33	.33	.32	.32	.36	.29	.26/	.29	.27	.24	.24	.21	.30	.25
084	South Central Los Angeles County 1	.24	.24	.18	.29	.18	.21	.26	.23	.27	.21	.20	.24	.21	.14
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
085	South San Gabriel Valley	.35	.32	.43	.39	.39	.35	.39	.33	.27	.31	.24	.28	.30	.26
591	East San Gabriel Valley 2	--	--	--	--	.49	.39	.36	.38	.34	.39	.35	.33	.34	.34
3176	Central Orange County	.30	.19	.29	.33	.28	.26	.26	.30	.25	.25	.20	.22	.27	.24
3177	North Orange County	.30	.25	.35	.38	.31	.27	.32	.27	.32	.34	.25	.24	.29	.26
3195	North Coastal Orange County	.16	.18	.22	.21/	.16	.20	.18	.25	.25	.21	.17	.16	.13	--
3186	Saddleback Valley 1	.23	.20	.34	.32	.34	.33	.27	.29	.30	.28	.23	.20	.21	.23
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4137	Coachella Valley 1**	.22	.21	.20	.24	.21	.19	.19	.19	.20	.24	.18	.17	.20	.19
4157	Coachella Valley 2**	.16	.19	.17	.21	.11	.18	.17	.18	.19	.20	--	.16	--	.16
4155	Norco/Corona	.33	.36	.40	.33/	.34	.37	.35	.35	.30	.35	.27	.24	.25	.23
4141	Hemet/San Jacinto Valley	.19	.25	.27	--	--	--	--	--	.18*	.23	.18	.18	.18	.19
4144	Metropolitan Riverside County 1	.36	.35	.39	.34	.37	.30	.31	.36	.32	.35	.25	.29	.28	.27
4149	Perris Valley	.22	.28	.32	.25	.29	.24	.28	.26	.22	.29	.22	.20	.23	.21
4150	San Gorgonio Pass	.28	.27	.30	.27	.26	.23	.24	.26	.25	.29	.22	.21	.26	.23
4164	Banning Airport	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4163	Temecula Valley	.21	.17	.23	--	--	--	--	--	--	--	--	--	--	--
4158	Lake Elsinore	.20	.23	.30	--	--	--	--	--	--	--	--	--	--	.24
5203	Central San Bernardino Valley 2	.32	.37	.36	.34	.36	.36/	.30	.32	.30	.27/	.30	.25	.28	.30
5204	East San Bernardino Valley	.35	.33	.39	.34/	.32	.24	.29	.30	.29	.33/	.29	.24	.29	.27
5175	Northwest San Bernardino Valley	--	--	--	--	--	--	--	.36	.32	.33	.29	.28	.35	.32
5197	Central San Bernardino Valley 1	.38	.39	.42	.42	.42	.35/	.31	.32	.32	.34	.31	.29	.29	.32
5181	Central San Bernardino Mountains 1	.23	.32	.33	.40	.31	.35	.32	.28	.34	.30	.26	.29	.29	.27
	District Maximum	.38	.39	.43	.45	.49	.39	.40	.39	.34	.39	.35	.33	.35	.34

* Less than 12 full months of data / Station location change

** Salton Sea Air Basin

Refer to 2003 AQMP for 1955 to 1975 data

TABLE A-9 (CONTINUED)
Ozone – Annual Maximum 1-Hour Average (ppm)

	LOCATION	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
087	Central Los Angeles	.20	.19	.20	.16	.19	.17	.14	.12	.15	.13	.136	.116	.122
060	East San Gabriel Valley 1	.23	.28	.27	.24	.25	.21	.20	.16	.20	.14	.174	.189	.136
069	East San Fernando Valley	.20	.22	.22	.18	.17	.17	.14	.13	.18	.12	.152	.129	.128
091	Northwest Coastal Los Angeles County	.16	.18	.17	.18	.16	.14	.14	.11	.13	.12	.104	.099	.118
072	South Coastal Los Angeles County 1	.12	.11	.15	.14	.16	.11	.11	.10	.12	.13	.118	.091	.084
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--
074	West San Fernando Valley	.19	.22	.17	.19	.14	.15	.21	.12	.16	.10	.109	.140	.152
075	Pomona/Walnut Valley	.24	.24	.26	.21	.24	.22	.19	.16	.18	.14	.152	.144	.150
094	Southwest Coastal Los Angeles County	.10	.11	.15	.13	.11	.12	.13	.11	.09	.15	.095	.098	.088
820	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	--	--	--
088	West San Gabriel Valley	.26	.23	.27	.22	.26	.21	.17	.14	.17	.12	.157	.160	.137
090	Santa Clarita Valley	.23	.24	.22	.22	.26	.21	.17	.16	.18	.12	.131/	.184	.169
084	South Central Los Angeles County 1	.15	.16	.17	.12	.12	.09	.10	.08	.09	.12	.089	.077	.072
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--
085	South San Gabriel Valley	.19	.26	.26	.19	.22	.18	.14	.13	.18	.12	.139	.132	.111
591	East San Gabriel Valley 2	.29	.32	.30	.28	.30	.22	.21	.17	.22	.14	.172	.190	.152
3176	Central Orange County	.18	.25	.22	.17	.21	.13	.13	.10	.11	.10*	.132	.114	.103
3177	North Orange County	.21	.21	.21	.19	.25	.16	.15	.13	.18	.12	.137	.107	.121
3195	North Coastal Orange County	.15	.17	.15	.13	.12	.11	.10	.10	.12	.10	.102	.098	.087
3186	Saddleback Valley 1	.19	.24	.16	.16	.18	.15	.14	.13	.16	.10	.129	--	--
3812	Saddleback Valley 2	--	--	--	--	--	--	--	--	--	--	.119	.125	.136
4137	Coachella Valley 1**	.17	.18	.15*	.17	.17	.16	.16	.16	.17	.13	.124	.137	.136
4157	Coachella Valley 2 **	.16	.18	.14	.16	.12	.14	.12	.11	.13	.13	.112	.114	.114
4155	Norco/Corona	.17	.22	.23	.16	.17	.19	.16	--	--	--	--	--	--
4141	Hemet/San Jacinto Valley	.22	.19	.15	.18	.16	.15	.12	--	--	--	--	--	--
4144	Metropolitan Riverside County	.29	.24	.26	.26	.25	.21	.20	.19	.20	.14	.140	.143	.155
4149	Perris Valley	.19	.20	.21	.20	.18	.20	.18	.14	.15	.11	.164	.152	.147
4150	San Gorgonio Pass	.22	.20	.16	.16	.20	.18	.19	.13	.12/	--	--	--	--
4164	Banning Airport	--	--	--	--	--	--	--	--	.17	.14	.138	.149	.160
4031	Temecula Valley	--	.17*	.13	.13	.10*	.11	.10	--	--	--	--	--	--
4158	Lake Elsinore	.19	.20	.17	.19	.19	.19	.15	.16	.17	.14	.128	.151	.139
5203	Central San Bernardino Valley 2	.29	.25	.28	.21	.25	.20	.24	.20	.21	.16	.149	.184	.147
5204	East San Bernardino Valley	.30	.25	.27	.27	.23	.24	.22	.20	.22	.15	.152	.167*	.158
5175	Northwest San Bernardino Valley	.29	.27	.28	.24	.25	.24	.22	.19	.21	.15	.184	.171	.139
5197	Central San Bernardino Valley 1	.27	.29	.28	.24	.25	.22	.22	.17	.20	.14	.169	.165	.159
5181	Central San Bernardino Mountains 1	.33	.27	.28	.24	.27	.26	.20	.21	.24	.17	.176	.171	.161
	District Maximum	.33	.32	.30	.28	.30	.26	.24	.21	.24	.17	.176	.190	.169

* Less than 12 full months of data / Station location change

** Salton Sea Air Basin

Refer to 2003 AQMP for 1955 to 1975 data

TABLE A-9 (CONCLUDED)
Ozone – Annual Maximum 1-Hour Average (ppm)

	LOCATION	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
087	Central Los Angeles	0.152	0.110	0.121	0.108	0.115	0.109	0.139	0.098	0.087	0.093	0.081	0.113	0.104
060	East San Gabriel Valley 1	0.150	0.134	0.145	0.165	0.158	0.135	0.15	0.104	0.111	0.134	0.115	0.123	0.122
069	East San Fernando Valley	0.134	0.137	0.142	0.166	0.116	0.133	0.145	0.111	0.120	0.117	0.110	0.091	--
091	Northwest Coastal Los Angeles County	0.134	0.107	0.114	0.099	0.117	0.110	0.131	0.099	0.098	0.093	0.088	0.116	0.102
072	South Coastal Los Angeles County 1	0.099	0.090	0.091	0.081	0.099	0.093	0.089	0.101	0.073	0.084	0.092	--	--
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	0.074	0.080	0.090	0.087	0.087
074	West San Fernando Valley	0.179	0.131	0.138	0.158	0.129	0.123	0.135	0.122	0.130	0.129	0.124	0.116	0.119
075	Pomona/Walnut Valley	0.161	0.131	0.140	0.151	0.153	0.141	0.138	0.115	0.119	0.117	0.125	0.123	0.136
094	Southwest Coastal Los Angeles County	0.110	0.069*	--	--	--	--	--	--	--				--
820	Southwest Coastal Los Angeles County	--	0.120*	0.086	0.084	0.087	0.086	0.077	0.089	0.078	0.106	0.105	0.114	0.096
088	West San Gabriel Valley	0.152	0.130	0.145	0.151	0.149	0.122	0.176	0.101	0.107	0.111	0.099	0.124	0.111
090	Santa Clarita Valley	0.194	0.158	0.173	0.156	0.135	0.16	0.14	0.126	0.144	0.134	0.134	0.137	0.126
084	South Central Los Angeles County 1	0.081	0.083	0.111	0.088	0.102	0.078*	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	0.104	0.081	0.082	0.086	0.09	0.094	0.091
085	South San Gabriel Valley	0.128	0.104	0.077	--	0.135	0.107	0.131	0.112	0.096	0.106	0.101	0.121	0.107
591	East San Gabriel Valley 2	0.162	0.134	0.160	0.175	0.147	0.156	0.15	0.124	0.134	0.147	0.135	0.133	0.127
3176	Central Orange County	0.136	0.120	0.095	0.113	0.127	0.105	0.093	0.104	0.088	0.079	0.084	0.111	0.100
3177	North Orange County	0.165	0.099	0.094	0.146	0.152	0.104	0.115	0.118	0.095	0.100	0.104	0.119	0.103
3195	North Coastal Orange County	0.107	0.104	0.085	0.074	0.082	0.094	0.087	0.097	0.093	0.090	0.095	0.096	0.099
3186	Saddleback Valley 1	--	--	--	--	--	--	--	--	--	--	--	--	--
3812	Saddleback Valley 2	0.153	0.116	0.125	0.123	0.108	0.118	0.121	0.117	0.094	0.096	0.104	0.115	0.099
4137	Coachella Valley 1**	0.141	0.125	0.139	0.126	0.126	0.11	0.12	0.114	0.124	0.126	0.113	0.108	0.102
4157	Coachella Valley 2 **	0.123	0.111	0.114	0.103	0.106	0.12	0.097	0.100	0.099	0.102	0.105	0.095	0.093
4155	Norco/Corona	--	--	--	--	--	--	--	--	--	--	--	--	
4141	Hemet/San Jacinto Valley	--	--	--	--	--	--	--	--	--	--	--	--	
4144	Metropolitan Riverside County	0.169	0.141	0.144	0.151	0.131	0.146	0.116	0.128	0.128	0.126	0.123	0.141	0.132
4165	Mira Loma	--	--	--	--	--	--	--	--	--	0.124	0.118	0.138	0.127
4149	Perris Valley	0.155	0.128	0.088	0.169	0.139	0.142	0.125	0.122	0.125	0.111	0.108	0.117	0.124
4150	San Gorgonio Pass	--	--	--	--	--	--	--	--	--	--	--	--	
4164	Banning Airport	0.166	0.156	0.144	0.139	0.129	0.149	0.133	0.124	0.127	0.117	0.115	0.114	0.124
4031	Temecula Valley	--	--	--	--	--	--	--	--	0.105	0.104	0.093	0.119	0.100
4158	Lake Elsinore	0.154	0.130	0.149	0.142	0.130	0.139	0.128	0.107	0.133	0.111	0.102	0.104	0.131
5203	Central San Bernardino Valley 2	0.160	0.157	0.163	0.154	0.153	0.157	0.15	0.129	0.135	0.124	0.139	0.121	0.134
5204	East San Bernardino Valley	0.174	0.160	0.146	0.165	0.149	0.154	0.145	0.128	0.151	0.136	0.133	0.128	0.137
5175	Northwest San Bernardino Valley	0.155	0.138	0.149	0.166	0.145	0.155	0.146	0.131	0.145	0.136	0.143	0.126	0.136
5197	Central San Bernardino Valley 1	0.176	0.149	0.150	0.159	0.144	0.162	0.142	0.143	0.144	0.142	0.151	0.127	0.133
5181	Central San Bernardino Mountains 1	0.163	0.163	0.182	0.164	0.171	0.176	0.149	0.142	0.16	0.14	0.12	0.130	0.144
	District Maximum	0.194	0.163	0.182	0.175	0.171	0.176	0.176	0.143	0.160	0.147	0.151	0.141	0.144

* Less than 12 full months of data / Station location change

** Salton Sea Air Basin

Refer to 2003 AQMP for 1955 to 1975 data

TABLE A-10
Ozone – 3-Year 1-Hour Design Values (ppm)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	0.240	0.196	0.195	0.181	0.168	0.174	0.160	0.160	0.150	0.141	0.142	0.141	0.145	0.141	0.135	0.134	0.127	0.111	0.112	0.115	0.118
069	East San Fernando Valley	0.167	0.159	0.144	0.166	0.166	0.166	0.129	0.129	0.128	0.128	0.134	0.142	0.142	0.138	0.121	0.121	0.118	0.111	0.110	0.102	0.095
072	South Coastal Los Angeles County 1	0.120	0.120	0.108	0.105	0.104	0.105	0.103	0.091	0.085	0.088	0.089	0.088	0.083	0.087	0.089	0.089	0.080	0.079	0.084	0.083	--
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.079	0.074	0.079	0.083	0.085	0.085
074	West San Fernando Valley	0.170	0.146	0.146	0.158	0.139	0.139	0.120	0.138	0.146	0.146	0.145	0.138	0.138	0.130	0.123	0.121	0.128	0.128	0.128	0.119	0.111
075	Pomona/Walnut Valley	0.213	0.213	0.187	0.175	0.161	0.161	0.140	0.144	0.150	0.150	0.145	0.139	0.140	0.141	0.138	0.135	0.119	0.115	0.117	0.119	0.123
084	South Central Los Angeles County 1	0.100	0.089	0.085	0.085	0.079	0.085	0.077	0.072	0.077	0.080	0.081	0.082	0.088	0.082							
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.097	0.087	0.082	0.081	0.086	0.087	0.088
085	South San Gabriel Valley	0.190	0.180	0.144	0.149	0.149	0.149	0.119	0.118	0.118	0.111	0.118	0.128	0.132	0.128	0.108	0.107	0.102	0.097	0.097	0.106	0.107
087	Central Los Angeles	0.167	0.167	0.137	0.141	0.138	0.138	0.119	0.119	0.116	0.115	0.115	0.108	0.111	0.108	0.111	0.104	0.098	0.089	0.085	0.094	0.097
088	West San Gabriel Valley	0.220	0.191	0.182	0.166	0.166	0.166	0.136	0.137	0.134	0.133	0.134	0.141	0.141	0.141	0.126	0.124	0.124	0.101	0.105	0.111	0.111
090	Santa Clarita Valley	0.206	0.205	0.165	0.163	0.158	0.158	0.184	0.169	0.184	0.171	0.173	0.164	0.164	0.148	0.138	0.138	0.135	0.132	0.133	0.133	0.126
091	Northwest Coastal Los Angeles County	0.150	0.138	0.122	0.118	0.111	0.109	0.102	0.099	0.116	0.116	0.114	0.107	0.109	0.101	0.114	0.111	0.108	0.095	0.093	0.093	0.094
094	Southwest Coastal Los Angeles County 1	0.120	0.109	0.113	0.113	0.108	0.090	0.094	0.091	0.094	0.087	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	0.120	0.109	0.113	0.113	0.108	0.090	0.094	0.091	0.094	0.087	0.103	0.099	0.080	0.080	0.079	0.079	0.077	0.078	0.076	0.090	0.093
591	East San Gabriel Valley 2	0.250	0.223	0.209	0.200	0.188	0.188	0.169	0.169	0.159	0.156	0.157	0.155	0.155	0.152	0.150	0.150	0.141	0.132	0.133	0.132	0.127
ORANGE COUNTY:																						
3176	Central Orange County	0.160	0.148	0.117	0.121	0.121	0.132	0.107	0.103	0.111	0.115	0.115	0.109	0.101	0.105	0.095	0.094	0.088	0.085	0.084	0.089	0.089
3177	North Orange County	0.170	0.156	0.138	0.144	0.127	0.127	0.114	0.114	0.120	0.120	0.109	0.118	0.128	0.128	0.104	0.104	0.099	0.097	0.096	0.102	0.102
3186	Saddleback Valley 1	0.147	0.139	0.130	0.131	0.130	0.129	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	0.107	0.104	0.104	0.109	0.109	0.106	0.093	0.090	0.096	0.097	0.097	0.085	0.080	0.084	0.085	0.086	0.086	0.086	0.087	0.087	0.089
3812	Saddleback Valley 2	--	--	--	--	--	0.119	0.119	0.125	0.131	0.131	0.127	0.116	0.116	0.116	0.113	0.114	0.110	0.095	0.095	0.102	0.102
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	0.158	0.158	0.152	0.155	0.143	0.133	0.128	0.132	0.133	0.131	0.130	0.127	0.127	0.115	0.112	0.112	0.114	0.114	0.114	0.109	0.104
4144	Metropolitan Riverside County	0.220	0.200	0.187	0.187	0.166	0.166	0.140	0.143	0.157	0.157	0.157	0.141	0.134	0.140	0.135	0.135	0.126	0.126	0.126	0.121	0.121
4149	Perris Valley	0.200	0.180	0.173	0.156	0.137	0.147	0.149	0.149	0.149	0.136	0.136	0.152	0.152	0.142	0.135	0.126	0.122	0.121	0.115	0.108	0.116
4157	Coachella Valley 2**	0.130	0.124	0.124	0.118	0.121	0.121	0.112	0.112	0.114	0.113	0.113	0.108	0.106	0.106	0.106	0.104	0.099	0.099	0.098	0.095	0.095
4158	Lake Elsinore	0.185	0.185	0.180	0.166	0.162	0.160	0.136	0.137	0.140	0.139	0.140	0.130	0.130	0.135	0.132	0.132	0.122	0.111	0.111	0.103	0.114
4031	Temecula Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.094	0.094	0.094	0.090	0.093
4164	Banning Airport	--	--	0.180	0.180	0.170	0.155	0.143	0.146	0.151	0.152	0.150	0.139	0.138	0.139	0.138	0.138	0.126	0.124	0.126	0.114	0.113
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	--	--	0.131	0.128	0.128	0.118	0.121	0.119	0.119	0.117
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	0.234	0.231	0.208	0.189	0.181	0.181	0.169	0.169	0.155	0.146	0.148	0.148	0.148	0.150	0.146	0.146	0.134	0.134	0.136	0.135	0.128
5181	Central San Bernardino Mountains	0.230	0.227	0.215	0.217	0.211	0.211	0.170	0.166	0.163	0.162	0.163	0.163	0.164	0.164	0.162	0.149	0.142	0.140	0.134	0.124	0.130
5197	Central San Bernardino Valley 1	0.223	0.220	0.194	0.191	0.184	0.184	0.160	0.160	0.164	0.162	0.162	0.147	0.144	0.149	0.147	0.147	0.140	0.140	0.142	0.133	0.127
5203	Central San Bernardino Valley 2	0.219	0.221	0.197	0.196	0.188	0.182	0.158	0.151	0.158	0.151	0.157	0.154	0.153	0.153	0.150	0.147	0.129	0.124	0.125	0.122	0.129
5204	East San Bernardino Valley	0.220	0.216	0.202	0.190	0.190	0.190	0.152	0.154	0.167	0.163	0.163	0.159	0.157	0.157	0.146	0.145	0.134	0.134	0.134	0.132	0.128
	District Maximum	0.250	0.231	0.215	0.217	0.211	0.211	0.184	0.169	0.184	0.171	0.173	0.164	0.164	0.164	0.162	0.150	0.142	0.140	0.142	0.135	0.130

+ Site relocated * Less than 12 full months of data ** Salton Sea Air Basin

Refer to 2003 AQMP for 1976 to 1994 data

TABLE A-11
Fine Particulate Matter (PM2.5)# – Annual Arithmetic Mean (µg/m³)

STN#	LOCATION	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																		
060	East San Gabriel Valley	23.9	20.2	21.7	21.0	19.3	18.3	17.0	15.5	15.9	14.1	13.2	10.9	12.1	11.0	10.5	9.88	9.88
069	East San Fernando Valley	22.9	21.4	24.8	24.0	22.1	19.1	17.9	16.6	16.8	14.1	14.4	12.6	13.2	12.2	12.2	--	--
072	South Coastal Los Angeles County 1	20.7	19.6	21.2	19.5	18.0	17.9	16.0	14.2	14.6	14.2	13.0	10.6	11.0	10.4	11.3	10.81	10.81
074	West San Fernando Valley	17.3	18.0	18.4	18.9	16.5	15.6	13.9	12.9	13.1	11.9	11.4	10.3	10.2	10.5	9.7	8.84	8.84
077	South Coastal Los Angeles County 2	--	--	--	--	20.5	16.5	14.7	14.5	13.7	13.7	12.5	10.4	10.7	10.6	11.0	10.26	10.26
084	South Central Los Angeles County1	24.3	23.0	24.5	23.3	20.3	18.5	17.5	16.7	15.9	15.5	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	14.7	12.6	13.0	11.69	11.95	11.78	11.78
085	South San Gabriel Valley	25.7	24.0	25.4	24.0	20.6	20.0	17.0	16.7	16.7	15.1	14.8	12.6	12.5	11.85	11.56	11.52	11.52
087	Central Los Angeles	23.0	21.9	22.9	22.1	21.4	19.7	18.1	15.6	16.8	15.7	14.3	11.9	13.0	12.55	11.95	12.38	12.38
088	West San Gabriel Valley	19.9	19.4	20.9	20.3	18.6	16.6	15.1	13.4	14.3	12.9	12.3	10.4	10.9	10.12	10.13	9.85	9.85
ORANGE COUNTY:																		
3176	Central Orange County	26.0	20.3	22.0	18.6	17.3	17.0	14.7	14.1	14.5	13.6	11.7	10.2	11.0	10.8	10.09	9.38	9.38
3812	Saddleback Valley	16.6	14.7	15.8	15.5	13.1	12.0	10.7	11.0	11.3	10.3	9.4	8.0	8.5	7.9	8.1	7.05	7.05
RIVERSIDE COUNTY:																		
4137	Coachella Valley 1**	--	9.7	10.7	10.0	9.0	8.9	8.4	7.7	8.7	7.2	6.6	6.0	6.0	6.5	6.5	5.76	5.76
4144	Metropolitan Riverside County 1	30.2	28.3	31.0	27.4	24.8	22.1	21.0	19.0	19.1	16.5	15.3	13.2	13.6	13.5	12.5	11.89	11.89
4146	Metropolitan Riverside County 2	26.7	25.3	28.2	27.1	22.6	20.8	18.0	17.0	18.1	13.4	13.5	11.1	11.8	11.4	11.3	--	--
4157	Coachella Valley 2**	12.8	11.2	12.2	12.0	11.4	10.7	10.5	9.5	9.8	8.4	8.0	6.9	7.2	7.6	8.4	7.54	7.54
4165	Mira Loma	--	--	--	--	--	--	--	20.6	21	18.2	16.8	15.2	15.3	15.1	14.1	13.34	13.34
SAN BERNARDINO COUNTY:																		
5197	Central San Bernardino Valley 1	25.7	24.5	24.9	24.3	22.1	19.9	18.9	17.6	19	15.4	14.2	12.1	12.6	12.8	12.3	11.05	11.05
5203	Central San Bernardino Valley 2	25.6	25.9	26.1	25.8	22.2	21.9	17.4	17.8	18.3	13.5	12.9	11.3	12.2	11.76	11.4	10.74	10.74
5817	Southwest San Bernardino Valley	25.4	24.1	26.5	25.4	23.8	20.9	18.8	18.5	17.9	15.6	14.8	12.9	13.2	12.4	12.0	--	--
5818	East San Bernardino Mountains	10.3	10.2	11.2	11.5	10.6	9.7	12.1	11.2	10.4	9.2	9.9	8.5	8.4	8.0	9.7	7.59	7.59
	District Maximum	30.2	28.3	31.0	27.4	24.8	22.1	21.0	20.6	21.0	18.2	16.8	15.2	15.3	15.1	14.1	14.5	13.34

* Less than 12 full months of data
** Salton Sea Air Basin
# Federal Reference Method (FRM) filter data only

TABLE A-12
Fine Particulate Matter (PM2.5)# – Annual Design Values (µg/m³)

STN#	LOCATION	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																
060	East San Gabriel Valley	21.9	21.0	20.7	19.5	18.2	16.9	16.1	15.1	14.3	12.7	11.8	11.1	11.0	11.1	10.7
069	East San Fernando Valley	23.0	23.4	23.6	21.7	19.7	17.9	17.1	15.9	15.1	13.6	13.3	12.6	12.5	12.1	12.1
072	South Coastal Los Angeles County 1	20.5	20.1	19.6	18.5	17.3	16.0	14.9	14.4	14.0	12.6	11.5	10.6	10.9	11.0	11.2
074	West San Fernando Valley	17.9	18.4	17.9	17.0	15.4	14.2	13.4	12.7	12.2	11.1	10.6	10.3	10.1	10.0	9.4
077	South Coastal Los Angeles County 2	--	--	--	18.5	17.3	15.2	14.3	14.0	13.3	12.2	11.2	10.6	10.8	10.8	10.7
084	South Central Los Angeles County1	23.9	23.6	22.7	20.7	18.7	17.5	16.6	15.7	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	17.1	16.7	16.0	15.4	14.2	13.4	12.4	12.2	12.1	12.1
085	South San Gabriel Valley	25.0	24.5	23.3	21.5	19.5	18.2	17.1	16.1	15.5	14.1	13.3	12.3	12.0	11.8	11.7
087	Central Los Angeles	22.6	22.3	22.2	21.1	19.7	17.7	16.7	16.1	15.6	14.0	13.1	12.5	12.5	12.3	12.2
088	West San Gabriel Valley	20.1	20.2	19.9	18.5	16.8	15.0	14.3	13.6	13.2	11.8	11.1	10.4	10.4	10.5	10.4
ORANGE COUNTY:																
3176	Central Orange County	22.7	20.3	19.3	17.6	16.4	15.3	14.4	14.1	13.3	11.9	11.0	10.6	10.6	10.5	10.0
3812	Saddleback Valley	15.7	15.4	14.8	13.5	11.9	11.2	10.9	10.9	10.4	9.3	8.7	8.1	8.2	8.0	7.7
RIVERSIDE COUNTY:																
4137	Coachella Valley 1**	10.2	10.1	9.9	9.3	8.8	8.3	8.2	7.8	7.5	6.6	6.2	6.2	6.4	6.5	6.2
4144	Metropolitan Riverside County 1	29.8	28.9	27.7	24.8	22.6	20.7	19.7	18.1	16.9	15.0	14.0	13.4	13.2	12.8	12.3
4146	Metropolitan Riverside County 2	26.7	26.9	26.0	23.5	20.5	18.6	17.6	16.1	14.9	12.6	12.1	11.4	11.5	11.2	11.1
4157	Coachella Valley 2**	12.1	11.8	11.9	11.4	10.9	10.2	9.9	9.2	8.7	7.7	7.3	7.2	7.7	8.1	8.1
4165	Mira Loma	--	--	--	--	--	--	20.8	19.9	18.7	16.7	15.8	15.2	14.8	14.6	13.97
SAN BERNARDINO COUNTY:																
5197	Central San Bernardino Valley 1	25.0	24.6	23.8	22.1	20.3	18.8	18.5	17.3	16.2	13.9	12.9	12.4	12.5	12.8	12.2
5203	Central San Bernardino Valley 2	25.8	25.9	24.7	23.3	20.5	19.0	17.7	16.4	14.8	12.5	12.1	11.7	11.8	11.6	11.3
5817	Southwest San Bernardino Valley	25.3	25.3	25.2	23.4	21.2	19.4	18.5	17.5	16.3	14.5	13.7	12.9	12.6	12.5	12.5
5818	East San Bernardino Mountains	10.6	11.0	11.1	10.6	10.8	11.0	11.2	10.3	9.8	9.2	8.9	8.3	8.7	8.2	8.1
	District Maximum	29.8	28.9	27.7	24.8	22.6	20.7	20.8	19.9	18.7	16.7	15.8	15.2	14.8	14.6	14.0

* Less than 12 full months of data
** Salton Sea Air Basin
# Federal Reference Method (FRM) filter data only

TABLE A-13
Fine Particulate Matter (PM2.5)# – 24-Hour Design Values (µg/m³)

STN#	LOCATION	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																
060	East San Gabriel Valley	62	59	57	54	54	49	47	41	42	38	35	29	26	27	29
069	East San Fernando Valley	67	69	62	55	53	48	47	42	39	34	33	31	31	29	30
072	South Coastal Los Angeles County 1	55	54	48	46	45	41	39	38	38	34	30	28	27	28	30
074	West San Fernando Valley	49	51	49	48	45	40	34	31	29	28	27	28	26	25	24
077	South Coastal Los Angeles County 2	--	--	--	48	44	38	36	35	34	31	28	26	25	26	28
084	South Central Los Angeles County1	61	60	57	53	51	51	48	43	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	47	46	42	40	35	34	31	29	29	31
085	South San Gabriel Valley	66	65	58	53	52	50	49	44	41	35	33	31	30	29	34
087	Central Los Angeles	61	62	58	57	56	49	48	44	42	34	31	30	31	32	34
088	West San Gabriel Valley	56	53	51	48	46	41	40	37	38	31	30	26	25	24	26
ORANGE COUNTY:																
3176	Central Orange County	63	58	53	49	47	44	43	42	39	32	28	26	25	27	29
3812	Saddleback Valley	42	43	43	41	36	32	31	29	29	23	23	21	21	19	18
RIVERSIDE COUNTY:																
4137	Coachella Valley 1**	28	26	25	22	23	21	20	18	17	15	13	13	13	14	15
4144	Metropolitan Riverside County 1	76	73	71	66	64	57	55	50	45	38	34	32	33	34	36
4146	Metropolitan Riverside County 2	65	65	62	58	50	47	49	48	43	33	30	27	28	27	28
4157	Coachella Valley 2**	29	26	26	25	26	24	24	21	21	16	15	15	16	16	17
4165	Mira Loma	--	--	--	--	--	--	56	53	49	41	38	36	36	38	40
SAN BERNARDINO COUNTY:																
5197	Central San Bernardino Valley 1	67	64	60	58	55	52	52	52	48	37	31	32	32	34	35
5203	Central San Bernardino Valley 2	70	68	64	66	58	55	53	52	48	35	32	30	31	30	32
5817	Southwest San Bernardino Valley	72	62	63	61	59	50	48	47	45	37	34	32	30	30	31
5818	East San Bernardino Mountains	29	30	30	28	30	33	37	36	32	30	29	29	31	27	30
	District Maximum	76	73	71	66	64	57	56	53	49	41	38	36	36	38	40

* Less than 12 full months of data
** Salton Sea Air Basin
# Federal Reference Method (FRM) filter data only

TABLE A-14

Fine Particulate Matter (PM2.5)# – Percent of Sampling Days Exceeding the 24-Hour Federal Standard (35 µg/m³)##

STN#	LOCATION	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																		
060	East San Gabriel Valley	17	9	14	12	9	8	6*	3*	7	2	4	1	2	1	0	0	0
069	East San Fernando Valley	18	14*	16	19	14	10	8	6	9	2	2	1	2	1	1	1	--
072	South Coastal Los Angeles County 1	9	11*	14	9	7	7	4	2*	4	2	2	0	0	1	1	1	--
074	West San Fernando Valley	8*	8	7	10	7	4	4	1	1	2	1	1	1	2	1	0	0
077	South Coastal Los Angeles County 2	--	--	--	--	10	5	2	2	2	2	1	0	1	1	0	1	1
084	South Central Los Angeles County 1	18	14	16	18	9	7	7	4	4	3	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	3	1	0	1	1	1	1
085	South San Gabriel Valley	20	13	22	19	9	9	9*	6	5	4	2	0	1	1	0	0	0
087	Central Los Angeles	15	13	15	13	14	7	7	3	6	3	2	1	1	1	0	2	2
088	West San Gabriel Valley	9*	6	8	11	10	6	4	1	3	2	3	0	1	0	0	1	1
ORANGE COUNTY:																		
3176	Central Orange County	17	14*	16*	9	7	6	4	2	4	4	1	0	1	1	0	2	2
3812	Saddleback Valley	4*	4	5	3	3	3	0	1	2	0	1	0	0	0	0	0	0
RIVERSIDE COUNTY:																		
4137	Coachella Valley 1**	--	0	1	1	0	0	0*	0	0	0	0	0	0	0	0	0	0
4144	Metropolitan Riverside County 1	30	26*	33	25	21	15	11	11	11	4	4	1	1	2	2	1	1
4146	Metropolitan Riverside County 2	25	22	23	24	19	13	5	9	8	3	2	2	2	0	1	0	0
4157	Coachella Valley 2**	0*	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0
4165	Mira Loma	--	--	--	--	--	--	--	12	12	9	6	2	3	2	3	3	3
SAN BERNARDINO COUNTY:																		
5197	Central San Bernardino Valley 1	17	19	15	19	14	14	6	6	9	5	2	2	2	3	1	1	1
5203	Central San Bernardino Valley 2	21	21*	23	24	15	15	3	8	11	3	2	2	2	0	1	1	1
5817	Southwest San Bernardino Valley	22	14	21	18	17	13	7	7	6	5	3	1	2	0	1	2	--
5818	East San Bernardino Mountains	--	0	0	0	0	0	4	2*	2	2	2	0	0	2	2	0	0
	District Maximum	30	22	33	25	21	15	11	12	12	9	6	2	3	3	3	3	3

* Less than 12 full months of data

** Salton Sea Air Basin

Federal Reference Method (FRM) filter data only

Effective December 17, 2006, U.S. EPA has strengthen the standard level from 65 µg/m³ to 35 µg/m³

TABLE A-15
Fine Particulate Matter (PM2.5)# – Annual Maximum 24-Hour Average (µg/m³)

STN#	LOCATION	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																		
060	East San Gabriel Valley	81.3	92.5	79.7	72.4	121.2	75.6	132.7*	52.8*	63.8	53.1	72.1	44.4	49.5	39.6	29.6	32.4	70.3
069	East San Fernando Valley	79.5	84.4*	94.7	63.0	120.6	60.1	63.2	50.7	56.5	57.5	67.5	43.7	47.8	54.2	45.1	64.6	--
072	South Coastal Los Angeles County 1	66.9	81.5*	72.9	62.7	115.2	66.6	53.9	58.5*	82.9	57.2	63	35	39.7	49.8	47.2	51.5	54.6
074	West San Fernando Valley	79.0*	67.5	71.1	48.8	47.5	56.2	39.6	44.1	43.3	50.5	39.9	40.7	39.8	41.6	41.8	27.2	36.8
077	South Coastal Los Angeles County 2	--	--	--	--	--	59.7	50.8	53.6	68	60.9	55.8	33.7	42.0	46.7	42.9	52.2	48.3
084	South Central Los Angeles County 1	67.8	82.1	73.1	64.0	54.8	55.8	54.6	55	49	44.2	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	69.2	38.2	35.3	51.2	52.1	35.8	41.3
085	South San Gabriel Valley	85.6	89.5	77.3	61.0	90.3	60.7	58.2*	72.2	63.6	47.3	71.1	34.9	41.2	45.3	29.1	35.1	52.7
087	Central Los Angeles	69.3	87.8	73.4	66.3	83.7	75.0	73.7	56.2	64.2	78.3	61.7	39.2	49.3	58.7	43.1	59.9	56.4
088	West San Gabriel Valley	73.0*	66.3	78.1	57.8	89.0	59.4	62.9	45.9	68.9	66	52	35.2	43.8	30.5	25.7	38.8	48.5
ORANGE COUNTY:																		
3176	Central Orange County	68.7	113.9*	70.8*	68.6	115.5	58.9	54.7	56.2	79.4	67.9	64.6	31.7	39.2	50.1	37.8	56.2	45.8
3812	Saddleback Valley	56.6*	94.7	53.4	58.5	50.6	49.4	35.4	47	46.9	32.6	39.2	19.9	33.4	27.6	28	25.5	31.5
RIVERSIDE COUNTY:																		
4137	Coachella Valley 1**	--	28.5	44.7	42.3	21.2	27.1	26.2*	24.8	32.5	18.1	21.8	12.8	26.3	15.5	18.5	15.5	22.7
4144	Metropolitan Riverside County 1	111.2	119.6*	98.0	77.6	104.3	91.7	98.7	68.5	75.7	57.7	54.5	46.5	60.8	38.1	60.3	48.9	54.7
4146	Metropolitan Riverside County 2	90.0	79.3	74.9	75.5	73.3	93.8	95.0	55.3	68.6	43	42.2	43.7	51.6	30.2	53.7	30.9	--
4157	Coachella Valley 2**	29.6*	28.6	33.5	26.8	26.8	28.5	44.4	24.3	26.8	21.6	27.5	16.0	35.4	20	25.8	26.5	24.6
4165	Mira Loma	--	--	--	--	--	--	--	63.0	69.7	50.9	49.2	54.2	56.3	39.3	56.5	73.6	56.6
SAN BERNARDINO COUNTY:																		
5197	Central San Bernardino Valley 1	98.0	72.9	74.8	66.6	98.1	71.4	96.8	52.6	77.5	49	46.4	42.6	60.1	39.9	43.6	78.9	50.5
5203	Central San Bernardino Valley 2	121.5	89.8*	78.5	82.1	73.9	93.4	106.3	55	72.1	43.5	37.8	39.3	65.0	34.8	55.3	73.9	53.5
5817	Southwest San Bernardino Valley	85.8	73.4	71.2	64.8	88.9	86.1	87.8	53.7	72.8	54.2	46.9	46.1	52.9	35.2	49.3	38.4	--
5818	East San Bernardino Mountains	32.1	29.0	34.6	34.1	35.0	28.6	38.8	40.1*	45.4	36.8	40.8	35.4	30.6	36.4	35.5	24.2	39.4
	District Maximum	121.5	119.6	98.0	82.1	121.2	93.8	132.7	72.2	82.9	78.3	72.1	54.2	60.8	58.7	60.3	78.9	70.3

* Less than 12 full months of data

** Salton Sea Air Basin

Federal Reference Method (FRM) filter data only

TABLE A-16
Fine Particulate Matter (PM2.5)# – Annual 24-Hour Average 98th Percentile Concentration (µg/m³)

STN#	LOCATION	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																		
060	East San Gabriel Valley	64	62	61	51	56	54	53	39	49	35	43	35	31	26	26	30	30
069	East San Fernando Valley	50	83	69	55	60	49	51	43	48	35	34	33	34	28	30	29	--
072	South Coastal Los Angeles County 1	51	64	49	47	47	46	41	35	41	36	34	28	28	26	26	31	32
074	West San Fernando Valley	40	50	57	45	45	53	36	32	33	26	27	30	24	31	23	21	28
077	South Coastal Los Angeles County 2	--	--	--	--	53	42	38	35	34	35	30	27	27	25	25	27	31
084	South Central Los Angeles County1	53	63	66	53	52	53	48	45	46	37	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	38	32	32	30	24	31	37
085	South San Gabriel Valley	60	71	67	58	50	52	54	43	50	38	35	32	32	29	29	30	42
087	Central Los Angeles	52	73	58	55	61	50	53	39	51	40	34	27	32	32	29	35	38
088	West San Gabriel Valley	60	54	55	49	48	47	43	32	45	32	36	25	26	24	21	26	32
ORANGE COUNTY:																		
3176	Central Orange County	66	66	59	48	52	48	42	41	47	39	32	25	28	25	23	34	30
3812	Saddleback Valley	45	37	46	46	38	39	31	26	35	27	24	17	29	18	18	22	15
RIVERSIDE COUNTY:																		
4137	Coachella Valley 1**		23	33	23	20	23	25	16	21	17	15	13	13	14	14	15	17
4144	Metropolitan Riverside County 1	79	77	74	66	77	60	58	54	54	41	40	32	31	34	35	34	38
4146	Metropolitan Riverside County 2	62	67	66	64	56	54	41	48	57	39	34	27	28	27	29	26	--
4157	Coachella Valley 2**	30	26	30	22	25	27	25	19	27	19	17	12	16	16	16	17	20
4165	Mira Loma	--	--	--	--	--	--	--	53	60	47	41	36	37	35	38	40	43
SAN BERNARDINO COUNTY:																		
5197	Central San Bernardino Valley 1	66	65	70	57	54	63	48	44	65	47	33	31	28	36	33	35	38
5203	Central San Bernardino Valley 2	72	70	68	66	58	72	43	48	68	41	35	30	33	27	33	28	34
5817	Southwest San Bernardino Valley	86	65	65	57	67	60	50	42	53	45	36	31	35	29	27	35	--
5818	East San Bernardino Mountains	31	27	30	32	29	23	37	40	34	33	29	28	31	27	35	19	35
	District Maximum	86	83	74	66	77	72	58	54	68	47	43	36	37	36	38	40	43

* Less than 12 full months of data

** Salton Sea Air Basin

Federal Reference Method (FRM) filter data only

TABLE A-17
Particulate Matter (PM10)# – Annual Arithmetic Mean (µg/m³)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	49	45	46	41	56	46	45	46	44	35	35	32	36+	35	32	30	33	30	33	44	37
069	East San Fernando Valley	42	42	45	36	44	39	41	38	38*	38	34	36	40	36	39	30	29	26	29	31*	--
072	South Coast Los Angeles County 1	39	35	41	32	39	38	37	36	33	33	30	31	30+	29	31	22	24	23	23*	--	--
077	South Coast Los Angeles County 2	--	--	--	--	--	--	--	--	--	38	43	45	41+	36	33	27	29	26	27	27	26
087	Central Los Angeles	43	41	43	37	45	40	44	39	35	33	30	30	33	31*	33	27	29	30	30	31	27
090	Santa Clarita Valley	37	33	33	30	38	33	32	33	32	28	26	--	30+	26	23	21	21	20	22	23	18
094	Southwest Coastal Los Angeles County 1	36	33	36	33	36	36	37	37	30	31*	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	25	23	27	29	26	25	21	22	20	21	22	21
ORANGE COUNTY:																						
3176	Central Orange County	44	35	39	36	49	40	36	34	33	34	28	33	31+	29+	31	22	25	22	25	27	25
3186	Saddleback Valley 1	38	30	35	31	37	29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3812	Saddleback Valley 2	--	--	--	--	29	28	26	31	27	24	19	23	23	23	24	18	19	17	19	20	19
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	27	29	26	26	29	24	27+	27	27	26	26	25+	31	23+*	23	19	19+	16	23	22	17
4144	Metropolitan Riverside County 1	69	61	65	56	72	60	63	59	57	56	52	54	55+	47	43	33	34	35	34	37	32
4149	Perris Valley	47	40	45	38	50	41	41	45	44	41	39	45	55+	38*	35	28	29	27	34	35	30
4150	San Gorgonio Pass	30	34	38	28	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4155	Norco/Corona	54	44	50	47	55	49	--	45	41	38	32	37	40+	34	36	27	28	27	28	31	30
4157	Coachella Valley 2**	52+	51+	49+	48+	53	52+	50+	51+	50+	39+	46	53+	54+	40+	33+	29	33+	30	38	41+	39
4164	Banning Airport	--	--	--	27	35	29	35	28	29	29	27	31	33	26	26	22	20	19	21	21	22
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	64	69	57	53	42	41	40	41	43	43
SAN BERNARDINO COUNTY:																						
5171	Southwest San Bernardino Valley 1	54	51	51	47	55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5181	Central San Bernardino Mountains	20	24	24	25	27	24	--	37*	26*	26	26	26	26	24*	25	19	19	19	21	19	16
5197	Central San Bernardino Valley 1	61	55	54	50	60	53	51	50	47*	48	50	54	55+	40	40	34	32	34	41	40	38
5203	Central San Bernardino Valley 2	57	53	51	46	57	50	52	50	45	49	42	46	51+	43	42	32	32	29	31	34	30
5204	East San Bernardino Valley	48	46	43	41	47	46	47	41	37	39	33	36	40	29	30	26	26	23	27	26	25
5817	Southwest San Bernardino Valley 2	--	--	--	--	66	50	52	45	43	43	41	42	43+	39	36	32	31	31	33	33*	--
	District Maximum	69	61	65	56	72	60	63	59	57	56	52	64	69+	57	53	42	41	40	41	44	43

* Less than 12 full months of data
** Salton Sea Air Basin
\+ Excludes data flagged for exceptional events
# Federal Reference Method (FRM) filter data only

Refer to 2003 AQMP for 1985–1994 data

TABLE A-18
Particulate Matter (PM10)# – Percent of Sampling Days Exceeding State (50 µg/m³) and Federal (150 µg/m³) 24-Hour Standards

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	40/2	41/0	40/0	28/0	58/0	42/0	38/0	40/0	35/0	15/0	22/0	12/0	20/0+	27/0	14/0	9/0	15/0	10/0	10/0	37/0	12/0
069	East San Fernando Valley	25/0	25/0	30/0	15/0	35/0	23/0	23/0	12/0	14/0*	12/0	8/0	19/0	19/0	13/0	18/0	2/0	4/0	2/0	2/0	3/0*	--
072	South Coast Los Angeles County 1	19/0	15/0	18/0	10/0	22/0	21/0	17/0	9/0	7/0	7/0	9/0	10/0	9/0+	2/0	5/0	0/0	0/0	0/0	0/0*	--	--
077	South Coast Los Angeles County 2	--	--	--	--	--	--	--	--	--	20/0	31/0	33/0	38/0+	16/0	9/0	3/0	0/0	2/0	2/0	3/0	2/0
087	Central Los Angeles	23/0	18/0	25/0	17/0	33/0	25/0	33/0	15/0	10/0	8/0	7/0	5/0	9/0	4/0	7/0	0/0	2/0	7/0	2/0	5/0	2/0
090	Santa Clarita Valley	14/0	9/0	9/0	6/0	21/0	7/0	7/0	12/0	16/0	3/0	2/0	2/0	9/0+	4/0	2/0	0/0	0/0	0/0	0/0	0/0	0/0
094	Southwest Coastal Los Angeles County 1	21/0	8/0	7/0	12/0	10/0	16/0	14/0	20/0	5/0	13/0*	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	0/0*	0/0	0/0	5/0	0/0	2/0	0/0	0/0	0/0	0/0	0/0	0/0
ORANGE COUNTY:																						
3176	Central Orange County	23/2	10/0	18/0	20/0	39/0	13/0	20/0	8/0	10/0	12/0	5/0	13/0	9/0+	5/0	2/0	0/0	3/0	0/0	2/0	3/0	2/0
3186	Saddleback Valley 1	18/0	7/0	7/0	10/0	10/0	3/0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3812	Saddleback Valley 2	--	--	--	--	3/0	3/0	5/0	8/0	4/0	0/0	0/0	2/0	5/0	0/0	2/0	0/0	0/0	0/0	2/0	0/0	0/0
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	4/0	3/0	2/0	5/0	5/0	0/0	2/0+	5/0	7/0	3/0	3/0	4/0+	11/0	9/0+*	2/0	0/0	0/0+	0/0	5/0	4/0	0/0
4144	Metropolitan Riverside County 1	62/7	68/2	70/2	54/0	72/2	70/0	67/0	69/0	57/2	61/0	56/0	60/0	57/0+	41/0	29/0	6/0	13/0	16/0	8/0	15/0	9/0
4149	Perris Valley	38/0	33/0	32/0	26/0	50/0	22/0	27/0	39/0	33/0	25/0	32/0	35/0	56/0+	27/0*	16/0	2/0	5/0	2/0	18/0	13/0	3/0
4150	San Gorgonio Pass	12/0	19/0	25/0	9/0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4155	Norco/Corona	47/3	33/0	42/2	40/0	55/0	48/0	33/0	34/0	26/0	19/0	9/0	18/0	17/0+	15/0	12/0	0/0	3/0	2/0	4/0	5/0	3/0
4157	Coachella Valley 2**	44/2	50/0+	43/0+	40/0+	54/0	50/0+	45/0+	45/0+*	42/0+	20/0+*	34/0	50/0+	61/0+	22/0+	8/0+	5/0	2/0+	6/0	19/0+	20/0	18/0
4164	Banning Airport	--	--	--	4/0	12/0	8/0	13/2	11/0	15/0	12/0	3/0	15/0	15/0	2/0	2/0	2/0	2/0	0/0	2/0	0/0	2/0
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	70/0	75/0+	57/0	56/0	42/0	42/0	27/0	24/0	30/0	38/0
SAN BERNARDINO COUNTY:																						
5171	Southwest San Bernardino Valley 1	51/5	53/0	36/2	34/0	56/0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5181	Central San Bernardino Mountains	2/0	0/0	0/0	0/0	0/0	0/0	--	19/0	0/0*	2/0	0/0	2/0	4/0	0/0*	2/0	0/0	0/0	0/0	0/0	0/0	0/0
5197	Central San Bernardino Valley 1	57/3	57/0	48/0	47/0	61/0	52/0	57/0	53/0	54/0*	48/0	48/0	52/0	59/0+	23/0	22/0	17/0	7/0	15/0	31/0	22/0	13/0
5203	Central San Bernardino Valley 2	53/0	58/0	45/0	38/0	56/0	53/0	52/0	56/0	39/0	48/0	38/0	42/0	49/0+	32/0	21/0	5/0	5/0	2/0	5/0	7/0	3/0
5204	East San Bernardino Valley	41/2	42/0	38/0	32/0	40/0	44/0	45/0	32/0	26/0	33/0	21/0	20/0	32/0	7/0	3/0	2/0	3/0	0/0	3/0	3/0	2/0
5817	Southwest San Bernardino Valley 2	--	--	--	--	67/2	45/0	42/2	41/0	29/0	29/0	32/0	27/0	24/0+	24/0	15/0	5/0	5/0	7/0	5/0	13/0*	--

* Less than 12 full months of data
** Salton Sea Air Basin
\+ Excludes data flagged for exceptional events
# Federal Reference Method (FRM) filter data only
Refer to 2003 AQMP for 1985–1994 data

TABLE A-19
Particulate Matter (PM10)# – Annual Maximum 24-Hour Average (µg/m³)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	157	100	116	87	103	94	106	91	119	83	76	81	83+	98	74	70	65	78	76	96	101
069	East San Fernando Valley	135	110	92	75	82	74	86	71	81*	74	92	71	109	66	80	51	61	55	52	60*	--
072	South Coastal Los Angeles County 1	146	113	87	69	79	105	91	74	63	72	66	78	75+	62	62	44	43	45	37*	--	--
077	South Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	83	131	117	123+	81	83	76	50	54	54	59	62
087	Central Los Angeles	141	138	102	80	88	80	97	65	81	72	70	59	78	66*	72	42	53	80	57	66	73
090	Santa Clarita Valley	87	91	67	60	75	64	62	61	72	54	55	53	131+	91	56	40	45	37	43	47	41
094	Southwest Coastal Los Angeles County 1	136	107	79	66	69	74	75	121	58	52*	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	47*	44	45	128	50	52	37	41	31	38	46	42
ORANGE COUNTY:																						
3176	Central Orange County	172	101	91	81	122	126	93	69	96	74	65	104	75+	61+	63	43	53	48	77	85	59
3186	Saddleback Valley 1	122	79	86	70	111	60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3812	Saddleback Valley 2	--	--	--	--	56	98	60	80	64	47	41	57	74	42	56	34	48	37	51	41	49
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	68	130	63	72	104	44	53+	75	108	79	66	73+	83	75+*	140	37	42+	37	129	57	33
4144	Metropolitan Riverside County 1	219	162	163	116	153	139	136	130	164	137	123	109	118+	115	77	75	82	67	135	100	69
4149	Perris Valley	145	87	139	98	112	87	86	100	142	83	80	125	120+	85*	80	51	65	62	70	87	74
4150	San Gorgonio Pass	138	122	227	76	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4155	Norco/Corona	177	94	158	93	136	129	109+	78	116	76	79	74	93+	86	79	50	60	52	58	65	87
4157	Coachella Valley 2**	199	117+	144+	114+	119	114+	149+	139+	124+	83+	106	122+	146+	128+	132+	107	106+	124	129+	121	145
4164	Banning Airport	--	--	--	62	86	69	219	70	79	82	76	75	78	51	99	55	51	45	64	45	139
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	124	142	135	108	89	79	78	147	85	110
SAN BERNARDINO COUNTY:																						
5171	Southwest San Bernardino Valley 1	167	129	208	92	112	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5181	Central San Bernardino Mountains	53	45	47	45	47	49	--	52*	47*	52	49	63	89	41*	57	39	43	43	37	47	41
5197	Central San Bernardino Valley 1	178	130	122	101	116	108	106	102	101*	106	108	142	111+	75	75	62	84	67	90	68	96
5203	Central San Bernardino Valley 2	148	136	108	114	134	108	106	94	98	118	72	92	136+	76	66	63	56	53	102	136	78
5204	East San Bernardino Valley	172	128	103	97	92	109	102	83	92	88	61	103	97	58	52	57	71	48	72	62	95
5817	Southwest San Bernardino Valley 2	--	--	--	--	--	124	166	91	149	93	74	78	115+	90	70	87	70	57	115	67*	--
	District Maximum	219	162	227	116	153	139	219	139	164	137	131	142+	146+	135	140	107	106	124	147+	136	145

* Less than 12 full months of data

** Salton Sea Air Basin

\+ Excludes data flagged for exceptional events

Federal Reference Method (FRM) filter data only

Refer to 2003 AQMP for 1985–1994 data

TABLE A-20
Carbon Monoxide – Annual Maximum 8-Hour Average (ppm)
(To Be Compared to Federal Standard (9 ppm) and State Standard (9.0 ppm), 8-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	6.3	4.0	4.3	3.9	3.9	4.9	2.9	2.4	2.6	2	1.7	1.7	1.8	1.6	1.7	1.3	1.4	1.2	1.7	1.9	1.3
069	East San Fernando Valley	12.0	9.3	7.4	7.5	9.0	6.1	4.9	4.6	4.7*	3.7	3.4	3.5	2.8	2.6	2.9	2.4	2.4	2.4	2.4	3.0	--
072	South Coastal Los Angeles County 1	6.6	6.9	6.7	6.6	5.4	5.8	4.7	4.6	4.7	3.4	3.5	3.4	2.6	2.6	2.2	2.1	2.6	2.2	2.0	--	--
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.3	2.6	2.6	2.6	2.2
074	West San Fernando Valley	10.3	8.5	9.8	9.3	7.6	9.8	6.0	4.8	4.1	3.5	3.5	3.4	2.8	2.9	2.8	2.6	2.8	2.8	2.3	3.0	2.5
075	Pomona/Walnut Valley	6.1	5.0	5.0	7.3	6.7	4.9	3.4	3.3	4.4	3.1	2.5	2.1	2	2	1.8	1.8	1.6	1.5	1.6	1.6	1.6
084	South Central Los Angeles County 1	13.86	17.3	17.0	13.4	11.0	10.0	7.7	10.1	7.3	6.7	5.9	6.4	5.1	4.3*	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4.6	3.6	4.7	4.0	3.5	3.8	3.3
085	South San Gabriel Valley	7.86	8.1	6.2	6.1	5.6	5.3	4.0	4	4	3.6	2.4*	2.7*	2.9	2.1	2.1	1.9	2.4	2.2	2.0	2.5	1.7
087	Central Los Angeles	8.37	8.4	7.9	6.1	6.3	6.0	4.6	4	4.6	3.2	3.1	2.6	2.2	2.1	2.2	2.3	2.4	1.9	2.0	2.0	1.8
088	West San Gabriel Valley	9.12	7.1	6.0	6.3	6.6	7.4	5.0	4	3.8	3.4	2.8	2.8	2.3	2.1	2.1	2	2.2	1.6	1.7	1.8	1.6
090	Santa Clarita Valley	4.12	3.9	6.8	3.4	3.6	4.9	3.1	1.9	1.7	3.7	1.3	1.3	1.2	1.1	1.4	1.1	0.8	1.1	0.8	1.2	0.9
091	Northwest Coastal Los Angeles County	5.62	4.5	4.4	4.5	3.8	4.3	3.0	2.7	2.7	2.3	2.1	2	2	2	1.5	1.4	1.6	1.4	1.3	1.3	1.4
094	Southwest Coastal Los Angeles County 1	8.86	11.6	10.3	9.4	8.4	7.0	5.1	6.1	5	4.4*	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	3.0*	2.1	2.3	2.4	2.5	1.9	2.2	1.8	2.5	2.5	1.9	1.4
591	East San Gabriel Valley 2	--	--	--	--	--	3.1	2.5--	2.3	2.1	2	1.9	2	2	3	2.1	1.3	1.1	1.1	0.8	0.7	1.0
ORANGE COUNTY:																						
3176	Central Orange County	8.00	7.5	5.8	5.3	5.3	6.8	4.7	5.4	3.9	4.1	3.3	3	2.9	3.6	2.7	2	2.1	2.3	2.6	2.1	2.2
3177	North Orange County	6.62	6.9	6.0	6.1	5.3	6.1	4.7	4.4	4.1	4	3.1	3	2.9	2.9	2.3	1.8	2.1	2.4	2.2	2.1	1.6
3186	Saddleback Valley 1	4.00	4.0	3.6	3.1	2.5	2.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	6.57	7.3	5.8	7.0	6.4	6.3	4.6	4.3	5.8	4.1	3.2	3	3.1	2	2.2	2.1	2.2	1.7	2.0	1.9	2.2
3812	Saddleback Valley 2	--	--	--	--	--	3.3	2.4	3.6	1.8	1.6	1.6	1.8	2.2	1.1	1	0.9	1	1.1	1.3	0.7	0.7
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	1.50	1.6	1.4	1.6	1.8	1.6	1.5	1.2	1.3*	1	0.8	1	0.8	0.6	0.7	0.5	0.6	0.5	1.5	0.9	0.7
4144	Metropolitan Riverside County 1	5.71	5.0	5.8	4.6	4.4	4.3	3.4	3	3.7	3	2.5	2.1	2.9	2	1.9	1.8	1.4	1.6	2.0	1.9	1.7
4146	Metropolitan Riverside County 2	6.50	5.4	5.0	4.6	4.1	4.3	4.5	3.9	3.4	2.1	2.4	2.3	2.1	2	1.8	1.7	1.5	1.5	1.6	1.4	--
4157	Coachella Valley 2**	--	--	--	--	--	2.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4158	Lake Elsinore	--	--	--	--	--	2.0	2.0	2	1.3*	0.9	1	1	1.4	1	0.7	0.6	0.7	0.7	0.6	1.4	0.6
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	2.7	2.1	1.9	2.4	1.9	1.9	1.9	1.9	2.4	1.6
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	--	--	--	--	--	2.6	1.8	1.6	2.9	2.1	1.8	1.8	1.7	1.6	1.5	1.8	1.3	1.1	1.7	1.2	1.3
5197	Central San Bernardino Valley 1	--	--	--	--	--	--	--	--	--	2.1*	2.1	2	1.8	1.9	1.5	1.4	1.1	1.1	1.3	1.2	1.2
5203	Central San Bernardino Valley 2	6.3	4.6	6.0	4.6	4.0	4.3	3.3	3.3	4.6	3.3	2.4	2.3	2.3	1.8	1.9	1.7	1.7	1.7	1.7	2.4	1.8
	District Maximum	13.9	17.3	17.0	13.5	11.7	10.0	7.7	10.1	7.3	6.7	5.9	6.4	5.1	4.3	4.6	3.6	4.7	4.0	3.5	3.8	3.3

* Less than 12 full months of data
** Salton Sea Air Basin
Refer to 2003 AQMP for 1976–1994 data

TABLE A-21

Nitrogen Dioxide – Annual Average (ppb)

(To Be Compared to Federal Standard (53.4 ppb) and State Standard (30 ppb), Annual Average of All Hours)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	46.4	41.5	33.8	36.4	39.0	36.6	33.1	33.6	29.6	20.4	25.1	25.8	25.3	23.0	19.4	18.5	19.0	19.5	17.7	17.8	15.4
069	East San Fernando Valley	45.4	46.1	42.4	41.6	45.6	41.5	41.9	40.2	35.6*	33.2	29.4	27.4	28.9	28.5	27.4	24.1	22.1*	21.9	20.2	21.8	--
072	South Coastal Los Angeles County 1	36.7	34.2	33.3	33.9	34.2	31.3	30.8	29.8	28.8*	28.0	24.1	21.5	20.7	20.8	21.2	19.8	17.7	20.8*	14.0*	--	--
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.2	25.3*	21.5	20.7	19.8
074	West San Fernando Valley	31.7	30.7	26.0	26.6	28.7	28.5	26.6	24.8	26.0*	21.4	20.2	17.4	18.6	18.0	17.1	16.7	14.9	14.9*	14.4*	11.7	13.5
075	Pomona/Walnut Valley	45.6	42.6	43.3	43.3	50.3	43.5	37.1	36.5	35.2	31.4	31.2	30.7	31.8	30.2	27.4	26.2	24.6	21.4	22.5	22.1	21.2
084	South Central Los Angeles County 1	46.3	41.2	42.8	39.3	42.8	38.6	36.9	35.7	31.2	30.1	--	30.6	29.1	30.1*	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	21.4	17.9	18.6	17.2	17.6	15.6	16.9
085	South San Gabriel Valley	45.6	39.3	36.3	36.9	39.1	36.6	35.2	34.4	35.3	30.5	31.2	28.3*	24.9	26.3	25.9	22.9	23.7	20.4*	20.6	19.5	20.5
087	Central Los Angeles	45.0	43.6	43.0	39.8	39.1	40.4	37.8	32.7	33.8	32.8	30.8*	28.8	29.9	27.5	28.1	25.0	23.1	24.8*	21.8	22.2	22.2
088	West San Gabriel Valley	37.5	37.8	34.1	35.1	37.9	29.6	34.5	33.5	32.2	27.0	27.8	24.5	24.6	23.5	22.1	19.6	20.3*	17.2	19.1*	16.6	15.3
090	Santa Clarita Valley	30.5	--	--	--	28.4	24.6	23.9	20.0	22.1	20.4	24.1	18.4	19.6	16.5	15.1	14.3	13.3	13.6	14.4	12.7	11.8
091	Northwest Coastal Los Angeles County	27.8	28.9	28.5	27.1	29.1	27.3	25.1	24.9	23.1	19.8	19.0	17.3	20.0	18.4	17.0	15.6	13.9	13.7	14.5	13.3	11.7
094	Southwest Coastal Los Angeles County 1	30.5	28.5	28.0	29.5	29.5	27.5	25.0	24.4*	23.8	31.0*	17.8	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	13.6*	13.4	15.5	14.0	14.3	15.9	12.1	13.4	10.4*	11.8	11.9	10.9
591	East San Gabriel Valley 2	38.0	32.8	30.0	27.6	32.8	29.0	27.4	27.2	27.1	24.0	22.4	20.6	22.7	18.2	17.0	15.4	12.9	14.2*	13.0	13.1	11.2
ORANGE COUNTY:																						
3176	Central Orange County	37.1	31.9	33.2	33.6	32.7	30.0	29.3*	24.4	24.0	19.9	21.1	19.7	20.8	20.3	17.9	17.5	16.8	14.6	18	15.2	14.6
3177	North Orange County	39.1	35.4	32.9	34.4	35.1	30.4	27.5	25.6	28.4	25.2	24.9	22.4	21.9	20.6	20.6	20.1	17.7	18	14.8*	15.2	15.0
3195	North Coastal Orange County	23.9	20.6	19.9	20.0	20.9	20.5	18.2	18.7	19.9	15.1	13.1	14.5	13.2	13.2	13.0	11.3	10.0	10.4	11.6	10.8	11.6
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	22.3	21.0	15.8	17.0	19.5	17.8	17.5	17.2	17.3*	13.0	12.0	10.3	10.3	9.3	8.1	8.5	8.0	7.8	7.5	7.1	6.2
4144	Metropolitan Riverside County 1	30.6	29.4	26.2	22.5	22.5	23.6	24.7	23.7	21.7	17.2	22.2	19.9	20.6	19.2	17.1	16.8	16.6	15.5	17.3	15.1	14.4
4146	Metropolitan Riverside County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	25.8*	20.0	17.2	16.9	16.5*	15.8*	15.8	--
4158	Lake Elsinore	20.8	18.2	16.5	17.4	20.0	17.5	18.5	17.3	18.2*	15.1	14.2	15.1	17.4	12.9	12.9	10.1	9.6	10.2	8.4	8.2	8.7
4164	Banning Airport	--	--	--	21.5	24.3	23.7	21.1	19.9	19.3*	16.5	14.8	16.1	14.7	12.8	10.9	11.6	9.5	9.5	8.5	8.5	8.4
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	19.4	18.1	17.4	15.8	15.1	15.3	13.9	13.7	13.7	13.4
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	46.4	38.7	34.1	35.9	39.8	38.0	38.4	36.9	34.9	30.5	31.3	31.0	27.6	23.5	23.9	20.4	19.6	19.5	17.7*	16.6	15.9
5197	Central San Bernardino Valley 1	42.4	38.6	36.5	36.2	38.8	36.4	35.8	33.4*	30.7	27.3	31.0	27.0	23.9	20.7	23.5	23.1	21.1	22.1	20.6	20.2	18.7
5203	Central San Bernardino Valley 2	40.4	38.4	35.3	33.9	35.8	32.5	30.3	29.6	27.0	26.1	25.9	25.2	24.5	21.7	19.6	18.8	16.9	18.8	17.6	18.0	15.2
	District Maximum	46.4	46.1	43.3	43.3	50.3	43.5	41.9	40.2	35.6	33.2	31.3	31.0	31.8	30.2	28.1	26.2	24.6	25.3	22.5	22.2	22.2

* Less than 12 full months of data

** Salton Sea Air Basin

Refer to 2003 AQMP for 1976–1994 data

TABLE A-22

Nitrogen Dioxide – Annual Maximum 1-Hour Average (ppm)

(To Be Compared to Federal Standard (0.100 ppm) and State Standard (0.18 ppm), 1-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
060	East San Gabriel Valley 1	0.22	0.15	0.16	0.14	0.16	0.15	0.12	0.12	0.12	0.10	0.09	0.11	0.12	0.10	0.10	0.077	0.080	0.072	0.077	0.070	0.071
069	East San Fernando Valley	0.18	0.20	0.20	0.14	0.18	0.17	0.25	0.26	0.14*	0.12	0.09	0.10	0.09	0.11	0.09	0.082	0.068*	0.080	0.073	0.073	--
072	South Coastal Los Angeles County 1	0.21	0.17	0.20	0.16	0.15	0.14	0.13	0.13	0.14*	0.12	0.14	0.10	0.11	0.13	0.11	0.093	0.106	0.077*	0.067*	--	--
033	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.090	0.091*	0.081	0.136	0.102
074	West San Fernando Valley	0.14	0.16	0.20	0.14	0.12	0.11	0.09	0.09	0.13*	0.08	0.09	0.07	0.08	0.09	0.07	0.075	0.056	0.071*	0.058*	0.059	0.073
075	Pomona/Walnut Valley	0.18	0.18	0.15	0.15	0.16	0.14	0.13	0.11	0.12	0.11	0.08	0.10	0.10	0.11	0.10	0.097	0.087	0.082	0.079	0.089	0.072
084	South Central Los Angeles County 1	0.21	0.25	0.20	0.16	0.18	0.14	0.15	0.14	0.13	0.10	0.11	0.14	0.10	0.12*	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.09	0.077	0.075	0.079	0.070	0.068	0.074
085	South San Gabriel Valley	0.23	0.17	0.15	0.14	0.16	0.14	0.14	0.12	0.14	0.12	0.09	0.10*	0.11	0.10	0.10	0.079	0.091	0.081*	0.079	0.087	0.070
087	Central Los Angeles	0.24	0.25	0.20	0.17	0.21	0.16	0.14	0.14	0.16	0.16	0.13*	0.11	0.10	0.12	0.12	0.089	0.110	0.077*	0.090	0.082	0.079
088	West San Gabriel Valley	0.22	0.19	0.17	0.16	0.16	0.17	0.15	0.15	0.14	0.12	0.10	0.12	0.09	0.11	0.08	0.071	0.087*	0.071	0.067*	0.075	0.075
090	Santa Clarita Valley	0.16	--	--	--	0.10	0.10	0.10	0.10	0.12	0.09	0.09	0.08	0.08	0.07	0.06	0.059	0.060	0.066	0.065	0.058	0.065
091	Northwest Coastal Los Angeles County	0.20	0.18	0.14	0.13	0.13	0.16	0.11	0.11	0.12	0.09	0.08	0.08	0.08	0.09	0.08	0.071	0.081	0.061	0.051	0.064	0.068
094	Southwest Coastal Los Angeles County 1	0.18	0.15	0.17	0.15	0.13	0.13	0.11*	0.10	0.12*	0.08	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	0.09*	0.09	0.10	0.08	0.09	0.08	0.076	0.098	0.062*	0.078	0.087	0.087
591	East San Gabriel Valley 2	0.20	0.14	0.13	0.13	0.14	0.13	0.12	0.10	0.12	0.12	0.09	0.10	0.11	0.10	0.09	0.079	0.078	0.060*	0.056	0.066	0.066
ORANGE COUNTY:																						
3176	Central Orange County	0.18	0.15	0.10	0.13	0.12	0.13	0.12*	0.10	0.13	0.12	0.09	0.11	0.10	0.09	0.07	0.073	0.074	0.067	0.082	0.076	0.059
3177	North Orange County	0.20	0.16	0.15	0.13	0.16	0.12	0.13	0.12	0.16	0.12	0.09	0.09	0.08	0.08	0.10	0.083	0.070	0.068	0.085*	0.084	0.058
3195	North Coastal Orange County	0.18	0.14	0.12	0.12	0.12	0.11	0.08	0.11	0.11	0.10	0.09	0.10	0.07	0.08	0.07	0.070	0.061	0.074	0.076	0.061	0.052
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	0.09	0.08	0.07	0.07	0.07	0.07	0.08	0.10	0.06*	0.07	0.10	0.09	0.06	0.05	0.05	0.046	0.045	0.045	0.052	0.046	0.042
4144	Metropolitan Riverside County 1	0.15	0.11	0.12	0.10	0.13	0.10	0.15	0.10	0.09	0.09	0.08	0.08	0.07	0.09	0.08	0.065	0.063	0.062	0.060	0.060	0.057
4146	Metropolitan Riverside County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	0.09*	0.08	0.061	0.057	0.060*	0.058*	0.056	--
4158	Lake Elsinore	0.21	0.10	0.11	0.09	0.11	0.08	0.09	0.07	0.08*	0.06	0.07	0.07	0.06	0.06	0.06	0.051	0.050	0.048	0.047	0.045	0.047
4164	Banning Airport	--	--	--	0.26	0.31	0.21	0.24	0.15	0.09*	0.08	0.07	0.11	0.08	0.08	0.06	0.066	0.061	0.072	0.052	0.052	0.050
4165	Mira Loma	--	--	--	--	--	--	--	--	--	--	--	0.08	0.07	0.10	0.08	0.062	0.059	0.061	0.054	0.058	0.068
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	0.20	0.15	0.15	0.14	0.13	0.15	0.13	0.12	0.11	0.11	0.10	0.10	0.10	0.09	0.11	0.079	0.069	0.067	0.062*	0.074	0.072
5197	Central San Bernardino Valley 1	0.17	0.17	0.14	0.15	0.15	0.12	0.13	0.12*	0.12	0.06	0.10	0.09	0.09	0.10	0.11	0.072	0.076	0.069	0.082	0.070	0.089
5203	Central San Bernardino Valley 2	0.16	0.15	0.14	0.11	0.14	0.10	0.11	0.11	0.10	0.12	0.08	0.09	0.08	0.09	0.08	0.069	0.062	0.067	0.072	0.073	0.071
	District Maximum	0.24	0.25	0.2	0.26	0.31	0.21	0.25	0.26	0.16	0.16	0.14	0.14	0.12	0.13	0.12	0.097	0.110	0.091	0.090	0.136	0.102

* Less than 12 full months of data ** Salton Sea Air Basin

Refer to 2003 AQMP for 1976–1994 data

TABLE A-23

Sulfur Dioxide – Annual Maximum 1-Hour Average (ppm)

(To Be Compared to Federal Standard (0.075 ppm) and State Standard (0.25 ppm), 1-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2021	2013	2014	
LOS ANGELES COUNTY:																						
60	East San Gabriel Valley 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
69	East San Fernando Valley	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01*	0.02	0.01	0.01	0.01	0.01	0.01	0.015	0.009	0.007	0.011	0.005	--
72	South Coastal Los Angeles County 1	0.14	0.04	0.04	0.08	0.05	0.05	0.05	0.03	0.03	0.04	0.04	0.03	0.11	0.09	0.02	0.040	0.015	0.022	0.022	--	--
33	South Coastal Los Angeles County 3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.043	0.023	0.015	0.015	0.038
74	West San Fernando Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
84	South Central Los Angeles County	0.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
85	South San Gabriel Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
87	Central Los Angeles	0.01	0.01	0.02	0.14	0.05	0.08	0.03	0.02	0.05*	0.08	0.07	0.03	0.01	0.01	0.01	0.010	0.020	0.005	0.006	0.005	0.013
88	West San Gabriel Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
90	Santa Clarita Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
91	Northwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
94	Southwest Coastal Los Angeles County 1	0.06	0.06	0.1	0.03	0.09	0.17	0.04	0.07	0.03	0.03*	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	0.02*	0.04	0.02	0.02	0.02	0.02	0.026	0.012	0.005	0.010	0.015	0.015
ORANGE COUNTY:																						
3176	Central Orange County	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3177	North Orange County	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3195	North Coastal Orange County	0.02	0.01	0.03	0.02	0.02	0.02	0.01	0.03	0.02	0.03	0.01	0.01	0.01	0.01	0.01	0.010	0.008	0.006	0.004	0.009	0.005
RIVERSIDE COUNTY:																						
4144	Metropolitan Riverside County	0.01	0.01	0.04	0.03	0.03	0.11	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.018	0.051	0.004	0.008	0.006	0.002
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.000
5197	Central San Bernardino Valley 1	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.03*	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.007	0.012	0.023	0.004	0.004	0.004
5203	Central San Bernardino Valley 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	District Maximum	0.14	0.06	0.1	0.14	0.09	0.17	0.05	0.07	0.05	0.08	0.07	0.03	0.11	0.09	0.02	0.04	0.051	0.023	0.022	0.015	0.038

* Less than 12 full months of data

** Salton Sea Air Basin

Refer to 2003 AQMP for 1976–1994 data

TABLE A-24
Sulfates (PM10) – Annual Maximum 24-Hour Average (µg/m³)
(To Be Compared to State Standard of 25 µg/m³, 24-Hour Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
60	East San Gabriel Valley 1	12.7	11.9	12.9	10.5	16.9	14.3	12.7	12.3	13.1	10.8	10.8	17.0	34.2	17.3	7.3	7.3	6.6	5.2	4.8	14.3	21.0+
69	East San Fernando Valley	14.9	12.0	14.7	9.8	11.4	15.7	14.6	12.2	15.3	11.0	11.8	13.3	10.2	10.8	8.8	8.0	7.4	6.2	5.4	4.0*	--
72	South Coastal Los Angeles County 1	18.2	14.9	11.3	12.8	13.1	11.9	15.0	14.4	15.6	14.7	10.8	16.5	10.3	9.7	9.5	10.0	6.1	5.2	4.5	--	--
77	South Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	15.0	15.9	13.5	17.9	8.4	11.0	7.3	12.6	5.9	4.9	4.8	4.5	6.3
87	Central Los Angeles	16.2	14.7	16.2	10.3	16.7	14.6	16.2	13.5	14.5	10.5	11.7	13.1	9.4	12.7	9.5	7.5	8.0	5.7	5.8	11	6.1
90	Santa Clarita Valley	11.2	8.4	10.4	7.2	17.3	--	9.2	9.2	11.2	8.9	9.3	8.8	9.2	6.7	6.0	6.9	6.1	4.9	3.7	4.3	5.3
94	Southwest Coastal Los Angeles County1	18.1	16.1	15.3	11.6	17.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	12.6	11.0	12.4	10.7	13.4	8.4	8.5	5.9	5.4	5.6	5.1	6.5
ORANGE COUNTY:																						
3176	Central Orange County	14.5	17.3	14.7	12.9	9.6	--	9.9	11.8	11.3	12.2	9.0	12.8	12.1	8.7	7.6	6.6	6.5	4.4	4.7	9.4	4.2
3186	Saddleback Valley 1	12.3	15.1	14.2	9.1	8.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3812	Saddleback Valley 2	--	--	--	--	8.6	12.3	10.1	10.9	10.5	9.2	9.2	9.4	8.8	6.8	6.1	7.4	4.8	4.2	4.4	4.0	3.3
RIVERSIDE COUNTY:																						
4137	Coachella Valley 1**	6.8	5.7	5.9	5.5	5.4	6.2	6.0	5.3	6.5	5.2	5.5	4.9	5.8	5.2	4.8	5.1	4.4	5.9	3.5	2.6	4.6
4144	Metropolitan Riverside County 1	22.3	14.9	14.8	10.0	11.1	10.7	11.3	10.5	12.4	24.8	10.5	10.9	13.7	7.3	8.3	7.2	5.3	7.7	4.2	4.1	5.9
4149	Perris Valley	13.5	8.0	9.1	7.9	8.7	7.4	8.3	7.9	6.9	7.8	7.7	9.0	10.1	6.5	6.3	5.8	4.4	3.8	3.4	3.5	3.6
4150	San Gorgonio Pass	7.3	8.5	8.7	6.5	2.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4155	Norco/Corona	13.6	11.3	13.1	9.8	10.1	11.0	10.2	10.5	9.9	10.1	7.1	10.7	18.9	13.4	10.7	7.0	5.1	4.4	4.2	3.8	3.8
4157	Coachella Valley 2**	10.4	6.7	5.8	5.4	4.9	6.9	7.5	7.2	6.2	6.7	6.1	5.4	5.2	5.6	5.1	4.8	5.7	7.6	3.9	3.2	4.1
4164	Banning Airport				6.1	4.6	6.9	6.4	8.0	5.8	6.7	7.1	7.5	6.2	6.3	5.4	5.5	4.4	5	2.9	2.7	3.8
4165	Mira Loma Van Buren	--	--	--	--	--	--	--	--	--	--	--	10.1	19.6	8.6	5.9	5.3	5.4	4.7	4.2	4.2	4.9
SAN BERNARDINO COUNTY:																						
5181	Central San Bernardino Mountains	4.8	5.2	4.7	4.5	3.0	5.1	5.2	4.0	3.7	4.7	5.9	4.2	3.9	4.4	3.9	4.7	4.0	3.7	3.6	2.9	4.2
5197	Central San Bernardino Valley 1	14.2	11.0	11.2	9.8	11.6	11.6	11.3	11.6	12.4	10.2	9.0	11.7	22.2	8.9	6.1	6.2	6.0	4.6	4.1	5.0	14.7+
5203	Central San Bernardino Valley 2	11.9	11.6	9.2	13.1	10.8	10.6	10.3	10.8	11.4	10.4	9.3	10.0	9.7	8.3	5.6	6.6	5.5	4.4	4.6	4.6	9.0
5204	East San Bernardino Valley	11.3	9.9	8.8	9.6	9.8	10.2	9.0	9.7	9.0	10.5	8.6	11.7	11.3	7.4	5.4	6.6	4.9	4.2	3.6	3.4	7.3
5817	Southwest San Bernardino Valley	--	--	--	4.6	10.1	10.2	11.4	10.7	11.0	11.1	9.3	11.2	22.8	12.4	7.0	7.3	5.5	5.1	4.8	3.9*	--
	District Maximum	22.3	17.3	16.2	13.1	17.6	15.7	16.2	14.4	15.6	24.8	13.5	17.9	34.2	17.3	10.7	12.6	8.0	7.7	5.8	14.3	21.0+

* Less than 12 full months of data
** Salton Sea Air Basin
+Higher concentrations recorded due to the 4th of July firework activities.
Refer to 2003 AQMP, Appendix II for 1976–1994 data

TABLE A-25
Lead (TSP) – Annual Maximum Monthly Average (µg/m³)
(To Be Compared to State Standard of 1.5 µg/m³, Monthly Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
LOS ANGELES COUNTY:																						
69	East San Fernando Valley	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
72	South Coastal Los Angeles County 1	0.05	0.09	0.05	0.07	0.06	0.05	0.05	0.03	0.10	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	--	--
77	South Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	0.02	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.010
84	South Central Los Angeles County 1	0.06	0.09	0.07	0.04	0.17	0.09	0.23	0.04	0.04	0.03	0.03	0.02	0.03	0.03	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	0.01	0.01	0.01	0.01	0.01	0.014
85	South San Gabriel Valley	0.07	0.09	0.08	0.07	0.21	0.09	0.07	0.06	0.05	0.03	0.03*	0.03	0.04	0.02	0.04	0.02	0.01	0.01	0.01	0.02	0.014
87	Central Los Angeles	0.07	0.08	0.07	0.06	0.13	0.06	0.06	0.05	0.15	0.03	0.03	0.02	0.04	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.013
94	Southwest Coastal Los Angeles County	0.04	0.04	0.06	0.06	0.05	0.08	0.04	0.02	0.17	0.01	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.008
LOS ANGELES COUNTY (Source-Specific):																						
	Van Nuys Airport, Van Nuys	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	0.06	0.13	0.09	--	--
	Trojan Battery, Santa Fe Springs	--	--	--	--	--	--	--	--	--	--	--	--	--	0.10	0.15	0.08	0.12	0.12	0.11	0.05	0.05
	Quemetco, City of Industry	--	--	--	--	0.28	0.44	0.46	0.15	0.18	0.13	0.38	0.10	--	0.06*	0.11	0.12	0.07	0.04	0.07	0.04	0.02
	Exide (Rehrig), Vernon	--	--	--	--	--	--	--	--	--	--	--	--	1.97*	2.88	0.80	0.48	0.54	0.13	0.12	0.10	0.03
	Exide (ATSF), Vernon	--	--	--	--	--	--	--	--	--	--	--	0.23	1.01	0.25	0.09	0.08	0.07	0.04	0.02	0.02	0.02
	Exide (Ayers St.), Vernon	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04*	0.03	0.02	--	--	--	--	--
ORANGE COUNTY:																						
3176	Central Orange County	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RIVERSIDE COUNTY:																						
4144	Metropolitan Riverside County 1	0.04	0.08	0.07	0.08	0.06	0.06	0.04	0.03	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.008
4146	Metropolitan Riverside County 2	0.05	0.05	0.07	0.10	0.05	0.04	0.03	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--
SAN BERNARDINO COUNTY:		0.05	0.04	0.04	0.05	0.07	0.07	0.05	0.02	0.08	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	--	--	--	--
5175	Northwest San Bernardino Valley	0.06	0.04	0.04	0.05	0.07	0.07	0.05	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.010
5203	Central San Bernardino Valley	0.05	0.06	0.04	0.05	0.07	0.06	0.05	0.03	0.14	0.02	0.02	0.02	0.04	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.012
	District Maximum	0.07	0.09	0.08	0.1	0.28	0.44	0.46	0.15	0.18	0.13	0.38	0.23	1.97	2.88	0.8	0.48	0.12	0.13	0.12	0.10	0.014

* Less than 12 full months of data
Refer to 2003 AQMP for 1976–1994 data

TABLE A-26
Lead (TSP) – Annual Maximum 3-Month Rolling Average (µg/m³)
(To Be Used for Comparison to Federal Standard of 0.15 µg/m³, 3-Month Rolling Average)

STN#	LOCATION	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
LOS ANGELES COUNTY:																						
69	East San Fernando Valley	0.05	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
72	South Coastal Los Angeles County 1	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.03	0.04	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	--
77	South Coastal Los Angeles County 2	--	--	--	--	--	--	--	--	--	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
84	South Central Los Angeles County 1	0.05	0.07	0.07	0.05	0.09	0.07	0.11	0.04	0.04	0.03	0.03	0.02	0.03	0.03	--	--	--	--	--	--	--
112	South Central Los Angeles County 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.02	0.01	0.01	0.01	0.01	0.01	0.01
85	South San Gabriel Valley	0.06	0.06	0.07	0.06	0.10	0.08	0.05	0.05	0.03	0.03	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
87	Central Los Angeles	0.06	0.06	0.07	0.05	0.07	0.05	0.05	0.04	0.06	0.06	0.02	0.01	0.03	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01
94	Southwest Coastal Los Angeles County	0.04	0.04	0.05	0.05	0.04	0.05	0.04	0.03	0.07	0.07	--	--	--	--	--	--	--	--	--	--	--
820	Southwest Coastal Los Angeles County	--	--	--	--	--	--	--	--	--	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.01	0.01
LOS ANGELES COUNTY (Source-Specific):																						
	Van Nuys Airport, Van Nuys	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.04	0.04	0.08	0.08	--	--
	Trojan Battery, Santa Fe Springs	--	--	--	--	--	--	--	--	--	--	--	--	--	0.08	0.12	0.07	0.11	0.08	0.08	0.04	0.04
	Quemetco, City of Industry	--	--	--	--	0.22	0.37	0.33	0.12	0.15	0.11	0.22	0.09	--	--	0.10	0.10	0.06	0.03	0.04	0.03	0.01
	Exide (Rehrig), Vernon	--	--	--	--	--	--	--	--	--	--	--	--	--	2.49	0.66	0.39	0.46	0.15	0.10	0.07	0.02
	Exide (ATSF), Vernon	--	--	--	--	--	--	--	--	--	--	--	0.21	0.55	0.22	0.08	0.05	0.06	0.03	0.02	0.02	0.02
	Exide (Ayers St.), Vernon	--	--	--	--	--	--	--	--	--	--	--	--	--	0.03	0.02	0.02	--	--	--	--	--
ORANGE COUNTY:																						
3176	Central Orange County	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RIVERSIDE COUNTY:																						
4144	Metropolitan Riverside County 1	0.04	0.05	0.04	0.05	0.05	0.05	0.05	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.03	0.01	0.01	0.01	0.01	0.01	0.01
4146	Metropolitan Riverside County 2	0.03	0.03	0.05	0.06	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--
SAN BERNARDINO COUNTY:																						
5175	Northwest San Bernardino Valley	0.04	0.04	0.04	0.04	0.05	0.05	0.04	0.02	0.04	0.03	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5203	Central San Bernardino Valley	0.04	0.05	0.03	0.04	0.05	0.05	0.05	0.03	0.08	0.07	0.01	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	District Maximum	0.06	0.07	0.07	0.06	0.22	0.37	0.33	0.12	0.15	0.11	0.22	0.21	0.55	2.49	0.66	0.39	0.46	0.15	0.10	0.07	0.01

* Less than 12 full months of data
Refer to 2003 AQMP for 1976–1994 data

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 33

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

PRESS RELEASE

FOR IMMEDIATE RELEASE: April 12, 2019

South Coast Air Quality Management District to request re-classification for ozone in Coachella Valley
Action would extend attainment deadline to 2024

DIAMOND BAR – The South Coast Air Quality Management District (South Coast AQMD) today announced plans to seek a voluntary re-classification from the U.S. Environmental Protection Agency (U.S. EPA) for the 1997 8-hour federal standard for ozone in the Coachella Valley. If granted, the area will be reclassified to "extreme" status and will allow South Coast AQMD up to five additional years to reach attainment.

"We constantly face challenges such as hotter summer weather and the threat of climate change in the region," said South Coast AQMD's Executive Officer Wayne Nastri. "Although we need more time to bring the Coachella Valley into attainment, we are confident that projected emission reductions coupled with our strict regulations will allow us to combat ozone levels and meet federal standards under this new deadline."

Coachella Valley is currently classified as "severe-15" nonattainment for ground-level ozone and is facing a deadline of June 2019 to meet the federal air quality standard of 0.08 parts per million (ppm). Coachella Valley is unique in its geography in that it is located downwind from the South Coast Air Basin. As such, when high levels of ozone are formed in the South Coast Air Basin, it is transported to the Coachella Valley. Similarly, when ozone precursors such as nitrogen oxides (NOx) and volatile organic compounds (VOCs) are emitted from mobile sources and stationary sources located in the South Coast Air Basin, they are also transported to the Coachella Valley. As a result, ozone levels in the Coachella Valley are primarily due to emissions in the South Coast Air Basin.

The Coachella Valley has attained federal standards for one-hour ozone, particulate matter 2.5, nitrogen oxides, lead, and sulfur dioxide. Due to South Coast AQMD's stationary and mobile source emission reduction programs both in the South Coast Air Basin and in Coachella Valley, ground level ozone in the valley has decreased from 0.108 ppm in 2003 to 0.87 ppm in 2016.

In the past two years, unusual weather patterns that favor the formation of ozone such as higher temperatures and an increase of stagnant weather conditions have resulted in higher levels of ozone statewide and across the western United States. Because of that, Coachella Valley saw an increase in ozone levels in 2017 and 2018.

Based on these recent measurements, Coachella Valley will not be able to meet the 2019 deadline and the South Coast AQMD plans to seek a re-classification that will extend the attainment deadline to June 2024. The new "extreme" classification, if approved by U.S. EPA, would result in stricter emissions thresholds for major stationary sources in the area lowering from 25 tons per year to 10 tons per year for NOx and VOCs, which could also result in more stringent permitting requirements. In addition, the agency will be required to revise its State Implementation Plan that will serve as a roadmap towards meeting the federal standard.

South Coast AQMD continues to reduce ozone and improve air quality in the Coachella Valley and has provided more than $50 million in grant funding towards paving dirt roads and parking lots, clean energy projects and cleaner vehicles. In addition, the agency continues to enforce the Fugitive Dust Rule through compliance and training programs that ensures facilities are using best available control measures for dust mitigation.

As unusual hotter temperatures and wildfires continue, the agency is planning on conducting a study to evaluate the meteorological trends contributing to higher ozone levels in the basin. The results are expected to highlight uncertainties associated with climate change and how it affects air quality.

Exposure to ground-level ozone can cause shortness of breath, aggravate lung diseases and can cause chronic obstructive pulmonary disease. These effects have been found even in healthy people, but can be more serious in people with lung diseases such as asthma.

South Coast AQMD staff will be presenting this proposed plan to the Governing Board for approval in June.

South Coast AQMD is the air pollution control agency for Orange County and major portions of Los Angeles, San Bernardino and Riverside counties. For more tips on what you can do to improve air quality, visit www.aqmd.gov or, watch our Do One Thing Video.

For news, air quality alerts, event updates and more, follow us on Facebook, Twitter and Instagram.

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Reviewed by Nick, Nancy (9/9)

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 34

SOUTH COAST
AIR QUALITY
MANAGEMENT DISTRICT

VOC Controls

2016 AQMP WHITE PAPER

OCTOBER 2015

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Introduction

This white paper evaluates the need for additional volatile organic compound (VOC) controls to achieve more stringent annual fine particulate matter (PM2.5) and 8-hour ozone standards in the South Coast Air Basin (SoCAB). It assesses the role of VOCs in forming ozone and PM2.5 to inform policymakers of the most efficient and effective strategies to attain the federal standards that are the subject of the upcoming 2016 Air Quality Management Plan (AQMP).

The science behind the formation of ozone and particulate matter from VOCs is also summarized. A state-of-the-science numerical modeling system (WRF-CMAQ) is used to estimate the maximum allowable nitrogen oxides (NOx) and VOC emissions that will lead to regional ozone and PM2.5 concentrations that meet the federal standards. Given the results of this modeling, the implications of various NOx and VOC control strategies are analyzed.

What Are VOCs?

VOCs are chemicals containing carbon that readily evaporate. Some VOCs may be gases at room temperature. VOCs are widely used in modern society in fuels, solvents, coatings, cleaning supplies, building products, and many other materials. In addition to evaporation or direct emissions of organic gases, some VOCs are emitted as a byproduct of combustion processes, such as wood burning, power generation, or internal combustion engines. Thus, VOCs are emitted from mobile sources such as cars and trucks, and stationary sources such as refineries, chemical plants, and households. Since VOCs evaporate readily, in the absence of appropriate control measures, these compounds will ultimately end up in the atmosphere. Subsequent chemical reactions of VOCs in the atmosphere can form surface level ozone pollution and particulate matter.

Atmospheric scientists classify VOCs into several subcategories. The degree to which each specific VOC impacts the formation of ozone is a function of its unique chemical reactivity, its atmospheric concentration, and the atmospheric concentrations of other chemicals needed for these complex chemical reactions. VOCs that form ozone at extremely slow rates are considered minimally reactive and are often classified as "exempt" from current VOC rules and regulations. However, toxicity or other potential adverse environmental impacts from these VOCs should also be considered. The ability for a specific VOC to form particulate matter is dependent on how fast it reacts with other atmospheric compounds and the physical and chemical properties of the resulting products.

We can also classify VOCs and their chemical reaction products into three sub-categories dependent on how readily they evaporate and their ability to exist in the gas-phase. VOCs with high volatility evaporate quickly, but are less likely to contribute to particulate matter, because these compounds generally remain as gases once they evaporate. On the other hand, compounds with lower volatilities evaporate at a slower rate, but are more likely to contribute to particulate matter as they or their reaction products may condense (transition from gas to liquid or solid form) once they are in the atmosphere. Compounds that have a significant fraction of their mass in both the gas and particle-phase in the atmosphere are referred to semi-volatile organic compounds (SVOCs). Compounds that have most of their mass in the gas-phase, but can transition to the particle phase under certain atmospheric conditions are classified as intermediate volatility organic compounds (IVOCs). While a direct comparison is difficult, low vapor pressure volatile organic compounds (LVP-VOCs),

defined under the California Air Resources Board consumer products regulations, may fall into the SVOC category. In addition, atmospheric reactions can produce products with drastically different volatilities than the parent compounds.

The Role of VOCs in Ozone Formation

Ozone concentrations in the South Coast Air Basin

Atmospheric ozone is a powerful oxidant with significant adverse effects on human health and the environment. While ozone concentrations have declined significantly in the Basin over the past few decades, levels still exceed the current federal or state ozone standards. In addition, the recently proposed federal standard between 65 and 70 ppb will make future attainment even more challenging [1]. In recent years, the significant downward trend in Basin-wide ozone concentrations has begun to level off. FIGURE 1 details the yearly trend in ozone concentrations and the trend in the number of days that exceed the current federal standard.

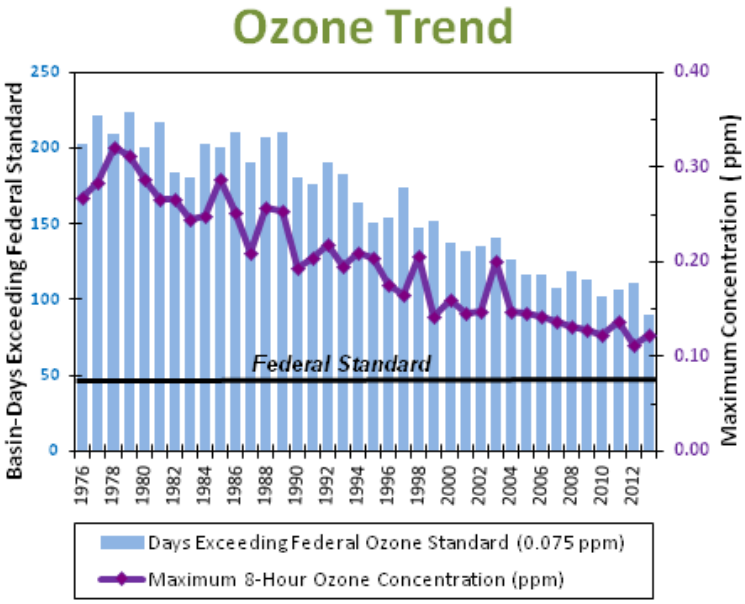

FIGURE 1

Basin-wide maximum 8-hour ozone concentrations and Basin-days exceeding the federal standard**.**

Certain air quality monitoring stations located in San Bernardino and Riverside counties exceed the current 75 ppb federal ozone standard over 60 days per year (FIGURE 2). Higher local ozone concentrations in these regions can be attributed to the significant upwind O_3, NOx, and VOC precursor emissions transported by the daily sea-breeze in the summer, local emissions, and the timing of the daily emissions and peak sunlight intensity.

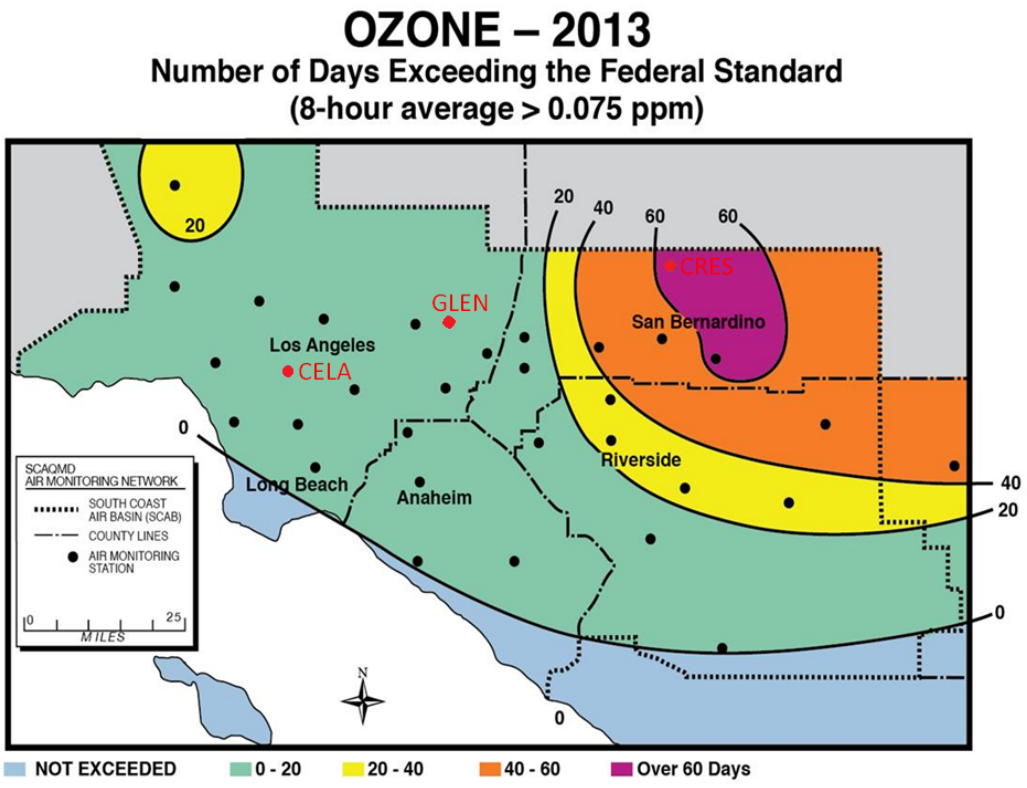

FIGURE 2

Spatial distribution of ozone exceedances in the SoCAB. Central Los Angeles (CELA), Glendora (GLEN), and Crestline (CRES) are highlighted.

How do VOCs form ozone?

Ozone (O_3) is not emitted directly into the atmosphere; near-surface ozone, in contrast to stratospheric ozone, is formed by the reaction of VOCs with NOx in the presence of sunlight. NOx is generated from combustion processes and is emitted in large quantities within the SoCAB. The chemical reactions that form ozone are highly complex and depend not only on NOx and VOC levels, but also on the ratio of VOC to NOx concentrations. NOx emissions can even reduce ozone concentrations in the immediate vicinity of an emission source, but will contribute to ozone formation downwind.

FIGURE 3

Recipe for ozone production

A decrease in ambient VOC concentrations generally leads to a decrease in ozone. However, because of the complex chemistry involved, a decrease in NOx concentrations may lead to a decrease or an increase in ambient ozone depending on the local VOC concentration. The local VOC concentration is a mixture of many distinct compounds, each with unique impacts on ozone formation. This complex dependence on NOx and VOC concentrations leads to interesting policy implications, which can be explored using comprehensive air quality models.

How Do VOCs Form Particulate Matter?

The SoCAB does not currently meet federal and state standards for PM2.5, particles with diameters less than 2.5 μm (FIGURE 4). These particles consist of a myriad of different chemical compounds in both solid and liquid form. While some PM2.5 is emitted directly from sources, the majority of ambient PM2.5 is formed from chemical reactions and processes in the atmosphere. These small particles are particularly dangerous due to their ability to penetrate deep into the lungs. Many studies have linked inhalation of PM2.5 to serious adverse respiratory and cardiovascular affects. In order to develop an effective control strategy, one must consider the composition and by extension, the sources of PM2.5 in the Basin. In the Basin, approximately 30-50% of the PM2.5 mass is composed of organic compounds. The remaining fraction consists of elemental carbon, metals, dust, and inorganic sulfate, nitrate, ammonium, and chloride compounds. The organic fraction, known as organic aerosol (OA), is composed of a complex mixture of organic chemicals that may continue to evolve as it ages in the atmosphere.

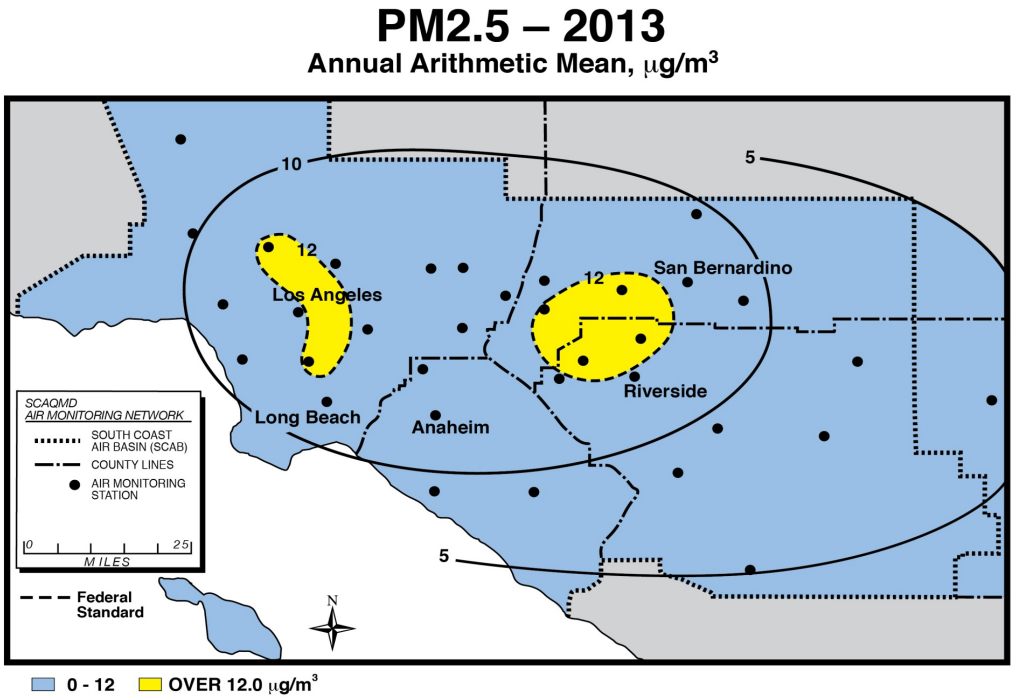

FIGURE 4

Spatial distribution of PM2.5 concentrations in the SoCAB

Different chemical reactions are responsible for the formation of ozone and OA from gaseous organic compounds. Since both ozone and PM2.5 formation are largely dominated by atmospheric reactions, we must consider the potential for a gaseous organic compound to contribute to both ozone and PM2.5 levels. Organic compounds with large ozone formation potentials may or may not contribute significantly to PM2.5 mass. Similarly, many gaseous organic compounds classified as VOCs, IVOCs, or SVOCs that contribute to OA may or may not play a role in the formation of ozone [2].

Ozone Control Modeling Analysis

The Community Multiscale Air Quality (CMAQ) model has been used to investigate the O_3 concentrations as a result of various levels of VOC and NOx emissions under different control strategies. The CMAQ model, which is the U.S. EPA recommended regulatory model, is considered the preeminent, state-of-the-science air quality model for analyzing air quality improvement strategies. Since ozone concentrations are a complex function of both NOx and VOCs concentrations, we use a three-dimensional plot to visualize this dependency. The Empirical Kinetics Modeling Approach (EKMA) ozone "isopleths" diagrams illustrate the outcomes of this complicated chemistry.

The ozone isopleth diagram in FIGURE 5 illustrates how 8-hour ozone concentrations in Crestline (the monitoring station currently with the most ozone exceedances in the Basin) respond to decreases in total Basin-wide anthropogenic VOC and NOx emissions beyond the existing adopted rules and regulations. In ozone isopleths, NOx and VOC emissions are each reduced from base levels equally across all sources; however, sensitivity tests demonstrate that the current cross-the-board reduction approach does not show significant differences from source-specific control scenarios and thus provides a reliable tool to evaluate potential attainment strategies. The corresponding ozone isopleths diagram for Central Los Angeles is presented in FIGURE 6. Estimated VOC and NOx emissions following the continued implementation of adopted rules and regulations in the 2023 timeframe are defined by the upper-right corner of the plot. The federal ozone standard is met within the yellow and green regions of the diagram (corresponding to Air Quality Index levels and colors). Three paths are illustrated on both isopleths diagrams to highlight the potential effects of different control strategies and to aid in policy discussions. Each control scenario on the plot illustrates the effects of reducing VOCs and/or NOx equally across all sources. Path C illustrates the impact of a control scenario that attains the ozone standards with only additional NOx reductions beyond what is required in current rules. In this scenario, additional VOC reductions beyond current requirements are not applied. A control scenario focusing solely on additional VOC control is shown with Path A. A hypothetical control scenario where additional (beyond scheduled reductions) NOx and VOC reductions occur at the same rate is illustrated with Path B. This is provided as an example of the results of a control strategy emphasizing VOC and NOx reductions equally.

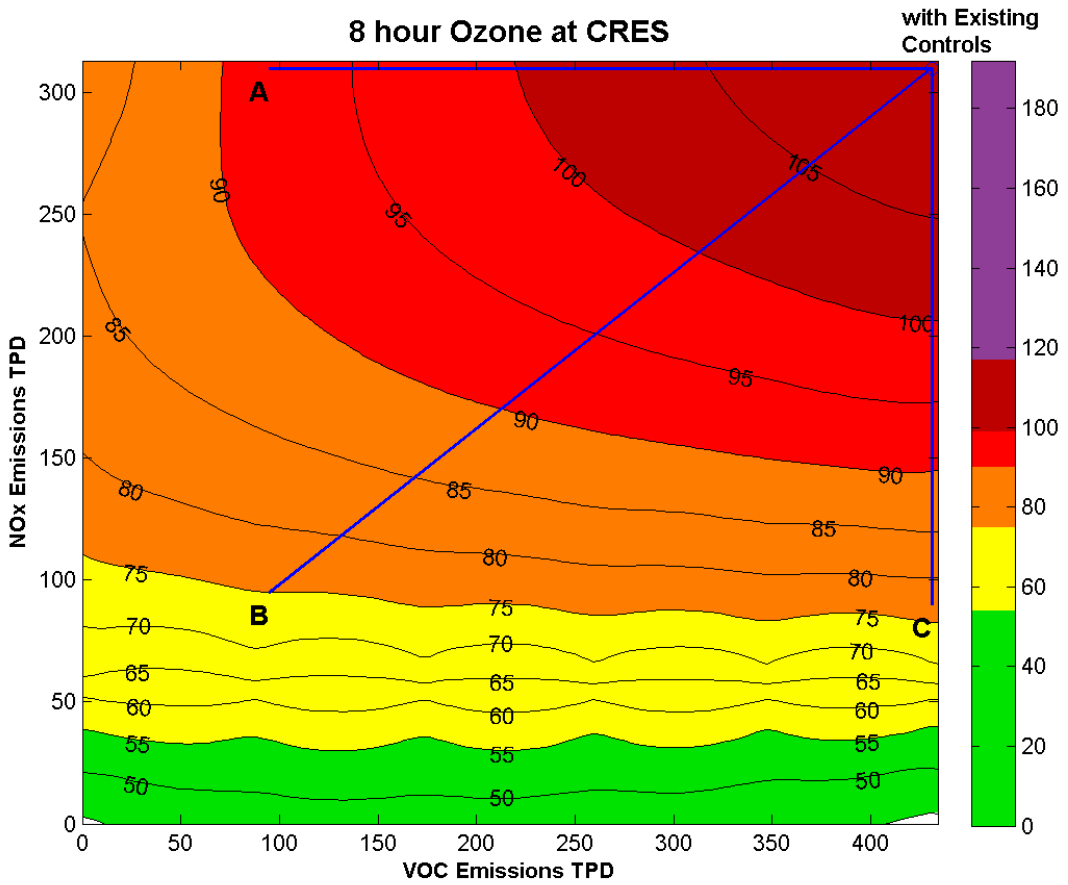

FIGURE 5

Ozone isopleths diagram showing 8-hour ozone isopleth at Crestline. The color shading corresponds to the air quality index (AQI) color code. This analysis is based on the emissions inventory used for the 2012 AQMP using CMAQ version 4.7, and will be updated for the 2016 AQMP analysis.

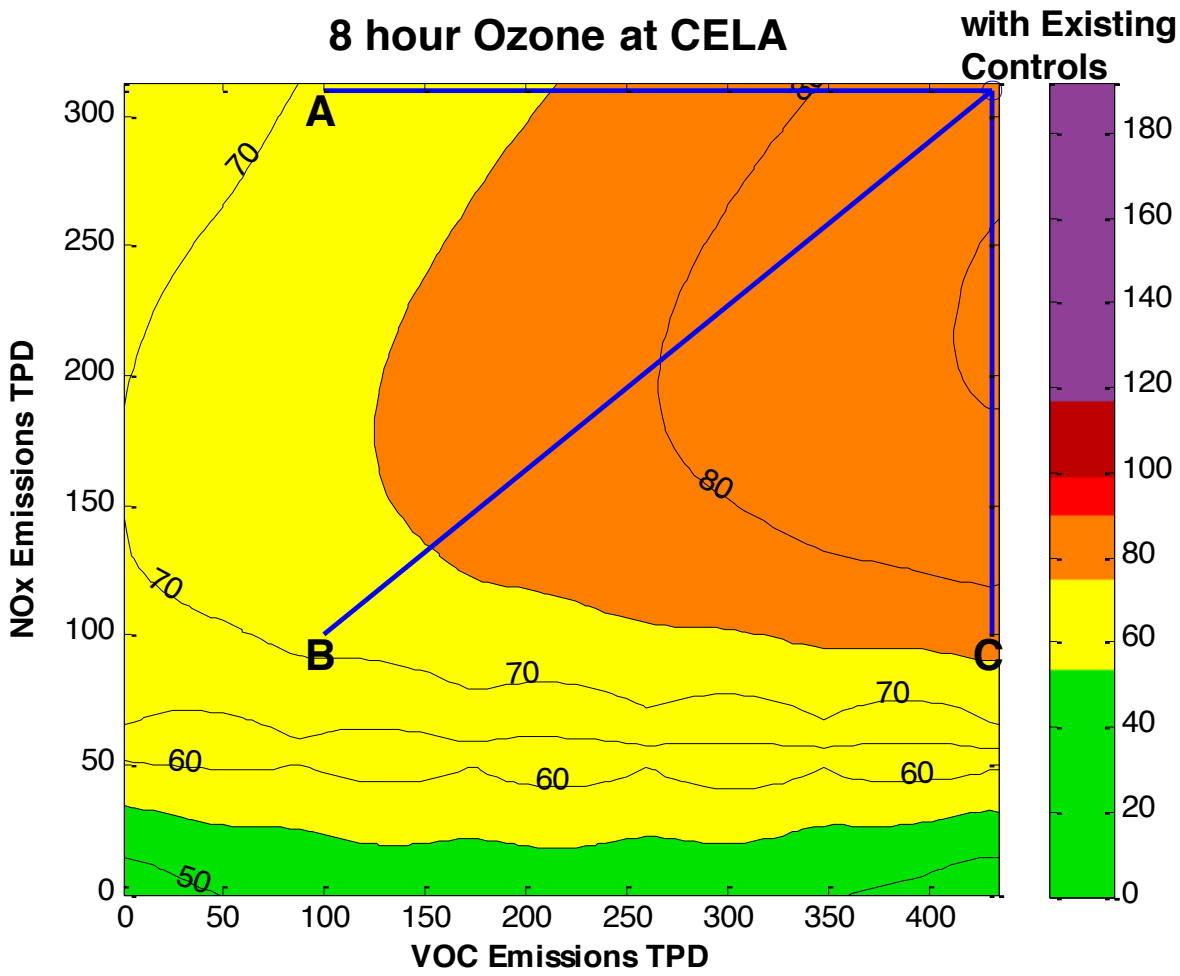

FIGURE 6

Ozone isopleths diagram showing 8-hour ozone isopleth at Central Los Angeles. The color shading corresponds to the air quality index (AQI) color code. This analysis is based on the emissions inventory used for the 2012 AQMP using CMAQ version 4.7, and will be updated for the 2016 AQMP analysis.

It is necessary to understand how ozone concentrations evolve during each of these three control paths at the Crestline and Central L.A. monitoring locations (FIGURE 7).

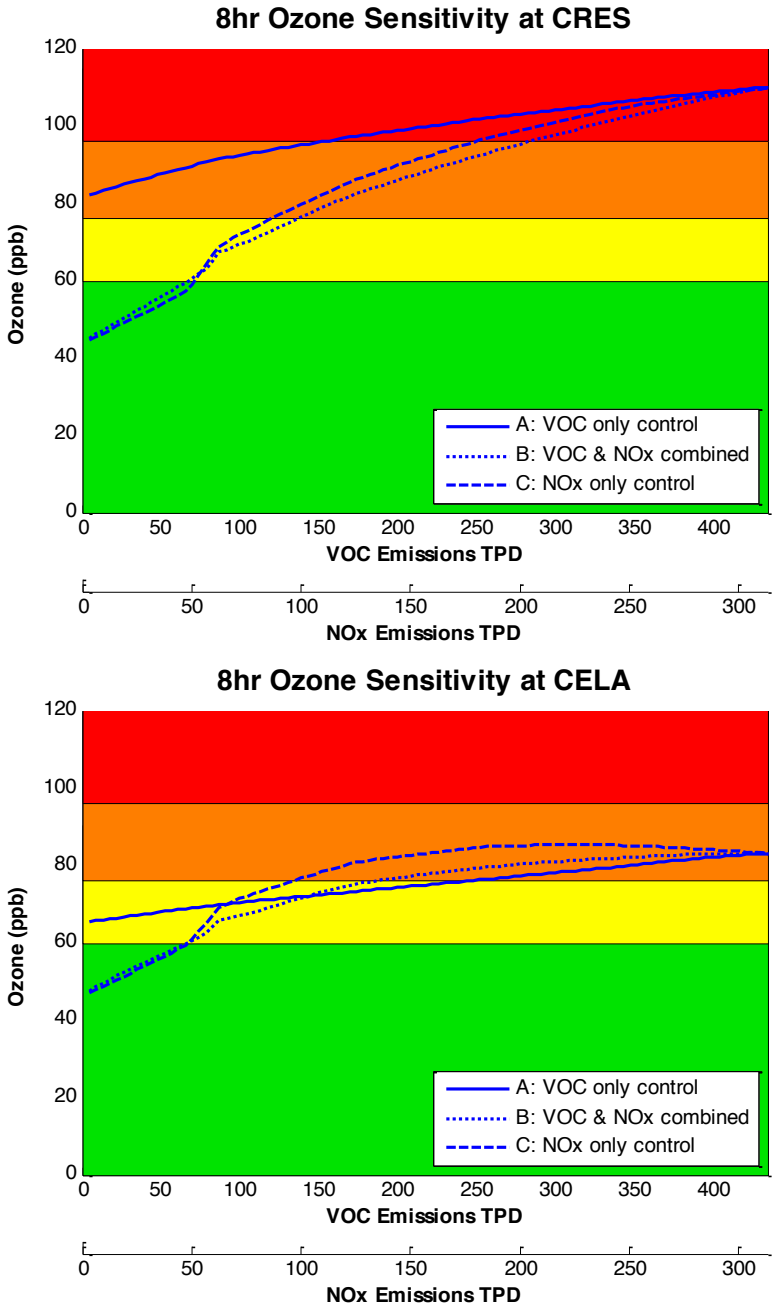

FIGURE 7

Ozone concentrations at Crestline and Central Los Angeles predicted to occur as a result of the specific control strategies (Paths A, B, and C) marked in FIGURE 5 and 6. This analysis is based on the emissions inventory used for the 2012 AQMP using CMAQ version 4.7, and will be updated for the 2016 AQMP analysis.

While the VOC-heavy control strategy (Path A from right to left) reaches attainment at CELA with the minimum amount of emissions reductions, this strategy will not lead to attainment at CRES, and thus the Basin, even with zero anthropogenic VOC emissions. Therefore, additional NOx reductions are required to achieve the

ozone standards for both sites. Not only is the achievable endpoint different in each of the scenarios, the ozone concentrations predicted to occur along the path to attainment are also quite different. Moving from right to left in these figures along Path C, the NOx-heavy control strategy suggests that approximately an additional 200 ton per day (TPD) of NOx reductions beyond current regulations is required to attain the federal ozone standard (Note: Preliminary 2016 AQMP analysis suggests approximately 150 TPD is needed for attainment in 2023 rather than the 200 TPD, but the concepts regarding the emissions reduction scenarios are not expected to change). If NOx is reduced without additional VOC reductions beyond what is projected from current rules, as illustrated in Figure 7, there could be up to a 2 ppb increase in ozone in certain parts of the western Basin surrounding central LA along the path to attainment. FIGURE 8 shows the area that would be above the 1997 ozone standard of 80 ppb and how much the potential ozone exposure would increase. Several million people are estimated to be subject to this inadvertent increase of O3. It should be noted that this increased ozone phenomenon attributable to a NOx only reduction strategy is temporary and exists only along the path to attain the 80 ppb standard.

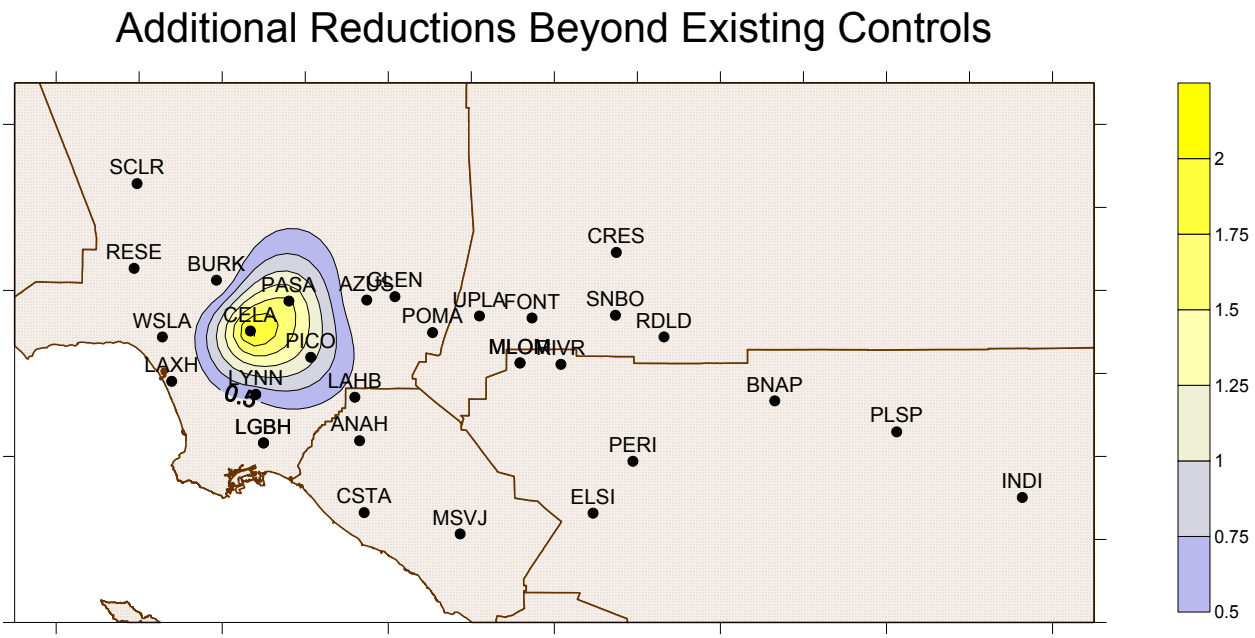

FIGURE 8

Maximum increase in ozone along the path to attainment with a pure NOx control strategy.
This analysis is based on the emissions inventory used for the 2012 AQMP using CMAQ version 4.7, and will be updated for the 2016 AQMP analysis.

Consideration of "Path to Clean Air" Scenarios

There are multiple paths to achieve ozone and PM2.5 standards based on various levels of control among the precursor pollutants. The total required emission reductions, technology readiness, cost-effectiveness, economic impacts, attainment deadlines, and the interaction with other attainment deadlines for other pollutants are all critical considerations in developing an overall multi-pollutant control strategy. Complex

atmospheric chemistry and the non-uniform spatial distribution of both sources and the resulting ambient concentrations require a comprehensive analysis that ensures not only that ozone and PM2.5 meet standards, but also that unintended exposure increases are avoided if at all possible. Furthermore, concurrent reductions of other pollutants such as air toxics and greenhouse gases (GHGs) should also be considered in optimizing a path to meeting multiple standards, objectives, and deadlines.

NOx-Only Control Strategy (Path C)

As demonstrated above, a NOx-only approach can lead to attainment for the Basin. This approach does not require additional VOC controls and consequently has the minimum emission reduction tonnage and has commensurate benefits for PM2.5. Based on preliminary 2016 AQMP analysis, the amount of NOx reduction needed is estimated to be approximately 50-65% of total NOx emissions. While a reduction of this magnitude is challenging and will require significant investments, zero- and near zero- NOx emission reduction technologies currently exist, are in limited use, and can potentially be widely deployed in the next 10 to 20 years. Many of the currently available technologies needed for NOx reductions have air toxics and greenhouse gas co-benefits and vice-versa. Reducing NOx emissions will also mitigate adverse health effects associated with inhalation of locally elevated concentrations of NO_2, another criteria pollutant. However, this NOx-only (path C) approach leads to increased ozone and its exposure in the more densely populated western Basin during interim years to attainment. Consequently, millions of residents in the area would experience worse ozone air quality at levels above federal standards under this strategy.

VOC-Only Control Strategy (Path A)

A VOC-heavy control strategy without additional NOx controls, illustrated by Path A in Figure 6, will not lead to attainment of the ozone standards for the eastern Basin, even in the absence of any man-made VOC emissions. Furthermore, zero- and near-zero-VOC technologies for many of the major VOC-emitting categories (e.g. consumer products) may take many years for reformulation and market penetration, and are thus less mature than current low NOx technologies.

Combined NOx and VOC Control Strategies

A VOC and NOx combined strategy would require greater combined tons of reductions with greater associated compliance costs than a single-pollutant approach. However, a combined strategy would aid in mitigating interim increases in ozone, especially in the highly populated western side of the Basin, while potentially providing additional benefits for PM2.5, toxics, and greenhouse gases. Note that Path B in the above figures is provided only as an example, and a combined control strategy could lie anywhere between Path A and Path C that still reaches the ozone attainment.

For example, Figure 9 illustrates two potential scenarios, Paths D and E, designed to avoid the interim increase of ozone especially in the western Basin. Path D provides just enough additional VOC control (30 - 40 tons per day) to avoid any increases in ozone exposure above the 2023 attainment target of 84.5 ppb (this standard has been revoked, but the 2023 target remains with U.S. EPA's anti-backsliding provisions). Path E requires enough early VOC reductions to avoid any increases in ozone exposure in the western Basin. This

would require approximately 100 tons per day of additional VOC controls, and for those controls to be timed to occur before the bulk of the NOx controls. In any case, the choice of the optimal path should consider multiple policy goals, including public health, cost-effectiveness, and economic impacts. Note that the isopleth analysis provided in this white paper is based on the 2012 AQMP emissions inventories, modeling methods, and air quality measurements. The 2016 AQMP will provide a complete update to this analysis, with potentially different levels of needed reductions under these varying scenarios.

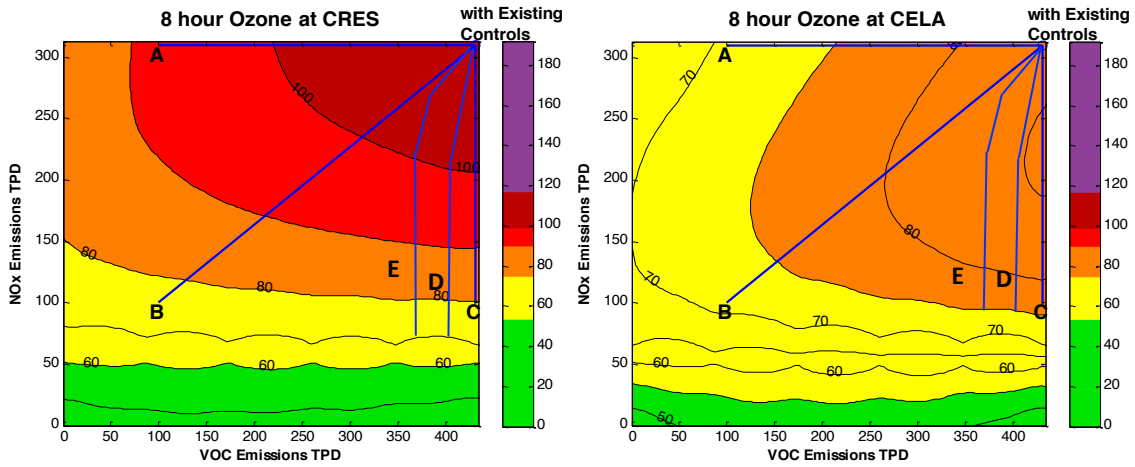

FIGURE 9

Additional emissions reduction options (Paths D and E) mitigating ozone increases in the western Basin (CELA). This analysis is based on the emissions inventory used for the 2012 AQMP using CMAQ version 4.7, and will be updated for the 2016 AQMP analysis.

Recommendations: NOx-Heavy Controls with Strategic and Tiered VOC Reductions

Given the availability of technology, climate and PM2.5 objectives, a desire to minimize control costs, and the lack of a viable path to attainment with VOC reductions only, a NOx-heavy approach with modest VOC controls as shown in Path D is preferred. It continues the path that was taken by both the 2007 and 2012 AQMPs that focuses primarily on NOx reductions, but is augmented with modest VOC reductions to mitigate increased ozone exposures along the path to attainment. According to this 2012 AQMP analysis, approximately 200 tons per day of NOx would be needed by 2023, and mitigating the interim ozone increases would require about 30 to 40 tons per day, or less than 10 percent of total anthropogenic VOC emissions beyond the existing adopted rules and regulations. However, preliminary 2016 AQMP analysis suggests approximately 150 tons per day of NOx reductions are needed by 2023, and will re-analyze the need for and effect of VOC reductions. Reductions in VOC must occur at the earlier stage of control so that the path goes around the 85 ppb contour line illustrated as Path D and E in the Central Los Angeles (CELA) plot of Figure 9. It should be noted that Path D would also result in concurrent PM2.5 reductions throughout the entire air basin, which are needed to address the current PM2.5 annual standard of 12 $\mu g/m^3$.

Therefore, a control strategy that continues to focus on NOx reductions, with additional strategic and cost-effective VOC reductions, is the most desirable way to minimize the general public's exposure to unhealthy ozone pollution not only in the target attainment year, but also during the course of the control effort. The next section discusses a prioritized strategy to achieve cost-effective VOC reductions that maximizes co-benefits and emphasizes non-regulatory approaches.

Note that this analysis is based on the attainment demonstration used in the 2012 AQMP. A new analysis with updated emissions inventory, meteorological parameterizations and photochemical reaction mechanisms will be conducted during development of the 2016 AQMP. The general findings of the control strategies outlined above are expected to be similar, but the amount of reductions needed to attain the standard will be revised based on the most updated science and U.S. EPA attainment guidance (U.S. EPA 2014).

Tiered Approach to VOC Reductions

Based on the above analysis of the overall path to attainment and the role VOCs play in the ozone control program, control strategies continue to focus on significant NOx reductions but include meaningful VOC reductions where appropriate. In order of priority, the following potential strategy considerations are designed to achieve VOC reductions in a cost-effective and targeted fashion considering the co-benefits from and to other air quality objectives:

1. *Maximize co-benefits from NOx, GHG or air toxics controls that produce concurrent VOC reductions*

   Certain zero- or near-zero NOx technologies would also lead to VOC reductions. Given the continued NOx-heavy strategy, policies should promote technologies with these additional VOC co-benefits. For example, electric and hydrogen fuel cell vehicles, efficiency measures, or vehicle miles traveled (VMT) reductions produce both NOx and VOC reductions; many of these strategies also avoid evaporative losses associated with traditional fuels like gasoline. Similarly, control technologies for GHGs and air toxics may also produce concurrent VOC reductions. The 2016 AQMP will aim to better integrate and quantify these VOC reductions into the attainment plan.

2. *Promote pollution prevention at the source with associated cost savings*

   Reducing waste at the source is an efficient and effective way to reduce emissions. This strategy could involve the implementation of more robust leak detection and repair (LDAR) programs, including Smart LDAR using advanced infrared or optical technologies. This approach can lead to cost savings as less product is lost through fugitive emissions. In other cases, this approach could reduce the use of VOC-containing products and/or the reliance on after-treatment control technology. This also can lead to cost savings. Examples of this are incentives and programs promoting the use of higher transfer efficiency spray painting equipment.

3. *Incentivize super-compliant zero- and near-zero VOC materials, especially during peak ozone season*

   Super-compliant zero- and near-zero VOC materials eliminate or drastically reduce emissions during the use of these products. There are several product categories where these materials perform as well as traditional products and are widely available in the market. Manufacturers of super-compliant zero- and near-zero VOC coatings are encouraged to develop the material to be effective and durable. Incentives to promote the use of super-compliant products containing no or little VOCs during ozone season could reduce ozone concentrations when exceedances are typically experienced.

4. *Maximize reductions from existing regulations via enhanced enforcement actions, removal of potential regulatory loopholes, and expanded reporting programs*

   Enhanced enforcement and the tightening of regulatory exemptions that may be used as loopholes in lieu of compliant technologies can lead to reduced emissions. Additionally, recent sales and emissions reporting programs have led to increased understanding of the VOC inventory, incentivized clean technology through fee structures, and better-focused future enforcement and regulatory actions. These enhancements not only ensure that the reductions assumed in the AQMP are actually occurring, but also allow the plan to capture market trends and compliance margins that go beyond the regulatory requirements.

5. *Prioritize emission reductions of the VOC species that are most reactive for ozone and/or PM2.5 formation and that produce concurrent air toxics or GHG benefits*

   The California Air Resources Board has an active reactivity program to investigate the scientific and policy implications of reactivity-based regulations [3]. Reducing emissions of the most reactive species, considering ozone and PM2.5 formation along with enforceability, toxicity, and climate impacts, may be an efficient method to reduce ambient ozone and PM2.5 concentrations, achieve multiple environmental and health benefits, while minimizing market disruptions. For example, for VOC controls that are equally cost-effective in terms of cost per unit of emissions reduced, controls for higher reactivity VOCs would be more cost-effective in terms of costs per unit of ozone reduced.

6. *Avoid toxicity trade-offs from exempt VOC replacements*

   In recent years more and more manufacturers are formulating their compliant products using exempt VOCs, which are VOCs that do not contribute significantly to ozone formation. However, sometimes these compounds may have or be suspected to have adverse health impacts. Their associated potential toxic risks, in comparison with existing products, are a complex issue in terms of how they are being used by workers or the general public and associated work practices to reduce exposure. In some cases, health impacts may involve different health end points (acute vs. chronic or cancer risks) than existing formulations. SCAQMD staff held a one-day technical symposium on this issue to solicit inputs from experts in the field. Emerging from this and other discussions, is a policy debate as to whether we

should treat new chemicals as "innocent until proven guilty" (i.e., not toxic until a risk factor is formally assigned by a health agency). In light of the amount of VOC reductions needed for attainment and other available VOC control opportunities, a precautionary approach is recommended to avoid particular VOC reductions that could potentially lead to the increased use of chemicals that are known or suspected to be toxic until it can be demonstrated that they would not create more toxic risks for workers or the public than the compounds they are replacing.

7. *Further evaluation of the practicality and effectiveness for time and place controls*

   Most ozone exceedances occur during the months of May through September (the "ozone season") when higher ambient temperatures and stronger solar radiation intensities accelerate ozone formation rates. In addition, during the ozone season, higher temperatures increase the volatility of organic compounds, leading to accelerated evaporation and larger emissions of precursor compounds. In contrast, PM2.5 concentrations are typically highest during the winter months when stagnant weather and temperature inversions trap emissions close to the ground. The implications of controlling ozone and PM2.5 sources differently based on location and season can be evaluated further through modeling exercises.

8. *Conduct further studies related to VOCs*

   Over the years, knowledge of the VOC emissions inventory, speciation profiles, and reactivity has improved significantly. Several topics should be further investigated to build a stronger scientific basis for future VOC control programs. These include optical remote sensing technologies that allow for the detection of emissions in locations where traditional monitoring techniques are not practical. Such fence-line systems could enhance the accuracy of emissions inventories, provide an alarm system in the case of process disruptions, and offer opportunities for real-time feedback for process and emissions control to the facility operator. Furthermore, ongoing and future studies of emissions, evaporation rates, ambient concentrations, ozone formation, and PM2.5 formation from SVOCs, IVOCs, and LVP-VOCs will help determine if controlling these compounds could assist the attainment strategies for ozone and PM2.5.

Conclusions

While air quality has improved considerably in the SoCAB over the past few decades, further emission reductions must be made to attain the federal standards for ozone and PM2.5. The analysis herein indicates that a NOx-heavy strategy accompanied by more modest VOC reductions will help to avoid temporary increases in ozone concentrations in the western side of the Basin. This finding reaffirms the previous NOx-heavy State Implementation Plan (SIP) strategies to meet both PM2.5 and ozone standards, but recognizes that VOC reductions can be given a lower priority. To this end, a strategic VOC control program is recommended for the 2016 AQMP to first maximize co-benefits of NOx, GHG, and air toxic controls, followed by controls that could create a win-win, "business case" for the affected entities, incentives for super-compliant products, while ensuring and capturing benefits from implementation of existing rules. When additional VOC controls are still needed, it is recommended to prioritize controls that will produce co-benefits for air toxics and GHGs, with a focus on VOC species that are most reactive in ozone and/or PM2.5 formation.

References

1. E.P.A., U.S., *National Ambient Air Quality Standards for Ozone: A Proposed Rule by the Environmental Protection Agency*. 79 FR 75233. 2014.
2. Gentner, D.R., et al., *Chemical Composition of Gas-Phase Organic Carbon Emissions from Motor Vehicles and Implications for Ozone Production.* Environmental Science & Technology, 2013. **47**(20): p. 11837-11848.
3. Chen, J. and D. Luo, *Ozone formation potentials of organic compounds from different emission sources in the South Coast Air Basin of California.* Atmospheric Environment, 2012. **55**(0): p. 448-455.

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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 35

Climate Action Resource Guide

For Local Governments

This page contains tools and resources for conducting a greenhouse gas (GHG) inventory and developing a climate action related plan. Climate action planning is an iterative process that can be structured differently to achieve a variety of outcomes. For simplicity, the toolkit is framed around six steps, excluding environmental review. The following information provides links to relevant resources pertaining to each of the steps and is intended to support local governments as they navigate the climate action planning process. Please note: When local governments are developing a climate action plan or general plan with the intent of mitigating community-wide emissions or accomplishing CEQA streamlining, the resources on this webpage are intended to be used in coordination with CEQA Guidelines Section 15183.5(b) and the General Plan Guidelines.*

Getting Started

Before starting the climate action planning process it may be useful to outline your planning document. The Statewide Energy Efficiency Collaborative (SEEC) provides local governments with a detailed Climate Action Plan Template (free login required for all SEEC resources) including a sample baseline inventory spreadsheet. Over 55% of California local governments have already taken initiative on creating a climate action focused plan. To see who else is participating and to see examples of plans, check out the Office of Planning and Research's (OPR) database of California jurisdictions addressing climate change.

ClearPath Tools Suite

The International Council for Local Environmental Initiatives (ICLEI) has developed an interactive web-platform that provides local governments with assistive climate action planning tools. ClearPath provides support for both municipal and community planning (see definitions of these under #1 below). While ClearPath does not create or replace a climate action plan, it can be used for most if not all of the technical calculations necessary for a plan. California local governments can register for free here. For local governments looking to perform their own calculations for development of a comprehensive plan, see the resources below.

*For additional information regarding how climate change should be addressed in general plans or climate action plans with the intent of mitigating community-wide emissions or accomplishing CEQA streamlining please contact Michael McCormick at the Governor's Office of Planning and Research (OPR) at 916-323-9912 or email at michael.mccormick@opr.ca.gov. For other information related to OPR please contact the State Clearinghouse at (916) 445-0613 or state.clearinghouse@opr.ca.gov.

#1 GHG Emissions Inventory

Establishing a baseline inventory of jurisdiction-wide greenhouse gas (GHG) emissions is the first step in climate action planning. This inventory is chosen for a select year, typically the most recent year in which sufficient data is available. This inventory allows local governments to quantify the GHG emissions they produce, identify major sources of emissions, and serve as a static reference to compare future emissions to. The resources listed below provide the methodology necessary for conducting a GHG baseline inventory at both the municipal and community scale. Resources for verifying and reporting these inventories are also included in this section.

Municipal Inventory Scope

Municipal inventories include all emissions associated with local government services and municipal operations which typically include:

- Municipal buildings
- Streetlights and traffic signals
- Water delivery facilities
- Port facilities
- Airport facilities
- Municipal vehicle fleet
- Transit fleet
- Power generation facilities
- Municipal solid waste processing
- Municipal wastewater processing
- Other process and fugitive emissions

The following resources provide a standardized set of guidelines and calculation methodologies for local governments to quantify GHG emission inventories from municipal operations.

- ClearPath inventory module user-guide (login required)
- Local Government Operations Protocol (LGOP)
- Practical guide to conducting a municipal GHG inventory

Community Inventory Scope

The community inventory includes all emissions within the geographic area of a local government's jurisdiction that are not included in the municipal inventory.

- Residential and commercial building energy consumption
- Transportation and mobile sources
- Agriculture operations
- Solid waste disposal operation and processing
- Wastewater treatment and processing

The following resources provide a standardized set of guidelines and calculation methodologies for local governments to quantify GHG emission inventories for a community-wide scale.

- SEEC Excel tool for defining scope of community emissions
- ClearPath inventory module user-guide (login required)

- ICLEI US Community GHG Protocols
- Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)
- ICLEI Recycling and Composting GHG Protocols

Third-Party Inventory Verification

Local governments are recommended to have their inventories verified to ensure calculation accuracy. The following organizations provide third-party verification for both community and municipal inventories.

- Climate Registry Information System (CRIS)

GHG Inventory Reporting Registries

Reporting your emissions provides many benefits including:

1. Transparency and accountability
2. Recognition as a climate leader
3. Connection with other cities around the world and GHG reduction strategy sharing networks

The following registries provide a global network for reporting and sharing GHG emission inventories.

- Carbonn Climate Registry – Free
- Climate Registry Information System (CRIS) – Part of paid membership package that includes third-party verification

**For tools that can be used to estimate emissions, please visit the Emission Calculators section of this document.*

#2 Target Adoption

After conducting a baseline GHG inventory, local governments are encouraged to identify emission reduction goals and a timeline for meeting these goals. Information on recommended targets is listed in this section.

2030 and 2050 Targets

Local governments are encouraged to align their jurisdiction-wide reduction targets with statewide goals. California's Senate Bill (SB) 32 mandates a statewide GHG emissions reduction of 40% below 1990 levels by 2030. Meeting this target will put California on track for achieving the 2050 target of reducing statewide GHG emissions to 80% below 1990 levels. To achieve these goals, ARB recommends local governments adopt a community-wide goal of reducing GHG emissions to 6 $MTCO_2e$ per capita by 2030 and 2 $MTCO_2e$ per capita by 2050. Another option is setting a mass reduction target for your local government's service population, whichever is preferable.

For more information please visit ARB's AB32 scoping plan webpage and SEEC's quick start guide on setting a GHG reduction target.

#3 Emissions Forecasting

Business-as-usual (BAU) forecasts use assumptions regarding trends and policies to project what annual GHG emissions will likely be in the future if no additional actions are performed. These projections allow local governments to quantify the GHG emissions reductions necessary for meeting adopted targets.

Due to the inherently uncertain nature of forecasting, local governments are encouraged to perform multiple forecasts for a range of potential scenarios. This will allow local governments to look back to their forecasts in coming years to assess which scenario is most realistic, and adjust actions if necessary. The ClearPath tools suite includes a comprehensive forecasting module that can be used to project various growth rates and account for regulatory standards.

Local governments looking to perform their own calculations can use completed climate action plans for guidance such as San Diego County's forecast. Historical data inputs are typically necessary for most calculation methodologies. Listed below are suggested, sector specific data sources for projecting the various components included in a BAU forecast.

Population Growth

Population growth estimates can be calculated using several datasets such as:

- Historical city and county populations provided by the U.S. Census Bureau.
- County specific population projections are provided by the California Department of Finance.
- Metropolitan planning organizations collect data and make projections for number of households and employment.

Electricity and Natural Gas Emission Factors

The carbon intensity of electricity generation depends on your electricity provider and projections are affected by ongoing state legislation. The Clean Energy and Pollution Reduction Act (SB350) currently require electricity providers, investor-owned utilities, and community choice aggregators to increase their procurement of renewable generated electricity to 50% by 2030. Thus the carbon intensity is expected to change relative to the target year.

- Local governments should look to their electricity providers for historical carbon intensity values.
- The ICLEI ClearPath forecasting assistant can be used to project electricity emission factors under RPS.

Electricity and Natural Gas Consumption Growth Rate

Statewide projected electricity and natural gas consumption growth rates for both commercial and residential sectors can be found here:

- Forecasted California Energy Demand 2016-2026 provided by the California Energy Commission.

Transportation Related

Transportation projections are best calculated using emission modeling tools such as the 2014 Emission Factors Model (EMFAC) web application. Please visit the Emission Calculators section of this document for more information.

#4 Strategy Selection

The next step in climate action planning is to determine GHG emissions reduction pathways for meeting the adopted targets. A broad range of strategies are available for reducing GHG emissions. Local governments are recommended to carefully go through a list of strategies to determine which will be the most practical and effective for their region.

When selecting reductions strategies it is important to consider the following questions:

1. Is the strategy technically feasible and can it realistically be implemented?
2. Does the strategy offer potential co-benefits (e.g. air quality, job opportunities, etc.)?
3. Could the success of this strategy be tracked (e.g. data availability)?

Build a database

Before selecting strategies local governments may want to create a database of all possible options in order to select the most applicable and effective strategies.

For a list of GHG reduction strategies visit:

- California Air Pollution Control Officers Association report: Quantifying GHG Mitigation Measures
- California Energy Commission's Energy Aware Planning Guide
- Institute for Local Governments' Sustainable Practices Framework
- ICLEI's ClearPath library of reduction measures

Community Engagement

Promoting community participation in climate action planning is essential for understanding the public's concern of certain strategies and for assisting the community understands the purpose and need for reducing GHG emissions. Outreach events can give the community a chance to comment on proposed strategies and suggest their own creative measures.

- EPA's eight-step guide to community engagement: https://www.epa.gov/statelocalclimate/engage-community

**CoolCalifornia is currently in the process of developing a tool that assists local governments search for and compare GHG reduction strategies. Stay tuned!*

#5 Funding and Implementation

Staying on top of funding opportunities that can be used to supplement or cover proposed strategies is critical for putting proposed strategies into action. In addition to funding, reviewing best practice guidelines or case studies from other California local government can assist policymakers and planners maximize strategy effectiveness.

Find Funding

The Funding Wizard aggregates sustainable project funding opportunities from all over the web. Forms of funding include grants, loans, rebates, PACE financing, tax incentives, and more. Users can filter funding by project type, funding entity, and applicant type including funding for households and businesses too!

Implementation Guidelines & Best Practices

The following links provide guidelines and best practice case studies for many of the overarching GHG reduction strategy categories found through step #4. These resources can generally include specific on-the-ground steps for policymakers or planners to follow for implementation of both municipal and community focused strategies. **Resources in each category are sorted by date released or last updated.*

- **Complete Streets & Bike/Ped Development**
  - The best complete streets policies of 2015 - SGA/2015
  - Urban Bikeway Design Guide - NACTO/2014
  - Urban Street Design Guide - NACTO/2013
  - Guide to making neighborhoods more walkable and bikeable - ChangeLab/2013

- **Electric Vehicles**
  - The Logistics of Fleet EV Charging Station Deployment - FleetCarma/2017
  - 3 Ways Electric Vehicles Reduce Fleet Operating Costs - FleetCarma/2016
  - Plug-In Electric Vehicle Handbook - DOE/2012

- **Green Building Design**
  - Whole Building Design Guide - NIBS/2017
  - Sustainable Design and Green Building Toolkit for Local Governments - EPA/2013
  - Guide for advancing local green building policies - USGBC/2011
  - High performance school design best practices manual - CHPS/2006

- **Green Business Promotion**
  - Clearing house for financial incentives and support for small businesses - CBIG/2017
  - Resources for environmental permitting and green business incentives - Go-Biz/2017
  - Bay Area Green Business Program Policy Guide - ABAG/2012

- **Mixed-use and Infill Development**
  - Smart growth case studies - EPA/2015
  - Infill development policy roadmap - UCB/2014
  - Guidebook for estimating residential development capacity - LILP,MDP,UM/2005

- **Open Space and Agricultural Land Preservation**
  - Offsetting carbon emissions through open space best practices - ILG/2013

- **Renewable Energy**
  - Solar permitting and financing information - OPR/2016
  - Solar Powering Your Community: A Guide for Local Governments - DOE/2011

- **Residential and Commercial Building Energy Efficiency**
  - Home weatherization guide - ICLEI/2017
  - Best Practice Guidelines for Residential PACE Financing Programs - DOE/2016
  - Local Climate and Energy Program Model Design Guide - EPA/2015
  - Energy Aware Guide - CEC/2011

- **Transit Oriented Development**
  - Transit Street Design Guide - NACTO/2017
  - Mapping tool for estimating job access to transit - EPA/2016
  - Smart Mobility Plan - Caltrans/2010

- **Transportation Demand Management**
  - Parking Management Strategies Guide - VTPI/2017
  - Ride Sharing Options Toolkit - DOT/2010
  - Smart growth parking policy best practices - MTC/2007

- **Urban Forestry**
  - Urban forestry toolkit - ICLEI/2006
  - Guidelines for Developing and Evaluating Tree Ordinances - ISA/2001
  - Ten-Year Urban Forestry Action Plan - USFS&USDA/2015

- **Waste Diversion**
  - Comprehensive list of recycled building material suppliers - EPA/2017
  - Sample environmentally preferable procurement policies - CalRecycle/2015
  - International Landfill gas to energy projects guide- EPA/2012
  - Environmentally Preferable Purchasing Best Practices Manual - DGS/2005

- **Water Reuse**
  - Best Practices for Developing Indirect Potable Reuse Projects - CWB/2014

#6 Monitoring and Tracking

The key to long-term success in climate action planning is to regularly monitor and track the progress of GHG emissions reduction strategies. Regularly conducting new emission inventories (step#1) is the best method to establish whether a local government is on track for meeting planned reduction targets (step #2). However, it is also important to monitor both the level of implementation and efficacy of the individual reduction strategies selected.

The first step to tracking individual strategies is to determine strategy-specific metrics that reflect GHG reduction progress. When determining the best tracking metric for each strategy it is important to consider data availability since this is most often a limiting factor. The following resources provide recommended tracking metrics for common GHG reduction strategies:

- CAPCOA report: Quantifying GHG Mitigation Measures
- ICLEI's ClearPath software monitoring module

Secondly local governments are encouraged to create a repository for quantitatively tracking strategy progress and assign staff to regularly update this repository. Tracking can be performed in a simple Excel spreadsheet or using one of the user-friendly monitoring tools that have been created to assist local governments:

- Track progress of the reduction strategies recommend by ICLEI using ClearPath

- Track energy usage in buildings using the ENERGY STAR Portfolio Manager

Emission Calculators and Modeling Tools

Many useful emission estimation tools are provided for free from various state agencies and organizations. These tools can be used for conducting baseline inventories, forecasting future scenarios, and monitoring ongoing GHG reductions. Listed below includes tools for quantifying GHG emissions specific to various sources.

Web Databases

- On-road vehicle population, activity, and emissions by region: EMFAC 2014 Web Database
- Off-road vehicle emission factors: Off-Road Certification Database
- Statewide electricity consumption by entity: CEC Electricity Consumption Web Database

Calculators

- GHG emissions reductions from green buildings: GreenPoint Rated Climate Calculator
- GHG emissions from household and business operations: Carbon Footprint Calculator

Modeling Programs

- Parcel to city level urban forestry impacts from carbon sequestration and tree shading: i-Tree
- GHG emissions associated with building construction and operations of various land use projects: CalEEMod
- GHG emissions from solid waste management practices: Waste Reduction Model (WARM)

Mapping Tools

- EPA tools: Access to Jobs and Workers via Transit, National Walkability Index, and Smart Location
- Cal-Adapt: Modeling the effects of climate change on California lands
- CARB - Facility level emissions reported under the Cap-and-Trade Program
- Citilabs - Community accessibility and walkability planning tools - Paid membership required

Additional Resources

- State of local climate action in California – ICLEI 2016 Report

- Facility level GHG reporting guidelines – ARB Regulation Report

- Guidelines for corporations looking to conduct a GHG inventory – Corporate Standard

- International network of mayors, city representatives, and committees for climate action – C40 Cities

- Local government guide to the Paris climate agreements – ICLEI 2016 Report

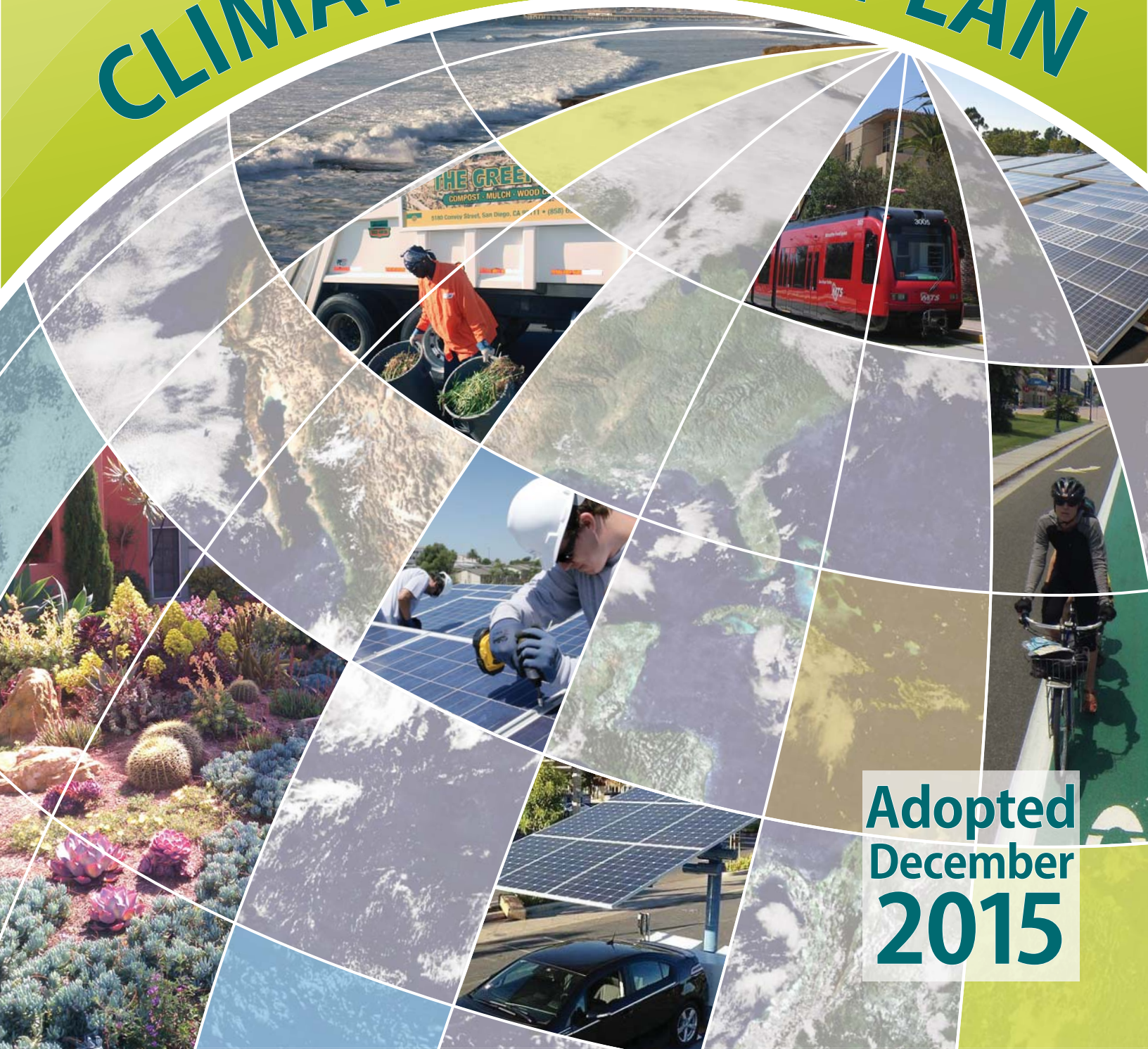
The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 36

Mayor Kevin L. Faulconer

CITY OF SAN DIEGO

CLIMATE ACTION PLAN



Adopted
December
2015

CITY OF SAN DIEGO
CLIMATE ACTION PLAN

Prepared by:
The City of San Diego

In consultation with**:**

Krout Associates
Sustainability Consulting

EPIC
ENERGY POLICY INITIATIVES CENTER
UNIVERSITY OF SAN DIEGO SCHOOL OF LAW

KEVIN L. FAULCONER

MAYOR

Today, we are faced with an issue that affects us all. Our city's responsibility is to ensure a clean, sustainable San Diego for generations to come. Through this Climate Action Plan, San Diegans from different backgrounds are coming together to proactively address environmental concerns, strengthen our economy and improve our quality of life.

This Climate Action Plan sets forth common-sense strategies to achieve attainable greenhouse gas reduction targets. Apart from reducing greenhouse gases, this plan will:

- Create green jobs through incentive-based policies, such as the manufacturing and installation of solar panels;
- Improve public health by removing harmful pollutants from our air and improve water quality;
- Increase local control over our future by reducing dependence on imported water and energy;
- Help homebuyers educate themselves on the energy and water usage of a building before purchasing, without adding significant delay or cost to the home-buying process;
- Enhance quality of life by supporting active transportation, planting trees and reducing landfill waste; and
- Save taxpayers' money by decreasing municipal water, waste and energy usage in city-owned buildings.

San Diego is a leader in innovation and sustainability. By striking a sensible balance between protecting our environment and growing our economy, San Diego can support clean technology, renewable energy and economic growth.

We have an opportunity to improve the lives of every San Diegan in all of our neighborhoods. This plan reflects our duty to preserve our children's future and hand down a San Diego that is cleaner than it was when we received it. San Diego's next chapter starts here.

Sincerely,

Kevin L. Faulconer
Mayor, City of San Diego

ACKNOWLEDGEMENTS

Mayor Kevin Faulconer

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District 3, Todd Gloria
District 4, Myrtle Cole
District 5, Mark Kersey
District 6, Chris Cate
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Adopted by the City Council on December 15, 2015 by Resolution Number: R-2016-309
Amended by the City Council on July 12, 2016 by Resolution Number R-2016-762

Ten Fifty B Street - Lobby

EXECUTIVE SUMMARY

Civita - Mission Valley

Former Governor Arnold Schwarzenegger's Executive Order S-3-05 established the 2050 statewide greenhouse gas (GHG) reduction target of 80 percent below 1990 levels. Governor Schwarzenegger also signed Assembly Bill 32 (AB 32) in 2006 which set a statewide reduction target of 1990 levels by 2020 and created a comprehensive, multi-year program to reduce GHG emissions in California. In 2015, Governor Jerry Brown issued Executive Order B-30-15 establishing an interim statewide greenhouse gas emission reduction target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing greenhouse gas emissions to 80 percent below 1990 levels by 2050.

Pursuant to AB 32, the California Air Resources Board (CARB) adopted the Climate Change Scoping Plan with a recommendation for local governments to adopt a goal for municipal operations and community-wide emission reduction by approximately 15 percent from current levels by 2020. In accordance with this recommendation, the City's Climate Action Plan (CAP) includes a municipal operations and community-wide GHG emissions baseline calculation from 2010 and sets a target to achieve a 15 percent reduction from the baseline by 2020.

In its 2014 update to the Climate Change Scoping Plan, CARB recommended local governments chart a reduction trajectory that is consistent with, or exceeds, the trajectory created by statewide goals, such as the GHG reduction target set in Executive Order S-3-05. To remain consistent in its GHG reduction calculation approach, the City calculated its 2050 GHG emission reductions at 80 percent below the 2010 baseline and set a 2035 target based upon the trajectory for meeting the City's 2050 reductions. Therefore, the 2035 target should be considered an "interim" target towards achieving the City's 2050 emission reductions target. As shown in Figure 2.2, if the measures in this CAP are implemented, the City would be on the trajectory for meeting its 2050 reduction trajectory target.

To address the state target set by Executive Order B-30-15, CARB is updating its Climate Change Scoping Plan to provide a framework for achieving the 2030 target. If CARB's updated Scoping Plan includes a recommendation for a percentage reduction for local governments, the City will amend its 2030 target accordingly. The City recognizes it may become necessary to modify the CAP to account for federal and state actions or improvements in technology and efficiency, and will do so through its annual monitoring reports. It is anticipated that an update of the CAP will occur by 2020.

CAP implementation will be dependent upon the future adoption of numerous implementation ordinances, policies, and programs. A cost/benefits analysis will be prepared as each implementation measure is presented to City Council for consideration. Attainment of the reduction targets will require significant City and regional actions, continued im-

San Diego is taking the lead in California to tackle climate change.

plementation of federal and state mandates, and dedicated San Diegans choosing to take individual actions to be a part of the solution.

These actions and associated co-benefits will contribute to the City's future prosperity and quality of life by:

- Furthering San Diego's leadership in clean technology industries, such as renewable energy, information technology, manufacturing, and waste management.
- Advancing the "City of Villages" concept of walkable and pedestrian-friendly neighborhoods with a mixture of uses that revitalize existing neighborhoods while retaining their individual character.
- Promoting active transportation and rapid transit systems to help preserve and improve accessibility for vulnerable groups, including: children, the elderly, people with disabilities, and the economically disadvantaged.
- Fostering programs to create well-paying jobs. Implementation of the CAP will lead to an increased demand for workers in high-growth "green" industries. This will lead to greater opportunities for new and existing workers to flourish in these innovative sectors.
- Building communities that are resilient to climate change through the identification of vulnerabilities and the corresponding implementation of adaptation measures. These measures are intended to protect public health and safety; secure and maintain water supplies and services; protect and maintain urban infrastructure and community services; protect environmental quality; maintain open space, parks, and recreation; support coastal management and protection; promote urban forest management and local food production; improve building and occupant readiness; and enhance community education, knowledge and collaboration.

The City has identified **FIVE BOLD STRATEGIES** to reduce GHG emissions to achieve the 2020 and 2035 targets:

1. ENERGY & WATER EFFICIENT BUILDINGS
2. CLEAN & RENEWABLE ENERGY
3. BICYCLING, WALKING, TRANSIT & LAND USE
4. ZERO WASTE (GAS & WASTE MANAGEMENT)
5. CLIMATE RESILIENCY

These viable strategies will leverage the City's existing efforts as well as provide clear direction for meeting the challenges of a changing climate.

The 2015 CAP demonstrates to San Diego businesses and residents that the City acknowledges the existing and potential impacts of a changing climate and is committed to keeping it in the forefront of decision-making. Successful implementation of the CAP will: 1) Prepare for anticipated climate change impacts in the coming decades, 2) Help the State of California achieve its reduction target by contributing the City's fair

share of GHG reductions, and 3) Have a positive impact on the regional economy.

The CAP contains five chapters: Background, Reducing Emissions, Implementation and Monitoring, Social Equity and Job Creation, and Adaptation. Appendices A through E provide additional detail on topics covered within the CAP. A brief summary of each chapter follows:

Chapter 1 - Background: Provides an introduction and purpose for the creation of the CAP. Specifically, the CAP serves as mitigation for the City's adopted General Plan as explained in Chapter 1. The General Plan calls for the City to reduce its carbon footprint through actions including adopting new or amended regulations, programs, and incentives. General Plan Policy CE-A.13 specifically identifies the need for an update of the City's 2005 Climate Protection Action Plan that identifies actions and programs to reduce the GHG emissions of the community-at-large, and City operations. Additionally, with future implementing actions, it is anticipated that the CAP will serve as a "Qualified GHG Reduction Plan" for purposes of tiering under CEQA.

Chapter 2 - Reducing Emissions: Delivers a baseline inventory for 2010; emission forecasts for 2020 and 2035; establishes reduction targets for 2020 and 2035; and identifies federal, state and local measures to reduce emissions that when totaled meet or exceed the 2020 and 2035 targets.

Chapter 3 -Implementation and Monitoring: Details the implementation action and phasing for individual goals. For each of the five strategies, the CAP identifies goals, actions, targets, supporting measures, parties responsible for implementation and estimated GHG reductions for 2020 and 2035. This chapter also illustrates the contents of the Annual Monitoring Report, including the results of the annual GHG inventory, social equity, and jobs monitoring.

The City anticipates that new technologies and innovative programs developed in the future can enhance, or even replace, the strategies and actions currently proposed. This consideration will allow the City to be flexible, yet diligent, in its effort to reduce emissions and prepare for a changing climate.

Chapter 4 - Social Equity and Job Creation: Describes how the impacts of climate change will disproportionately affect disadvantaged communities and how the City can proactively identify them prior to project implementation. This chapter also illustrates how climate plan policies can lead to the creation of well-paying jobs and actions the City of San Diego is taking to promote economic growth.

Chapter 5 - Adaptation: Identifies climate impacts for San Diego, illustrates current climate adaptation efforts throughout the state, and provides a guide to adaptation strategy development.

Encanto

Cortez Hill

CHAPTER 1

BACKGROUND

Balboa Park - Museum of Man

If there is a single word that describes the San Diego region, it is "paradise." And this paradise is our home.

– Our Greater San Diego Vision 2012

When people migrated to San Diego during the transition from the late 19th to the 20th century, they were drawn to a romantic vision of the City – a Spanish Colonial paradise. That vision so enchanted people, it became a reality.

Now, in the 21st century, San Diego is considered one of the finest cities in the world with a high quality of life. Its friendly people, dynamic economy, beautiful setting, and temperate climate have made it a world-class destination. Residents and visitors alike enjoy the magnificent beauty of the region; its wonderful, diverse communities; and strong entrepreneurial spirit.

While the San Diego of today is every bit as beautiful as that vision from the early 1900's, modern life can pose its challenges - yet San Diegans have always seized the opportunity to take them on with a passion. Many of the challenges San Diegans face are local in nature and therefore easier to comprehend and solve. Others, whether regional, national, or even international in nature, are less tangible and require more complex solutions. Dealing with climate change is one of these pressing issues. Often discussed in global terms, the impacts of the changing climate can sometimes seem insurmountable. For San Diego, these challenges present opportunities.

The potential impacts of a changing climate - higher seasonal temperatures, worsening air quality, diminished water supplies, disruption of agricultural cycles - have great consequences not only for the built and natural environment, but also for the community's health and economic vitality. However, since we directly and indirectly influence the emissions of greenhouse gases (GHGs), the major cause of climate change, we are uniquely positioned to respond.

The City will provide leadership with key strategies to reduce emissions, coupled with a focus on building sustainable economic opportunities for our residents and communities, and a commitment to improving the resilience of our communities and our City to potential future impacts of climate change.

The City of San Diego places great importance on proactive planning to reduce or eliminate the long-term risk to people and property within the community from a changing climate. The Climate Action Plan (CAP) helps implement the goals of San Diego's General Plan and provides a pathway toward a better future.

The City of San Diego General Plan (2008) is based on the City of Villages smart growth strategy which directs growth into compact, mixed-use, walkable centers linked by transit. This compact urban form reduces the need to travel and makes alternative modes of transportation easier to use. The CAP will support implementation of the General Plan through support for continued incremental changes to the urban land use form, providing greater transportation choices, and transforming how we produce and use energy. Further, the CAP will complement the General Plan policies to reduce greenhouse gas emissions with quantifiable data and benchmarks for success.

Today, San Diego has the opportunity to take action that will not only help to mitigate the impacts of climate change, but preserve and improve our quality of life. By reducing our energy and fuel consumption we save money, improve the air, and enjoy better public health. By planting trees we create shade on hot days and help to create beautiful, quality neighborhoods. Meeting this challenge at the local level can, and will, dramatically enhance our standard of life and continue to preserve the romantic vision that has charmed San Diegans for the past 150 years.

A Brief History of Climate Change Legislation

California's landmark global climate change legislation, the Global Warming Solutions Act of 2006 (AB 32), established the state's goal of substantially reducing its GHG emissions: to 1990 levels by 2020. Subsequent legislation, namely Senate Bill (SB) 97, adopted in 2007, addresses climate change by requiring lead agencies to analyze GHGs under CEQA. Additionally, the Sustainable Communities and Climate Protection Act of 2008 (SB 375) requires each Metropolitan Planning Organization to prepare a Sustainable Communities Strategy as part of its Regional Transportation Plan that includes land use, transportation, and housing policies to reduce regional GHG emissions.

Based on the 2011 California Air Resources Board's (ARB) Scoping Plan, the City of San Diego's CAP is a proactive step toward addressing the City's GHG emissions. The CAP includes a quantitative inventory of GHG emissions (baseline), a projection of emissions for 2020 and 2035 (business-as-usual scenarios), and City-specific targets to reduce GHGs by 2020 and 2035, helping to achieve statewide 2020 and 2030 targets, and putting the City on the trajectory of meeting its share of the 2050 statewide target.

Drought Tolerant Landscaping

Addressing Climate Adaptation

Some degree of climate change will occur regardless of the City's effort to reduce and mitigate GHG emissions. As a result, the City will need to adapt to these changes within the context of the community's environmental and socioeconomic system. The City of San Diego will develop a stand-alone climate adaptation plan that will integrate, and build upon, the strategies and measures in the CAP.

The CAP will provide a road map for the City to collaborate with communities in assessing vulnerability to future climate change, developing overarching adaptation strategies and implementing measures to enhance resilience. The Climate Adaptation section of this report describes the initial stages of this assessment. However, the work to date provides only an outline of the potential vulnerabilities that the City and its communities may face, and a cataloging of potential response measures.

The City will separately assess fully the specific vulnerabilities that we face, and work with the communities to develop strategies and measures to address these vulnerabilities. The City will conduct this assessment in a manner that is both cost-effective and aligned with the broader tenets of the CAP to reduce our contributions to climate change and create economic opportunities in the process. More information regarding climate adaptation can be found in **Chapter 5 - Adaptation**.

Avenida Del Rio between Fashion Valley Mall and Camino De La Reina in Mission Valley flooded after a heavy rain, 2009

What are the benefits of a Climate Action Plan for San Diego?

Improving Public Health and Air Quality

The US Environmental Protection Agency (EPA) found that GHGs constitute a threat to public health and welfare and that the emissions from motor vehicles cause and contribute to the climate change problem (EPA 2013). The prevalence of asthma is strong indicator of the severity of unhealthy conditions in San Diego communities. According to the American Lung Association State of the Air 2013 Report, the greater San Diego area ranks eleventh nationally among metro areas in ozone pollution and 23rd in short-term particulates (American Lung Association, 2013). Therefore, minimizing GHG emissions from transportation will help improve air quality for these specific populations by reducing other harmful air pollutants, such as carbon monoxide, sulfur dioxide, and particulate matter.

Providing Energy Independence

Smarter building design and construction practices, including passive solar heating and cooling, building orientation, and installing renewable energy systems, will reduce the demand for imported energy. Additionally, generating clean energy locally for our community will help keep dollars here in San Diego.

Spurring Economic Development

Reinvestment in local buildings and infrastructure will provide new opportunities for skilled trades and a variety of professional services as well as increasing San Diego's global competitiveness in the world economy. The methods and tools include public/private partnerships and hands-on training, providing an opportunity for labor and businesses to work together to build a green economy.

Co-benefits of Addressing Climate Change

San Diego, as a community, will benefit from the efforts provided in this CAP. While the actions included in the CAP are generally oriented towards reducing GHG emissions, many of them also have "co-benefits" - the ancillary or additional benefits of the policy - including cost savings, job creation, improved public health and economic opportunities.

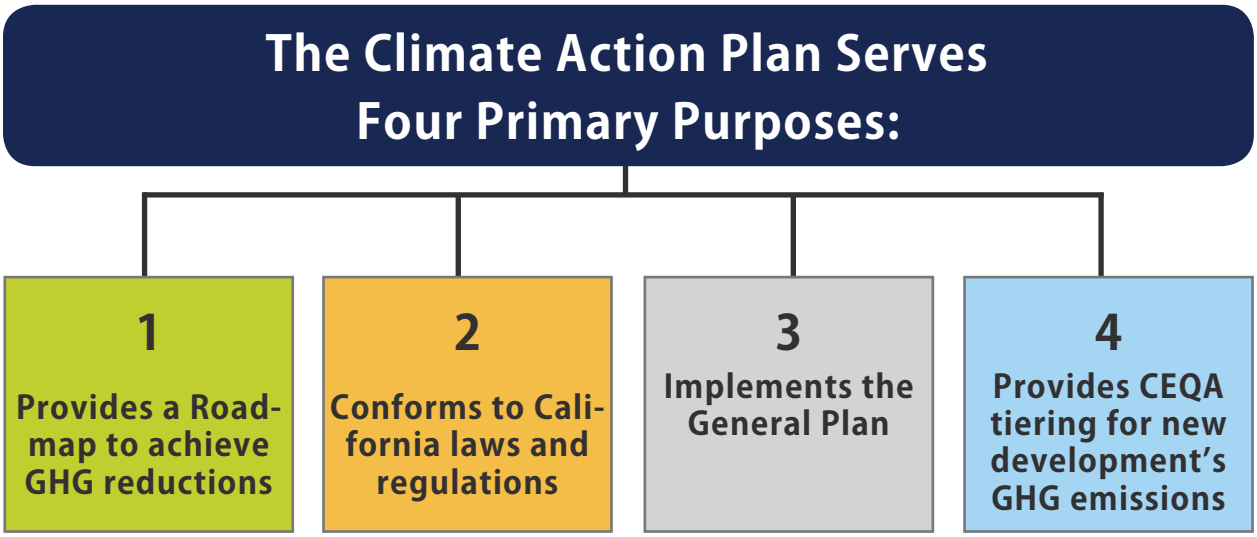
Chollas Creek Trail

For example, strategies in the CAP are intended to increase the energy and water efficiency of buildings and expand alternative transportation choices. In turn, the energy savings increase the capacity for local residents and businesses to purchase other goods and services. If spent locally, this can boost our local and regional economy and help to create jobs.

With an expanded active transportation infrastructure, San Diego citizens and visiting tourists will have options other than driving cars. This transition to walking, bicycling, and public transit will not only reduce GHG emissions, but improve the air quality as a result of fewer vehicle miles traveled and improved traffic congestion.

Sustainability Program Manager

As a companion item to the CAP, the Mayor and City Council established the position of Sustainability Program Manager, as part of the FY15 Budget, to oversee implementation of the CAP and the development of the climate adaptation plan. It is anticipated that the Program Manager will work closely with staff from various City Departments and representatives from the community ranging from businesses and industry associations to environmental groups, and will be asked to provide annual reports to the City Council and oversee future CAP updates.



Connecting the General Plan with the Climate Action Plan

The City's first Climate Protection Action Plan (CPAP) was approved in 2005 and focused on the City's mission to reduce emissions from municipal operations. The CPAP was central to fostering heightened awareness and developing "climate change literacy" within the City and the community.

Similarly, the General Plan (GP), adopted in 2008, is the framework for the City's commitment to long-term conservation, sustainable growth, and resource management. It addresses GHG emission reductions through its City of Villages growth strategy and a wide range of inter-disciplinary policies.

The City's General Plan Program Environmental Impact Report (PEIR) Mitigation Monitoring and Reporting Program (MMRP) specifically discusses the mitigation of climate change on pages 49-50.

General plan policies related to climate change are integrated throughout the document, and summarized in Conservation Element Table CE-1.

Key policies related to the CAP are:

- Policy CE-A.2 to "reduce the City's carbon footprint" and to "develop and adopt new or amended regulations, programs and incentives as appropriate to implement the goals and policies set forth" related to climate change.

- Policy CE-A.13 to "regularly monitor, update, and implement the City's Climate Protection Action Plan, to ensure, at a minimum, compliance with all applicable federal, state, and local laws."

The CAP identifies measures to reduce the City's carbon footprint per Policy CE-A.2 and updates the City's Climate Protection Action Plan per Policy CE-A.13. As such, the CAP mitigates the cumulatively significant global warming impacts of the General Plan and provides a framework for mitigation of future projects.

The California Environmental Quality Act (CEQA): Tiering from the 2015 Climate Action Plan

The CAP will serve as a Qualified GHG Reduction Plan for purposes of tiering under CEQA. The CAP meets the requirements set forth in CEQA Guidelines section 15183.5, whereby a lead agency (e.g. the City of San Diego) may analyze and mitigate the significant effects of GHG emissions at a programmatic level, such as in a general plan, a long range development plan, or a separate plan to reduce GHG emissions. CEQA Guidelines section 15183.5(b) states that a plan for the reduction of greenhouse gas emissions should:

1. Quantify greenhouse gas emissions, both existing and projected over a specified time period, resulting from activities within a defined geographic area;

2. Establish a level, based on substantial evidence, below which the contribution to greenhouse gas emissions from activities covered by the plan would not be cumulatively considerable;

3. Identify and analyze the greenhouse gas emissions resulting from specific actions or categories of actions anticipated within the geographic area;

4. Specify measures or a group of measures, including performance standards, that substantial evidence demonstrates, if implemented on a project-by-project basis, would collectively achieve the specified emissions level;

Barrio Logan

Construction at Balboa Park

5. Establish a mechanism to monitor the plan's progress toward achieving the level and to require amendment if the plan is not achieving specified levels; and

6. Be adopted in a public process following environmental review.

The CAP Consistency Checklist (Appendix C) will provide a streamlined review process for the GHG emissions analysis of proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to CEQA.

Juniper-Front Community Garden

CHAPTER 2

REDUCING EMISSIONS

Green bike lane along Harbor Blvd.

A GHG inventory is a collection of information about energy and emissions related activities within a specific scope or boundary. The GHG emissions inventory evaluated activities within the City of San Diego for major economic sectors, including residential buildings, nonresidential, transportation, water, solid waste, and municipal operations. The GHG emissions quantified in each of these sectors are associated with a variety of sources, including direct combustion of fossil fuels, purchased electricity, transportation (gasoline), solid waste, potable water, and materials. These sources are described in greater detail in **Appendix A.**

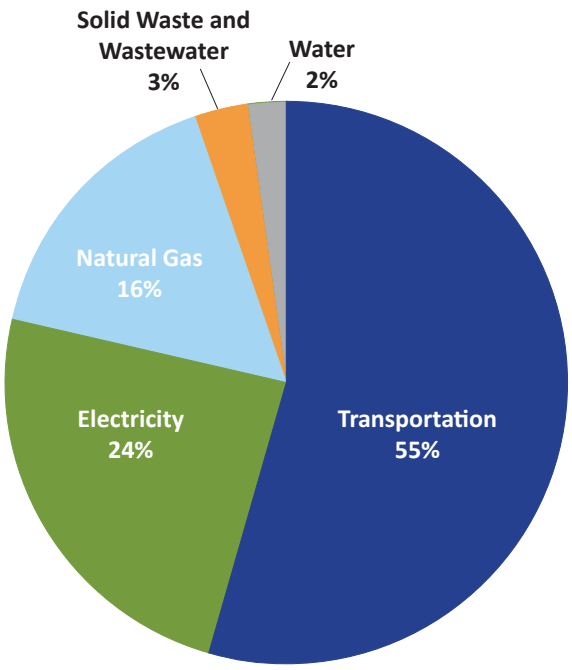
2010 Baseline Emissions

The 2010 baseline for the CAP is 12,984,993 Metric Tons of CO_2e. The GHG emissions inventory may be thought of as a point-in-time estimate of emissions. It provides a benchmark from which future emissions will be compared. The CAP uses a 2010 baseline pursuant to a recommendation from the California Air Resources Board that local governments set a 2020 reduction target of 15 percent below current emissions. Data and information from 2010 was used to calculate a reliable baseline of emissions for the City to use to set its reduction targets. The methods used to estimate GHG emissions for 2010 are consistent with the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions.

The breakdown of GHG emissions in San Diego is very similar to that of other Southern California cities. Due to the high frequency of single-occupancy vehicles trips, the transportation sector contributes the largest output of GHG emissions. This is followed by the energy sector (electricity and natural gas) and then by waste emissions (calculated as a combination of GHG emissions from the landfill and the wastewater system).

Figure 2.1 illustrates the community-wide emissions. Although not called out separately in the figure, municipal emissions contribute approximately one percent of the City of San Diego's community-wide GHG emissions. While this number may seem relatively insignificant, the GHG reduction potential represents an opportunity for the City to take a leadership role by reducing its own impacts. City operations include potable and recycled water treatment and distribution, wastewater treatment, solid waste and recycling collection, landfill management, street maintenance, and data management.

Figure 2.1: 2010 Community-wide Emissions Inventory



Business-as-usual Projections and Reduction Targets for 2020 through 2035

California has committed to reducing GHG emissions while accommodating a growing population and encouraging economic growth. The state's road map for achieving reductions - the Air Resources Board Scoping Plan - charts future emissions by comparing various policy options to a "business-as-usual" (BAU) scenario. The BAU scenario represents future GHG emissions without further regulatory or policy intervention to reduce emissions.

Figure 2.2 illustrates the 2010 baseline, the projected BAU emission levels, and City's reduction calculations for 2020 (24% below baseline), 2030 (41% below baseline) and 2035 (51% below baseline). The figure is displayed in metric tons of carbon dioxide equivalents (MT CO_2e).

Figure 2.2: City Projected GHG Emission Levels and Reduction Targets.

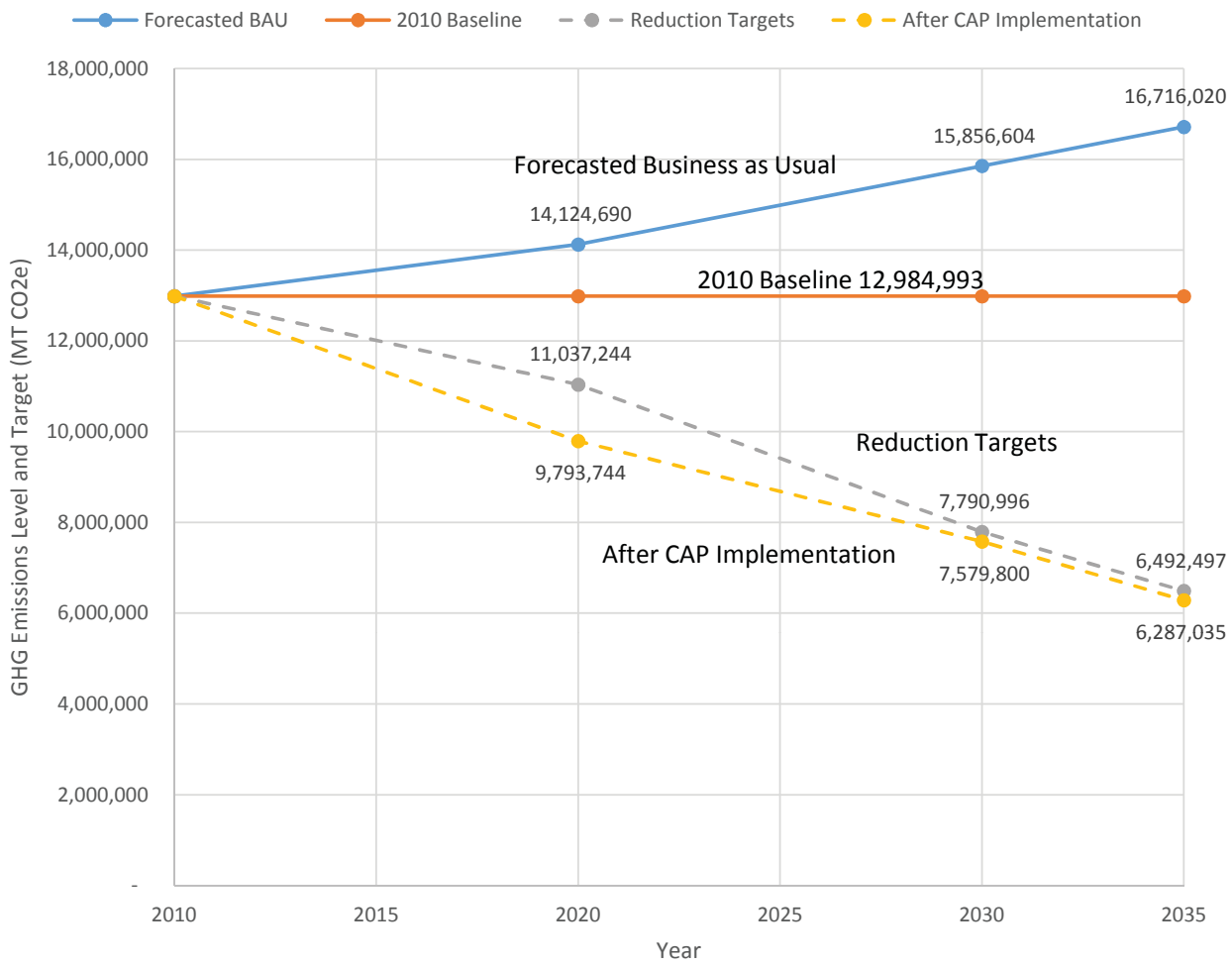


Table 2.1: GHG Emissions Reduction Values (MT CO_2e)

	2020	2030	2035
2010 Baseline	12,984,993	12,984,993	12,984,993
Total Projected Emissions (Business As Usual)	14,124,690	15,856,604	16,716,020
City Target Emission Levels	11,037,244	7,790,996	6,492,497
Total Reductions From CAP	4,330,946	8,276,04	10,428,926
Total Resulting CO_2e Emission Levels	9,793,744	7,579,800	6,287,035

The CAP also includes a BAU projection of emissions through 2035 for the City. The BAU projection starts with the baseline year, a regulatory snapshot of the world at that time, and projects emissions into the future based on expected changes to population and economic activity. It assumes that all other variables, such as policies to reduce emission, remain constant through 2035. For example, in 2010 about 12 percent of electricity supplied to the City was from renewable sources. Even though the law requires suppliers to reach a renewable level of 33 percent by 2020, the BAU projection assumes only 12 percent renewable through 2035. **Appendix A** provides a detailed summary of the assumptions used to develop the BAU projection.

As illustrated in **Table 2.1**, the CAP consists of a 2010 inventory of GHG emissions; a BAU projection for emissions at 2020, 2030, and 2035; a calculation of the City's targets based on a reduction from the 2010 baseline; and emission reductions with implementation of the CAP.

Accounting for future population and economic growth, the City projects GHG emissions of **14,124,690** MT of CO_2e in 2020 and **16,716,020** MT of CO_2e in 2035. As described on page 3, the CAP, in compliance with the California Air Resources Board (CARB) recommendation, sets a target to achieve a 15 percent reduction from the 2010 baseline by 2020. The CAP also includes reduction targets to reduce emissions below the 2010 baseline by 40 percent by 2030, and 50 percent by 2035. Therefore, the City must implement strategies that reduce emissions to **11,037,244** MT of CO_2e in 2020, **7,790,996** MT of CO_2e in 2030, and **6,492,497** MT of CO_2e in 2035.

By meeting the 2020 and 2035 targets, the City will maintain its trajectory to meet its proportional share of the 2050 state target. Future actions anticipated by the state and possible federal initiatives would reduce the need for local measures and help ensure broader participation in emission reduction efforts. If CARB adopts a recommendation for a percentage reduction for local governments for future years, the City will amend its targets accordingly.

Figure 2.3: GHG Reductions by Sector and Target Year

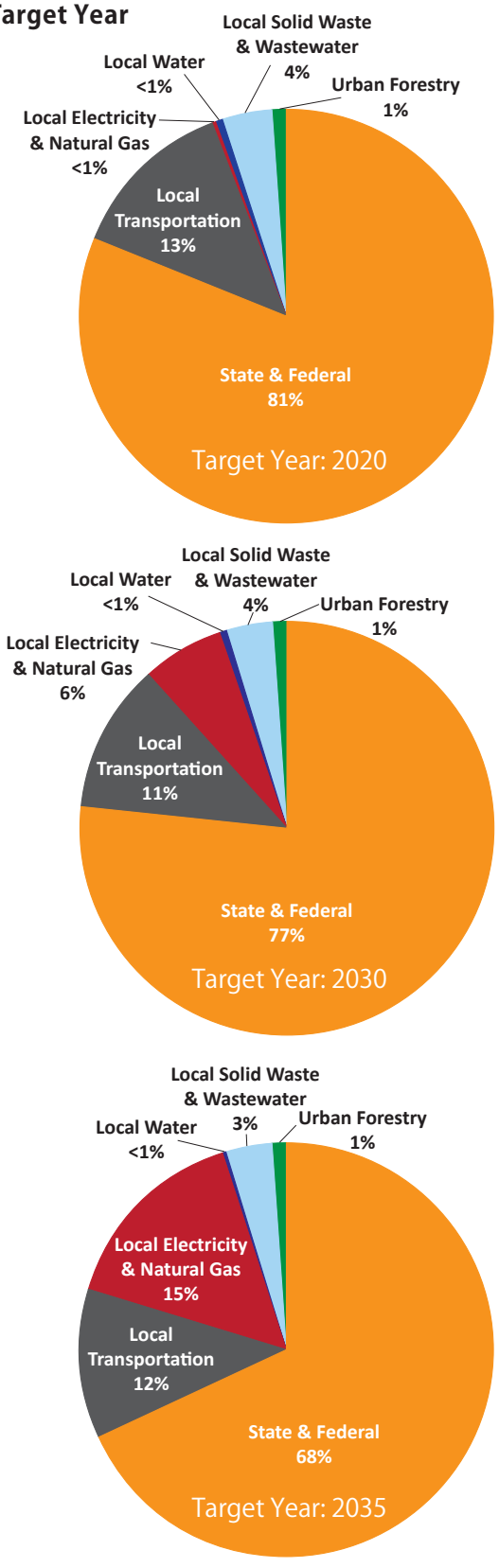


Figure 2.3 breaks down the various GHG emission reductions by sector for 2020, 2030, and 2035.

The regional, local, city actions included in the CAP were identified as part of an iterative process with the Environmental and Economic Sustainability Task Force (EESTF), City staff, and stakeholders. The final list of recommendations includes actions with the greatest reduction potential as well as actions where the City has the greatest opportunity and authority for implementation.

The CAP also includes mandatory GHG reduction actions that have been adopted by federal and state agencies. The City performed its analysis assuming implementation of these adopted actions. When state and federal mandates are fully implemented by 2020, these actions will provide approximately 81 percent of the 2020 GHG reductions and 68 percent of the 2035 GHG reductions. For further information on the methodology of how the GHG reduction strategies were generated, refer to **Appendix A**.

The City's ability to grow its population and economy while meeting the GHG reduction targets will require a broad-based participation that no single emissions category, organization, or institution can achieve on its own. This is a challenge that must be shared by the entire community. Everyone who lives, works, shops, or plays in the City contributes to the community's GHG emissions, and everyone will need to be part of the solution.

Local Strategies

Strategy 1: Energy & Water Efficient Buildings

Both non-residential and residential buildings offer opportunities for emissions reductions in new development as well as existing structures. Generally, building strategies focus on site-specific design and innovation, and technological improvements that increase energy efficiency and provide renewable energy generation. Because both non-residential and residential property owners, as well as their respective tenants, have different needs and demands, reduction strategies will consist of a mixture of regulatory mandates and incentives to improve building performance.

The City has identified FIVE BOLD STRATEGIES to reduce GHG emissions to achieve the 2020 and 2035 targets:

1. **ENERGY & WATER EFFICIENT BUILDINGS**
2. **CLEAN & RENEWABLE ENERGY**
3. **BICYCLING, WALKING, TRANSIT & LAND USE**
4. **ZERO WASTE**
5. **CLIMATE RESILIENCY**

Strategy 2: Clean & Renewable Energy

Clean, renewable energy is essential to achieving the GHG reduction targets. A combination of on-site generation and large-scale renewables will assist the City in meeting its GHG reduction targets in the most efficient way. The City aims to facilitate installation of renewable energy locally, and suport local job creation as part of this strategy.

Strategy 3: Bicycling, Walking, Transit & Land Use

Transportation strategies cover a broad range of activities that aim to reduce vehicle miles travelled (VMTs), improve mobility, and enhance vehicle fuel efficiency. Specific implementation measures involve changing land uses, adopting a new perspective on community design, promoting alternative modes of travel, revising parking standards, and managing parking.

Strategy 4: Zero Waste (Gas & Waste Management)

There are several different options for managing waste including source reduction, increased recycling, and gas capture.

Scripps Recreational Center

The Growing Presence of Renewable Energy in San Diego

- The City's Miramar Landfill and the Metro Biosolids Center have contracts with companies that collect the methane gas to serve their private cogeneration facilities at the Metro Biosolids Center and North City Water Reclamation Plant and the City generator at North City Water Reclamation Plant, and produce nearly 15 MW of energy. These renewable energy facilities service the North City Water Reclamation Plant, the Metro Biosolids Center, the Miramar Landfill, and the Marine Corps Air Station Miramar. The excess energy is fed back to the SDG&E.

- The City has a contract with a company that implemented the Beneficial Utilization Digester Gas (BUDG) project which process the excess gas produced at the Point Loma Wastewater Treatment Plant to produce green gas and inject it into the SDG&E natural gas pipeline, which is being used by the 4.5 MW of ultra clean fuel cells owned by a private contractor.

- The City is partnering with the San Diego County Water Authority to conduct an in-depth study of the feasibility of a multi-year renewable energy project at the San Vicente Reservoir. The study will also evaluate the potential contribution of a large-scale pumped storage project toward meeting the City's renewable energy needs.

- The City also has photovoltaics (solar) systems installed at various facilities, including water treatment plants that produce approximately 2.2 MWs of renewable energy.

San Diego EcoDistricts - North Park and Pacific Beach

Working with two key community partners- San Diego Gas and Electric and the San Diego Green Building Council- and inspired by the EcoDistricts model, the North Park EcoDistrict was launched in early 2013. The North Park EcoDistrict goal is to evolve as a neighborhood that collectively uses resources mindfully, embodies a thriving green economy, sustains it's historic nature, provides for the well-being of community members, nurtures the local environment, promotes equity in many fashions and inspires community members and other neighborhoods.

In the Pacific Beach community, a group of architects, the Pacific Beach Planning Group, and community members, in cooperation with The American Institute of Architecture (AIA), have held extensive workshops to develop a vision for a community-wide EcoDistrict. Some of the first steps identified by the AIA Sustainable Design Assessment Team include engaging the community to work collaboratively to improve the environment of Pacific Beach and to improve the conditions for bicycling and walking.

Methane gas is a by-product from the decomposition of organic material, and it is a GHG that has 20 times the warming impact as carbon dioxide. For this reason, landfills and wastewater treatment plants were among the first facilities required to report emissions under AB 32.

As reduction of waste entering the landfill greatly reduces GHG emissions, the goal for the City is to achieve a 75 percent waste diversion rate by 2020. The City also has a goal to strive for Zero Waste disposal by 2040.

Strategy 5: Climate Resiliency

Climate Resiliency can be defined as the capacity of a system to absorb disturbance and reorganize while undergoing change and still retain essentially the same function, structure and feedbacks, and therefore identity. The intent is to develop programs, policies, and processes that are not rigid or static, but rather flexible allowing change to accommodate unexpected events and shocks and continue to function effectively. This document illustrates the path forward by providing next steps and recommendations for areas of further analysis.

Plug-in Fed Ex Delivery Truck

Federal and State Strategies

State and Federal regulations will continually evolve over the life of the CAP. The CAP provides flexibility for the City to make amendments to account for these new requirements and adjust the CAP to meet its goals.

Federal Corporate Average Fuel Economy

The US EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) joint rule established a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that has already reduced GHG emissions and improved fuel economy.

Car-charging at Balboa Park

The standards for tailpipe GHG emissions and fuel economy were tightened in 2012 for 2017-2025 models, which will lead to even greater reductions by 2025 (National Highway Traffic Safety Administration, 2012).

California Renewables Portfolio Standard

Established in 2002 under SB 1078, accelerated in 2006 under SB 107 and expanded in 2011 under SB 2, California's Renewables Portfolio Standard (RPS) requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 (California Public Utilities Commission, 2014).

California Public Utilities Commission Long-Term Energy Efficiency Strategic Plan

On Sept. 18, 2008, the CPUC adopted California's first Long Term Energy Efficiency Strategic Plan, presenting a single road map to achieve maximum energy savings across all major groups and sectors in California. This comprehensive plan, running through 2020, is the state's first integrated framework of goals and strategies for saving energy, covering government, utility, and private sector actions, and holds energy efficiency as the highest priority resource in meeting California's energy needs (California Public Utilities Commission, 2013).

California Low Carbon Fuel Standards

Executive Order S-1-07, the Low Carbon Fuel Standards (LCFS) calls for a reduction of at least 10 percent in the carbon intensity of California's transportation fuels by 2020 (California Air Resources Board, 2014).

California Air Resources Board Heavy Duty Vehicle Regulations

Adopted in December 2008, this regulation requires improvements in heavy-duty vehicles. The regulation is expected to reduce GHG emissions by approximately 1 million metric tons of CO_2e by 2020, statewide. By the end of 2020 it is estimated that truckers and trucking companies will save about $8.6 billion because diesel fuel consumption will be reduced by as much as 750 million gallons for travel in California and 5 billion gallons for travel across the nation (California Air Resources Board, 2014).

Comprehensive Energy Efficiency Program for Existing Buildings

Assembly Bill 758 (Skinner, Chapter 470, Statutes 2009) requires the Energy Commission to develop a comprehensive program to achieve greater energy efficiency in the state's existing buildings. The Energy Commission has created the Comprehensive Energy Efficiency Program for Existing Buildings Scoping Report, which outlined market needs and identified barriers to implementation. The Energy Commission will also adopt the AB 758 Action Plan, a roadmap of strategies encompassing all energy efficiency approaches. The program will also focus on implementing the roadmap to scale to achieve energy efficiency goals, partnerships, and market development and develop and institute a plan to move energy efficiency practices into the mainstream.

CHAPTER 3

IMPLEMENTATION AND MONITORING

Hillcrest Neighborhood

Implementation and monitoring will ensure a successful Climate Action Plan.

The CAP identifies a comprehensive set of goals, actions, and targets that the City can use to reduce GHG emissions. These actions include a combination of ordinances, City Council policies, resolutions, programs, and incentives, as well as outreach and education activities. Before items are presented to the City Council, a cost benefit analysis will be performed, including a cost-per-GHG reduction analysis. As implementation occurs, each action will be assessed and monitored. The City of San Diego recognizes the need for proper staffing, financing, and resource allocation to ensure the success of each mechanism included in the CAP.

The City also recognizes that given the long planning horizon of the CAP, it may become necessary to modify the specific actions as circumstances change over time. For example, some of the actions are at the early stages of development and will require feasibility studies, coordination with other agencies, or funding sources to be secured before they can be implemented. Additionally, improvements in energy technology and efficiency, transportation technology and fuels, building standards, consumer behavior, and future federal and state regulations may warrant revisiting the actions over time. While the City is committed to meeting the 2020 and 2035 GHG reduction targets, the City recognizes that there are multiple ways to achieve that goal and that flexibility in implementation is necessary to allow the City to evolve its strategies to achieve the most effective path to the desired result. The City may amend the CAP when circumstances require the CAP actions to provide additional flexibility or clarity. These circumstances include, but are not limited to, new available data and resources, state and federal legislation or regulations, new technology, new regional plans, and new standards in GHG emission reduction calculations. Specifically, for identified local ordinance, policy or program actions to achieve 2020 and 2035 GHG reduction targets, the City may substitute equivalent GHG reductions through other local ordinance, policy or program actions.

Little Italy Neighborhood

Table 3.1: Local, Regional, State and Federal Actions	2020 MT CO_2e Reduction	2030 MT CO_2e Reduction	2035 MT CO_2e Reduction
Strategy 1: Water & Energy Efficient Buildings			
1.1 Residential Energy Conservation and Disclosure Ordinance	3,218	6,078	5,605
1.2 City's Municipal Energy Strategy and Implementation Plan	11,580	12,321	9,011
1.3 New Water Rate and Billing Structure	12,210	14,948	12,277
1.4 Water Conservation and Disclosure Ordinance	12,589	19,898	21,470
1.5 Outdoor Landscaping Ordinance	2,090	1,888	653
Strategy 2: Clean & Renewable Energy			
2.1 Community Choice Aggregation Program or Another Program	-	531,254	1,592,878
2.2 Municipal Zero Emissions Vehicles	12,144	18,621	21,859
2.3 Convert Municipal Waste Collection Trucks to Low Emission Fuel	2,018	8,501	10,144
Strategy 3: Bicycling, Walking, Transit & Land Use			
3.1 Mass Transit	119,234	138,016	213,573
3.2 Commuter Walking	1,092	1,338	1,488
3.3 Commuter Biking	19,077	40,177	50,574
3.4 Retiming Traffic Signals	11,024	9,032	8,508
3.5 Install Roundabouts	2,110	2,506	2,172
3.6 Promote Effective Land Use to Reduce Vehicle Miles Traveled	-	73,051	109,576
Strategy 4: Zero Waste (Gas & Waste Management)			
4.1 Divert Solid Waste and Capture Landfill Emissions	154,467	283,309	344,213
4.2 Capture Methane from Wastewater Treatment	16,424	18,000	18,735
Strategy 5: Climate Resiliency			
5.1 Urban Tree Planting Program	43,839	82,806	102,290
Supporting Regional Action*			
SANDAG - SB 375	397,580	661,061	792,801
Supporting State and Federal Actions*			
CA Renewable Portfolio Standard (RPS)	887,084	840,086	398,219
CA RPS - Community Choice Aggregation or Another Program	-	960,098	1,592,878
CA Solar Programs	154,975	426,262	572,333
CA Vehicle Efficiency Standards - Pavley 1/CAFE	1,407,061	2,373,735	2,498,388
CA Low Carbon Fuel Standard	628,425	571,210	569,268
CA Electric Vehicle Policies and Programs	196,542	758,803	1,185,078
CA Energy Efficiency Policies and Programs	202,142	387,265	257,192
CA CARB Tire Pressure Program	25,920	27,840	28,800
CA CARB Heavy Duty Vehicle Aerodynamics	8,100	8,700	9,000
GHG Reductions Summary			
Total Reduction from State and Federal Actions	3,510,249	6,353,998	7,111,156
Total Reductions from Regional Actions	397,580	661,061	792,801
Total Reductions from Local Actions	423,116	1,261,745	2,525,027
Total GHG Reductions with Implementation of the Climate Action Plan	4,330,945	8,276,803	10,428,984
Target Summary			
2010 Baseline	12,984,993	12,984,993	12,984,993
Total Projected Emissions (Business-as-Usual)	14,124,690	15,856,604	16,716,020
City Target Emissions Levels	11,037,244	7,790,996	6,492,497
Resulting GHG Emissions with Implementation of the Climate Action Plan	9,793,744	7,579,800	6,287,035

* Regional, State and Federal Actions are not expanded upon further in the Implementation Tables as the City of San Diego does not need to enact local policies to support them.

Phasing

To optimize resource efficiency and overall effectiveness of implementing the actions, the CAP is divided into **three general phases:**

Phase 1: Early Actions

January 1, 2016- December 31, 2017

This phase includes short-term actions that are high-priority and return large emission reductions. In addition, short-term actions will include laying the foundation for longer-term actions. Diligent work in Phase 1 should decrease risks and increase chances for success of actions implemented in the later phases. Annual monitoring of implemented actions will inform the City, and public, of the CAP's GHG emissions reduction progress.

The early actions are necessary for the City to plan for, and reach, its 2020 and 2035 GHG Emissions Reduction Targets.

Phase 2: Mid-Term Actions

January 1, 2018- December 31, 2020

This phase includes mid-term actions specifically focused on helping the City to reach its 2020 GHG Emissions Reduction Target.

Phase 3: Longer-Term Actions

2021-2035

Long-term actions will take more time to implement but are essential for meeting the City of San Diego's 2035 GHG emissions reduction goals. While City government action is the primary focus of the CAP, many others in the community (as well as outside of it) will need to take action to achieve our bold vision.

Legend to Implementation Tables

Strategy = Corresponds to the FIVE Bold Strategies.

Lead Departments = Responsible City parties for ensuring implementation.

General Plan Policies = Referenced 2008 General Plan policy.

Goal = Effort to achieve a result.

Action = Regulatory and/or policy mechanisms to implement the GHG reduction target.

Target = Percentage of GHG emissions to be reduced by a defined time frame.

GHG Reductions = GHG reduction potential of each action in carbon dioxide equivalents based on substantial evidence provided in Appendix A.

Supporting Measures = Supporting Measures that assist in the implementation of the Actions. These Supporting Measures are not included in the quantified GHG reductions.

Table 3.1 (opposite page) outlines the Five Bold Strategies and the City's Local Actions' GHG emissions reduction values. The Local Actions are expanded upon on the following pages. For more detailed information on GHG Reductions, please refer to **Appendix A**.

STRATEGY 1: ENERGY & WATER EFFICIENT BUILDINGS

LEAD DEPARTMENTS: Environmental Services, Planning, Public Utilities and Development Services Departments

GENERAL PLAN POLICIES: CE-I.7, CE-I.5b, CE-I.13, CE-A.11e, CE-A.11h, CE-A.11i, CE-D.1h, CE-D.1i, CE-D.1j, CE-D.1k, CE-D.1l, CE-D.1m, CE-I.4

GOAL:

Reduce residential building energy consumption.

ACTION 1.1: **PHASE 1**

Present to City Council for consideration a residential Energy Conservation and Disclosure Ordinance.

TARGET:

Reduce energy use by 15% per unit in 20% of residential housing units by 2020 and 50% of units by 2035.

GHG REDUCTIONS:

2020	2035
3,218 MT/CO_2e	5,605 MT/CO_2e

GOAL:

Reduce municipal energy consumption.

ACTION 1.2: **PHASE 1**

Present to City Council for consideration a Municipal Energy Strategy and Implementation Plan.

TARGET:

Reduce energy consumption at municipal facilities by 15% by 2020 and an additional 25% by 2035.

GHG REDUCTIONS:

2020	2035
11,580 MT/CO_2e	9,011 MT/CO_2e

STRATEGY 1: ENERGY & WATER EFFICIENT BUILDINGS

GOAL:

Reduce daily per capita water consumption.

ACTION 1.3: **PHASE 2**

Support water rate structures that provide pricing signals that encourage water conservation and reuse, including greywater use, within the limits established by Propositions 218 and 26.

TARGET:

Reduce daily per capita water consumption by 4 gallons by 2020 and 9 gallons by 2035.

GHG REDUCTIONS:

2020	2035
12,210 MT/CO_2e	12,277 MT/CO_2e

ACTION 1.4: **PHASE 1**

Present to City Council for consideration a Water Conservation and Disclosure Ordinance.

TARGET:

Reduce daily per capita water consumption by 4 gallons by 2020 and 9 gallons by 2035.

GHG REDUCTIONS:

2020	2035
12,589 MT/CO_2e	21,470 MT/CO_2e

STRATEGY 1: ENERGY & WATER EFFICIENT BUILDINGS

ACTION 1.5: **PHASE 1**

Implement an Outdoor Landscaping Ordinance that requires use of weather-based irrigation controllers.

TARGET:

Reduce daily per capita water consumption by an additional 3 gallons by 2020 and an additional 5 gallons by 2035.

GHG REDUCTIONS*:

2020	2035
2,090 MT/CO_2e	653 MT/CO_2e*

SUPPORTING MEASURES FOR ENERGY & WATER EFFICIENT BUILDINGS:

- Expand the Property-Assessed Clean Energy (PACE) financing programs to further support residential and non-residential energy and water efficiency actions.
- Expand incentive programs that further promote energy and water efficiency in residential and non-residential buildings.
- Implementation of amendments to the City's Building Code that require installation of cool roof materials consistent with the supplementary measures contained in the CalGreen Code for new construction, significant repairs to existing roofs, and re-roofing.
- Implement a Smart Energy Management & Monitoring System (SEMMS) for municipal facilities to monitor and track energy consumption. Based upon results, staff will identify opportunities for greater efficiency and demand response.
- Develop a Zero Net Energy Policy for new municipal-owned buildings.
- Pursue LEED for Existing Buildings: Operation and Maintenance Certification for municipal facilities.
- Record the annual volume percentage of recycled water used and planned to be introduced through 2035. The report will include plans for increasing future annual volumes of recycled water/potable reuse as well as report the number of grey water permits filed for systems discharging more than 250 gallons per day.
- Pursue additional financial resources and incentives for implementing energy and water efficiency measures identified by the conservation and ordinances, and to promote the expansion of greywater systems.

STRATEGY 2: CLEAN & RENEWABLE ENERGY

LEAD DEPARTMENTS: Development Services Department, Environmental Services Department, Economic Development Department

GENERAL PLAN POLICIES: CE-A.2, CE-A.5, CE-A.6, CE-I.5, CE-I.10, CE-I.11 UD-A.4

GOAL:

Achieve 100% renewable energy city-wide by 2035.

ACTION 2.1: **PHASE 2**

Present to City Council for consideration a Community Choice Aggregation (CCA) or another program that increases the renewable energy supply.*

TARGET:

Add additional renewable electricity supply to achieve 100% renewable electricity by 2035 city-wide.

GHG REDUCTIONS:

2020	2035
N/A MT/CO_2e	1,592,878 MT/CO_2e

SUPPORTING MEASURES FOR CLEAN AND RENEWABLE ENERGY:

- Complete a citywide Community Choice Aggregation Feasibility Study, which would include timelines for implementation and analyze potential costs.
- Implement General Plan Policy CE-A.5 to achieve net zero energy consumption by employing sustainable or "green" building techniques for the construction and operation of buildings.
- Support the State's implementation of the Green Tariff Shared Renewables Program.
- Establish policies, programs and ordinances that facilitate and promote siting of new onsite photovoltaic energy generation and energy storage systems.
- Provide adequate funding and resources to meet increased demand for solar photovoltaic and energy storage permitting.
- Encourage solar photovoltaic installations through implementation of a professional-certification permitting program.

*** Note: The City's renewable energy program should include presenting an ordinance to City Council to require new residential and non-residential construction to install conduit for future photovoltaics and electric vehicle (EV) charging stations, and to install plumbing for future solar water heating. Further, should the CCA Program or another program not be implemented, the City will explore the option of utilizing renewable energy credits (RECs) to contribute toward the 100% renewable energy target. Efforts should be local in nature to benefit local renewable energy businesses, create jobs, and increase resiliency for the City.**

STRATEGY 2: CLEAN & RENEWABLE ENERGY

GOAL:

Increase municipal zero emissions vehicles.

ACTION 2.2: **PHASE 1**

Present to City Council for consideration an update to City Administrative Regulation 90.73 to increase the number of municipal zero emissions vehicles.

TARGET:

Increase the number of zero emissions vehicles in the municipal fleet to 50% by 2020 and 90% by 2035.

GHG REDUCTIONS:

2020	2035
12,144 MT/CO_2e	21,859 MT/CO_2e

GOAL:

Convert existing diesel municipal solid waste collection trucks to compressed natural gas or other alternative low emission fuels.

ACTION 2.3: **PHASE 1**

Present to City Council for consideration a Municipal Alternative Fuel Policy.

TARGET:

100% conversion from diesel fuel used by municipal solid waste collection trucks to compressed natural gas or other alternative low emission fuels by 2035.

GHG REDUCTIONS:

2020	2035
2,018 MT/CO_2e	10,144 MT/CO_2e

SUPPORTING MEASURES FOR CLEAN AND RENEWABLE ENERGY:

- Consider updating regulations for alternative fuel and zero emissions vehicle requirements for the City's vehicle fleet.
- Consider an integrated transportation strategy that combines zero emissions vehicle deployment and infrastructure.
- Present to City Council for consideration an Electric Vehicle Charging Plan.

STRATEGY 3: BICYCLING, WALKING, TRANSIT & LAND USE

LEAD DEPARTMENTS: Transportation and Storm Water, Planning, General Services, Development Services, Purchasing and Contracting, Economic Development, Environmental Services Departments

GENERAL PLAN POLICIES: CE-A.2, ME-E.6, ME-F.5, ME-F.6, LU-A.7, ME-B.9, CE-F.1, CE-F.5, ME-C.4

GOAL:

Increase the use of mass transit.

ACTION 3.1: **PHASES 1, 2 & 3**

Implement the General Plan's Mobility Element and the City of Villages Strategy in Transit Priority Areas* to increase the use of transit.

TARGET:

Achieve mass transit mode share of 12% by 2020 and 25% by 2035 in Transit Priority Areas.

GHG REDUCTIONS:

2020	2035
119,234 MT/CO_2e	213,573 MT/CO_2e

GOAL:

Increase commuter walking opportunities.

ACTION 3.2: **PHASES 1, 2 & 3**

Implement pedestrian improvements in Transit Priority Areas to increase commuter walking opportunities.

TARGET:

Achieve walking commuter mode share of 4% by 2020 and 7% by 2035 in Transit Priority Areas.

GHG REDUCTIONS:

2020	2035
1,092 MT/CO_2e	1,488 MT/CO_2e

***TRANSIT PRIORITY AREA:** The Transit Priority Areas map is based on the adopted SANDAG 2050 Regional Transportation Plan (RTP). The RTP is currently being updated as a part of the San Diego Forward Regional Plan . The Transit Priorities Area map will be updated to reflect the updated RTP following adoption by the SANDAG Board, which is anticipated to occur in the fall of 2015.

SB 743 established Section 21099 of the California Public Resources Code (CPRC), which states: "Transit priority area" means "an area within one-half mile of a major transit stop that is existing or planned, if the planned stop is scheduled to be completed within the planning horizon included in a Transportation Improvement Program adopted pursuant to Section 450.216 or 450.322 of Title 23 of the Code of Federal Regulations."

Major Transit Stop, as defined in CPRC Section 21064.3, means: a site containing an existing rail transit station , a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes each having a frequency of service of 15 minutes or less during the morning and afternoon peak commute periods. - See **Appendix B**

STRATEGY 3: BICYCLING, WALKING, TRANSIT & LAND USE

GOAL:

Increase commuter bicycling opportunities.

ACTION 3.3: **PHASES 1, 2 & 3**

Implement the City of San Diego's Bicycle Master Plan to increase commuter bicycling opportunities.

TARGET:

Achieve 6% bicycle commuter mode share by 2020 and 18% mode share by 2035 in Transit Priority Areas.

GHG REDUCTIONS:

2020	2035
19,077 MT/CO_2e	50,574 MT/CO_2e

GOAL:

Reduce vehicle fuel consumption.

ACTION 3.4: **PHASE 2**

Implement a Traffic Signal Master Plan to retime traffic signals to reduce vehicle fuel consumption.

TARGET:

Retime 200 traffic signals by 2020.

GHG REDUCTIONS:

2020	2035
11,024 MT/CO_2e	8,508 MT/CO_2e

ACTION 3.5: **PHASE 2**

Implement a Roundabouts Master Plan to install roundabouts to reduce vehicle fuel consumption.

TARGET:

Install roundabouts at 15 intersections by 2020 and an additional 20 intersections by 2035.

GHG REDUCTIONS:

2020	2035
2,110 MT/CO_2e	2,172 MT/CO_2e

STRATEGY 3: BICYCLING, WALKING, TRANSIT & LAND USE

GOAL:

Promote effective land use to reduce vehicle miles traveled.

ACTION 3.6: **PHASES 1, 2 & 3**

Implement transit-oriented development within Transit Priority Areas.

TARGET:

Reduce average vehicle commute distance by two miles through implementation of the General Plan City of Villages Strategy by 2035.

GHG REDUCTIONS:

2020	2035
0 MT/CO_2e	109,576 MT/CO_2e

SUPPORTING MEASURES FOR BICYCLING, WALKING, TRANSIT & LAND USE:

- Implement bicycle improvements concurrent with street re-surfacing projects, including lane diets, green bike lanes, sharrows, and buffered bike lanes.
- Implement a bicycle sharing program with DecoBikes. Reduce the "1 mile" barrier gap by ensuring that further expansion of the bike share program is designed and implemented to reduce the distance needed to travel between transit stops and destinations.
- Identify and address gaps in the City's pedestrian network and opportunities for improved pedestrian crossings, using the City's Pedestrian Master Plan and the City's sidewalk assessment.
- Adopt City portions of SANDAG's forthcoming first mile/last mile initiative and incorporate Safe Routes to Transit strategies in Transit Priority Areas.
- Coordinate pedestrian counting programs with SANDAG & SDSU Active Transportation Research Programs.
- Develop a Parking Plan to include measures such as "unbundled parking" for nonresidential and residential sectors in urban areas.
- Prepare a Commuter Report with measures to increase commuting by transit for City employees.
- Achieve better walkability and transit-supportive densities by locating a majority of all new residential development within Transit Priority Areas.
- Develop a new priority ranking for capital improvement projects in Transit Priority Areas that will be integrated into Council Policy 800-14, Community Development Block Grant and other grant opportunities, and Public Facilities Financing Plans. See Ch. 4 Social Equity & Job Creation..
- In addition to commuting, implement infrastructure improvements including "complete streets" to facilitate alternative transportation modes for all travel trips.
- The most recent version of the California Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen tool will be used as one method to identify and help prioritize, when possible, underserved communities in census tracts ranking in the top 30% of CalEnviroScreen scores, which may be locally normalized, for transit-related infrastructure improvements and capital improvements.

STRATEGY 4: ZERO WASTE (GAS & WASTE MANAGEMENT)

LEAD DEPARTMENTS: Environmental Services Department, Public Utilities Department

GENERAL PLAN POLICIES: CE-A.2, CE-A.8, CE-A.9, CE-E.6, CE-M.3, CE-N.4, CE-N.7, PF-I.1, PF-I.2

GOAL:

Divert solid waste and capture landfill methane gas emissions.

ACTION 4.1: **PHASE 1**

Enact the City's Zero Waste Plan, and implement landfill gas collection operational procedures in compliance with the California Air Resources Board's Landfill Methane Capture regulations.

TARGET:

Divert 75% of solid waste by 2020 and 90% by 2035. Capture 80% of remaining landfill emissions by 2020 and 90% by 2035.

GHG REDUCTIONS:

2020	2035
154,467 MT/CO_2e	344,213 MT/CO_2e

GOAL:

Capture methane gas from wastewater treatment.

ACTION 4.2: **PHASES 2**

Implement operational procedures to capture methane gas from wastewater treatment.

TARGET:

Capture 98% wastewater treatment gases by 2035.

GHG REDUCTIONS:

2020	2035
16,424 MT/CO_2e	18,735 MT/CO_2e

SUPPORTING MEASURES FOR ZERO WASTE:

- Develop a Resource Recovery Center and "one-stop shop" at Miramar Landfill that provides opportunities to maximize waste diversion.
- Convert curb side recycling and curb side greenery collection programs to a weekly basis and add kitchen scraps to greenery.

STRATEGY 5: CLIMATE RESILIENCY

LEAD DEPARTMENTS: Development Services, Planning Department, Parks and Recreation Department, Public Works Deparment

GENERAL PLAN POLICIES: CE-A.2, CE-J.1, CE-J.2, CE-J.3

GOAL:

Increase urban tree canopy coverage.*

ACTION 5.1: **PHASE 2**

Present to City Council for consideration a city-wide Urban Tree Planting Program. The program shall include water conservation measures to minimize the water use for tree plantings. The measures should include planting drought-tolerant and native trees, and prioritizing tree plantings in areas with recycled water and greywater infrastructure.

TARGET:

Achieve 15% urban tree canopy coverage by 2020 and 35% urban tree coverage by 2035.

GHG REDUCTIONS:

2020	2035
43,839 MT/CO_2e	102,290 MT/CO_2e

SUPPORTING MEASURES FOR CLIMATE RESILIENCY:

- Develop a regional (Western San Diego County) Urban Tree Canopy Assessment in collaboration with other regional jurisdictions and SANDAG.
- Prepare a Parks Master Plan that prioritizes parks in underserved communities.
- Hire an Urban Forest Program Manager.
- Plan for the long-term maintenance of additional trees and ensure sufficient staff and funding are available.
- Complete the Urban Forest Management Plan and present to City Council for adoption.

*** URBAN TREE CANOPY COVERAGE**

Urban tree canopy refers to the tree crowns that cover the ground when viewed from above. Typically, urban tree canopy coverage is measured by using high definition aerial imagery to calculate how much of the City is "shaded" by trees. Citywide tree canopy coverage is generated by street trees, trees in parks, open space, and private residential, commercial, and industrial areas.

MONITORING & REPORTING
Measure 1: CAP Annual Monitoring Report

IMPLEMENTING MECHANISMS:	IMPLEMENTATION PHASES:

1.1 Sustainability Program Manager

As a companion item to the CAP, the Mayor and City Council have established the position of Sustainability Program Manager to oversee the implementation and monitoring of all actions outlined in the CAP. To increase efficiency and reduce costs, the City will integrate these actions into the context of existing workloads and programs whenever possible. The Program Manager will establish an interdisciplinary team of staff from various City departments to coordinate implementation efforts and coordinate city-wide progress. The position will also oversee the development of the climate adaptation plan and updates to this plan.

2015-2017	2018-2020	2021-2035
✓		

1.2 Annual Monitoring Report

Staff will conduct an inventory of community-wide GHG emissions and develop an Annual Monitoring Report that will include specific actions, proposed outcomes and a timeline with milestones to track success in meeting 2020 and 2035 targets.

2015-2017	2018-2020	2021-2035
✓	✓	✓

1.3 Citywide data collection and sharing

The City commits to sharing data with other government entities, academic institutions, military, corporate, and civic organizations. The City may be limited in its ability to share certain types of data (i.e. energy usage by individuals).

2015-2017	2018-2020	2021-2035
✓	✓	✓

1.4 Amend policies, plans, and recommendations

Staff will annually evaluate city policies, plans (including the CAP) and codes as needed to ensure the CAP reduction targets are met. Any actions requiring City Council approval will be brought back to City Council for consideration. Amendment of the CAP will be required if it is not meeting the GHG emission reductions outlined in the CAP or otherwise required by law. Additionally, it is anticipated that an update of the CAP will occur by 2020.

2015-2017	2018-2020	2021-2035
✓	✓	✓

MONITORING & REPORTING
Measure 2: Carbon Inventory Verification

IMPLEMENTING MECHANISMS:	IMPLEMENTATION PHASES:

2.1 Third-party Verification

The City's Environmental Services Department will complete an annual carbon (GHG) inventory as part of the Annual Monitoring Report to be verified through a neutral third-party to ensure it is accurate and complete. Voluntarily submitting the carbon inventory for third-party verification will lend credibility to the CAP and provide assurance to the public of a valid product.

2015-2017	2018-2020	2021-2035
✓	✓	✓

MONITORING & REPORTING
Measure 3: Social Equity and Job Monitoring

IMPLEMENTING MECHANISMS:	IMPLEMENTATION PHASES:

3.1 Annual Jobs Monitoring

As part of the Annual Monitoring Report (AMR), staff will report on local employment related to the Climate Action Plan. To the extent feasible, the AMR will account for the total number of jobs, associated wages, new jobs, and new work for existing firms in the fields of energy efficiency, clean tech, renewable energy, etc. (fields associated with the Climate Action Plan goals). Staff will work with organizations in the region and state currently reporting on this topic to determine the best methodology and process for to use in order to maximize, and not duplicate, existing reporting efforts.

2015-2017	2018-2020	2021-2035
✓	✓	✓

3.2 Social Equity Reporting

Monitoring of social equity will also be a component of the CAP annual monitoring report (AMR). This will include, to the extent feasible, accounting for capital improvement and grant fund expenditures in underserved communities. As this is a new area of reporting for most cities in the U.S., staff will develop the methodology for reporting on social equity as related to implementation of climate action plans and refine as needed, with stakeholder input from organizations in the region and others within the U.S with expertise in this area.

2015-2017	2018-2020	2021-2035
✓	✓	✓

City of San Diego Wastewater Otay Water Treatment Plant

CHAPTER 4

SOCIAL EQUITY AND JOB CREATION

Teralta Park - City Heights

Job Creation

There are considerable economic benefits of implementing CAP strategies in the San Diego community. CAP strategies intended to reduce resource consumption (e.g., energy efficiency measures) may save money for individuals, families, and businesses. In addition, CAP strategies are intended to promote job creation through capital improvements and corresponding research, development, and innovation. These jobs are primarily in high-growth "green job" or "clean tech" with corresponding well-paying wages.

A recent study published by the Natural Resources Defense Council projected that stricter emissions standards could net 210,000 national jobs by 2020 (Stanton et al. 2013). California is poised to capture a large share of these new jobs. As illustrated by Table 4.1, California is the national leader in cleantech job creation. In the second quarter of 2013, the state led the way nationally in green project and job announcements with twelve new wind, solar, biofuels, and transportation projects that could cumulatively create more than 9,000 jobs (E2 2013). E2 reported that California's renewable energy standards will ensure more green jobs will be created in the future, as one-third of all power used in the State will have to come from renewable sources by 2020.

Per the 2014 California Green Innovation Index (6th edition, Next 10) The San Diego region experienced the second fastest growth in distributed solar installations through the California Solar Initiative (CSI) between 2012 and 2013 (+11%), and had a total of about 137 MW installed between 2007 and 2013. The San Diego region also experienced the fastest growth in Advanced Materials jobs between January 2011 and 2012 (+84%) and had the third highest concentration of jobs in the clean economy (about 27,000 or 14% of the state total) and second highest concentration of Clean Transportation jobs.

Table 4.1: Clean Tech Job Activity: Top 15 U.S. Metro Areas

1. San Francisco, CA
2. Los Angeles, CA
3. Boston, MA
4. New York, NY
5. Denver, CO
6. Washington D.C.
7. San Diego, CA
8. Houston, TX
9. Chicago, IL
10. Austin, TX
11. Seattle, WA
12. Atlanta, GA
13. Dallas, TX
14. Portland, OR
15. Sacramento, CA

Source: Clean Edge, 2010

The San Diego Workforce Partnership's "Green Jobs Outlook for San Diego" revealed there were almost 340,000 green jobs in San Diego as of 2011. These numbers are consistent with San Diego's transformation into a hub of green technology innovation where approximately 840 cluster companies were located in 2013 (Cleantech San Diego 2013). Over 20 percent of these companies are solar power focused. These firms offer a range of job opportunities ranging from installation, project management, finance, and research. Clearly, climate action planning and implementation have, and will continue to, lead to the creation of "green jobs."

What is the Value of Green Jobs?

1. Green Jobs are Local Jobs

Implementation of San Diego's Climate Action Plan strategies can create good, local jobs. Energy efficiency and climate-related projects are performed locally, thereby requiring a San Diego-based labor force. These jobs will provide direct benefits to workers in the community. As these workers spend their "green job" income, local businesses benefit from these additional expenditures, increasing demand for products, and potentially leading to additional jobs to support the demand. As such, each new green job can blossom into additional local jobs.

2. Green Jobs are Predominately Middle Class Jobs

Green jobs pay well and provide opportunities for advancement along a career track of increasing skills and wages. The promotion of green jobs is consistent with the White House's Task Force on the Middle Class mandate: to find, highlight, and implement solutions to the economic challenges facing the American middle class. Moreover, the Federal government believes green jobs are an outgrowth of a larger movement to reform the way energy is created and used. The Obama Administration promotes green jobs as they represent a growth sector that provides good jobs (Middle Class Task Force 2009).

3. Green Jobs can Provide Pathways out of Poverty

Many green jobs require more education than high school, but less than a four-year degree and are well within reach for lower-skilled and low-income workers as long as they have access to effective training programs and appropriate supports. **Table 4.2** shows green job wages, with or without a college degree.

Table 4.2: Clean Tech Compensation

Job Title	Industry	Median Pay	Typical Job Level	Typical Degree
Electrical/Electronic Equipment Assembler		$30,300	Mid-Level	HS/AD
Network Operations Center Technician	Smart Grid	$45,100	Mid-Level	HS/AD
Solar Energy System Installer	Solar PV	$37,700	Entry Level	HS/AD
Solar Fabrication Technician	Solar PV	$45,800	Entry Level	HS/AD
Wind Turbine Technician	Wind Power	$48,300	Entry Level	HS/AD
Sheet Metal Worker	Wind Power	$51,500	Mid-Level	HS/AD
Construction Superintendent	Wind Power	$76,700	Senior Level	HS/AD
Solar Energy/Solar Power Project Developer	Solar PV	$62,300	Entry Level	BD
Utility Program Manager	Smart Grid	$77,900	Mid-Level	BD
Solar Installation Foreman	Solar PV	$49,200	Entry-Level	BD
Research and Development Lab Technician	Solar PV	$40,900	Entry-Level	BD

Source: Clean Edge, 2010

Typical Job Level - There are three categories: 1) Entry-Level Positions where workers typically have less than 5 years of experience, 2) Mid-Level Positions where workers typically have between 5 and 10 years of experience, and 3) Senior-Level Positions where workers typically have more than 10 years of experience.

Typical Degree Level - This is the degree held by the majority of respondents.
HS/AD = High School Diploma/Associate's Degree BD = Bachelor's Degree

Job Training

Many green jobs are brand new to the economy. Other green jobs have existed in the past, but have transformed and require new knowledge (e.g., Solar panel installers). Most, but not all, green jobs will require specific skillsets to meet the green economy demands.

For workers that do not have the required skills to obtain these new jobs, there are several training options available through Univeristy of California San Diego and extension, San Diego State University, San Diego State University extension, and the large system of community colleges. San Diego workers can obtain career assistance with "green jobs" from the California Economic Development Department, Cal JOBS, and the San Diego Workforce Partnership. In addition, local apprenticeship programs are available including the International Brotherhood of Electrical Workers (IBEW) San Diego Electrical Training Center, which provides hands-on training for new apprentices or continuing education for experienced workers, the Associated General Contractors of America, San Diego Chapter, Inc. (AGC) on-the-job training apprenticeship program, and the Associated Builders and Contractors (ABC)formal apprenticeship training programs. These programs enable the local contractors to diversify and compete in new markets that help ensure growth in the industry. Additionally, outreach should ensure that disadvantaged communities are aware of and properly trained to meet the needs of jobs in the new green economy.

Many professionals will be trained via the state-certified apprenticeship system for construction workers. These four- to five-year

training programs are largely self-funded by employers and workers.

Social Equity

The benefits of the CAP are intended to be shared equally, fairly, and with lack of prejudice among all persons citywide. The City's General Plan recognizes the importance of addressing environmental justice through equal access to and meaningful participation in the decision-making process and the need to ensure the equitable distribution of public facilities and services. The General Plan includes policies to pursue environmental justice in the planning process through greater community participation, to prioritize and allocate citywide resources to provide public facilities and services to communities in need, and to improve mobility options and accessibility for the non-driving elderly, disabled, low-income, and other members of the population.

To implement the General Plan and provide an equitable distribution of public facilities, infrastructure, and services the City developed Council Policy 800-14 which sets the City's priorities for the City's Capital Improvements Program (CIP). The policy prioritizes projects in under-served communities including those with low income households, low community engagement and low mobility or access to transportation systems based on SANDAG census tract. The City interprets the Council Policy to include the use of the California Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen tool to identify under-served communities and prioritize the CIP in census tracts ranking in the top 30% of CalEnviroScreen scores, which may be locally normalized. The policy also prioritizes projects located in areas eligible for the Community Development Block Grant funds, and projects located within a half mile of affordable housing.

Further, using the State of California Office of Environmental Health Hazard Assessment (OEHHA) CalEnviroScreen, the City will prioritize pursuing future grant opportunities within these communities in order to help achieve the goals and policies of the CAP. The City's prioritization will coincide with the ongoing state and regional efforts to focus grant resources in these areas.

The City also recognizes that CAP measures will not solve all climate-related health issues for disadvantaged communities. These areas will also need special assistance adapting to future climatic changes. The climate adaptation plan (which is described in **Chapter 5: Adaptation**) will identify the vulnerabilities and risks specifically associated with communities of need.

The City's Role as a Leader

While the City may not be able to promise new jobs for, or change the underlying socioeconomic factors of, disadvantaged populations (e.g., age, health status), it can take action to provide equal access to opportunities for economic advancement and promotion of social equity. To provide support to disadvantaged communities and promote equitable job growth and economic opportunity, the CAP has identified specific socioeconomic-specific goals:

- Implementation of the City's Economic Development Strategy (currently 2014 - 2016) with a mission to create a wide spectrum of job opportunities for San Diego residents by expanding the City's economic base and increasing local economic activity, and to generate new tax revenues for essential public services by expanding the City's tax base.

- The City's Economic Development Department proactively works with businesses in targeted industries to provide assistance and incentives that result in the retention and creation of jobs and investment in San Diego. The City often partners with local workforce development agencies (e.g., San Diego Workforce Partnership) and colleges to identify resources for workforce development opportunities for disadvantaged populations.

- Programs should include performance goals and data tracking for the quality of jobs created and the demographic and geographic distribution of workers.

- Provide efficiency and renewable energy training for the City employees responsible for the management of City facilities.
- Prioritize programs and actions to reduce emissions in disadvantaged communities that rank in the top 25 percent of CalEnviroScreen's ranking for San Diego region communities.
- Encourage local businesses working on climate action-related projects and programs to give advanced notice of job opportunities to San Diego community members through local community-based organizations, educational institutions, and media outlets.
- Continue to utilize the state-certified apprenticeship system for the training of construction workers.
- Continue to provide opportunities to disadvantaged populations for municipal projects consistent with the City's Local Small Business Enterprise Ordinance (Ordinance 19922, 2/4/2010).
- Maximize opportunities for workforce development by using existing programs to create career pathways.
- Ensure that all climate action-related work done through City programs comply with the City of San Diego's Prevailing Wage Ordinance, where applicable (Ordinance 20299, 9/26/2013).

Native Plants - Chollas Creek

Jacobs Center - Encanto

CHAPTER 5

ADAPTATION

Mission Valley Center - Trolley Bridge

Why should San Diego adapt now?

The City will develop a stand alone climate adaptation plan that will integrate and build upon the strategies and measures in the CAP.

Some degree of climate change will occur regardless of the City's effort to reduce and mitigate GHG emissions. As a result, the City will need to adapt to these changes within the context of the community's environmental and socioeconomic system. According to the Intergovernmental Panel on Climate Change (IPCC), climate adaptation refers to the "adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities" (IPCC 2007).

The City recognizes that climate adaptation is a core component of its overall response to the impacts of climate change. Development of an actionable adaptation plan will allow the City to focus and prioritize its limited resources, take advantage of early action and planning, and engage in effective collaboration with other local, state and federal agencies that are moving forward with similar planning efforts.

The integration of the climate adaptation plan and CAP should lead to substantial co-benefits whereby individual measures lead to both reduction of GHGs and adaptation to the impacts of climate change. The forthcoming climate adaptation plan will prioritize adaptation resources and timing based on a risk vulnerability rating that takes into account both the likelihood of specific impacts occurring and the severity of those impacts on threatened natural resources, human health, and critical infrastructure. As mentioned in Chapter 4, the vulnerabilities and risks associated with communities of need will be identified.

What is the difference between the Climate Action Plan and a *climate adaptation plan*?

Adaptation efforts seek to reduce vulnerability to projected climate changes and increase the local capacity to adapt (Turner et al., 2003). Adaptation aims to minimize the actual or expected effects of climate change, whereas the CAP includes actions to reduce the creation of greenhouse gases.

Currently, the City does not have the necessary resources to develop an adequate plan that would fully assess the risks and vulnerabilities, develop adaptation strategies, and prepare the community for looming heat waves, sea-level rise, impacts on infrastructure, etc. However, the City is aggressively pursuing additional funding from state and federal sources to develop a comprehensive adaptation plan that will meet the needs of the community. In the meantime, the City will continue to collaborate other local, regional, state, and federal agencies to being to prepare for a changing climate.

Climate Impacts to San Diego

Research from state, regional, and local agencies indicate that the City of San Diego faces serious vulnerabilities from climate change impacts. One such study, commissioned by the San Diego Foundation, titled "San Diego's Changing Climate: A Regional Wake-up Call," was the first of its kind to identify impacts specific to the City of San Diego (San Diego Foundation 2007). The potential impacts include, but are not limited to the following:

2007 Witch Creek Fire

Increased temperatures

- The City will see hotter and drier days and more frequent, prolonged heat waves.

Reduction in air quality

- Hotter and drier days create more air pollution by raising ozone levels and this can exacerbate asthma and other respiratory and cardiovascular diseases.

Introduction of new public health issues

- Warmer temperatures year-round could lead to growing mosquito populations, increasing the regional occurrence of West Nile virus and potentially introducing tropical diseases such as Malaria and Dengue Fever.

Reductions in fresh water

- Water and energy demand will increase while extended and more frequent droughts will cause traditional sources of fresh water supplies to diminish.

Increased rate of wildfires

- Drier weather may increase the frequency and size of wildfires.

Rising sea levels

- Projected sea level rise, coastal erosion, and increasing storm surges may cause fragile sea cliffs to collapse, shrink beaches, and destroy coastal property and ecosystems.

Negative impacts on wildlife

- Native plants and species may be lost forever as entire ecosystems are challenged.

California Adaptation Efforts

More than eight years have passed since publication of the San Diego Foundation's ground-breaking report. It has been almost ten years since approval of 2005 Climate Protection Action Plan (CPAP). Over that period, the risks poised by climate change's impacts have not diminished.

State, regional, and other private entities also recognized the seriousness of the situation and have taken proactive steps to address climate change issues. Several efforts have been, or are, well underway including detailed vulnerability assessments, risk assessments, adaptation policies, and adaptation policy guides for local governments. The City of San Diego will benefit from these resources as it develops its own climate adaptation strategy. Past and current efforts, from which the City can draw, include:

Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future: Published in 2012 by the National Research Council, this Report explains that sea level along the U.S. west coast is affected by a number of factors. These include: climate patterns such as the El Nino, effects from the melting of modern and ancient ice sheets, and geologic processes, such as plate tectonics.

Draft Sea-Level Rise Policy Guidance: Authored by the California Coastal Commission and released in October 2013, provides an overview of best available science on sea-level rise for California and recommended steps for addressing sea-level rise in Coastal Commission planning and regulatory actions.

Executive Order S-13-08: Signed in 2008, the executive order required the preparation of a "California Sea Level Rise Assessment Report" (published in 2009) and requires that state agencies planning construction projects in areas vulnerable to sea level rise consider and address a range of scenarios for 2050 and 2100 coastal inundation.

Preparing for the Impacts of Climate Change in California - Opportunities and Constraints for Adaptation: published by the California Climate Change Center in response to Executive Order S-3-05, this paper examines California's opportunities and constraints for managing the impacts of climate change and provides recommendations for how government, research, and civil society can help California most effectively prepare for climate change impacts.

Safeguarding California Plan (formerly California Climate Adaptation Strategy): Adopted in 2009 and more recently updated in 2013, summarizes climate change impacts and recommends adaptation strategies across seven sectors: Public Health, Biodiversity, Coastal Resources, Water, Agriculture, Forestry, and Transportation and Energy (State of California 2009).

The Adaptation Planning Guide: Included in the California Climate Adaptation Strategy and updated in 2012, provides a decision-making framework intended for use by local and regional stakeholders to aid in the interpretation of climate science and to develop a systematic rationale for reducing risks caused by climate change (State of California 2012).

Fourth Climate Change Assessment: These assessments (third completed in 2012) down scaled global climate data to regionally relevant scales and provides information and recommendations on risks, impacts, and additional research needed.

International Council for Local Environmental Initiatives: Released in 2012, the "Sea Level Rise Adaptation Strategy for San Diego Bay" report provided the nation's first comprehensive vulnerability assessments and recommendations to build resiliency for community-wide infrastructure in San Diego.

Cal-Adapt: The California Natural Resources Agency and the California Energy Commission released a web-based tool that enables city and county planners, government agencies, and the public to identify potential climate change risks in specific areas throughout California.

Co-benefits of Adaptation:

- **Agricultural and Food System Security**
- **Biodiversity and Habitat**
- **Community Education**
- **Economic Stability**
- **Emergency Management and Response**
- **Energy Resources**
- **Infrastructure and Public Facilities**
- **Job Creation and Local Investment**
- **Ocean and Coastal Ecosystem Health**
- **Public Health**
- **Transportation**
- **Social Equity**
- **Urban Forestry and Sequestration**
- **Water Resources**

Chollas Creek Bridge

Local Vulnerabilities

The City's General Plan (2008) and community plans (multiple years) have important roles in the adaptation planning process. The General Plan lays out the policy framework for addressing climate change and the community plans have the purview to make site-specific land use and design recommendations. These plans can be utilized to help reduce the impacts from a changing climate.

Examples of planning-related adaptation strategies include:

- Designating land for a full range of uses, including open spaces and high-density areas where appropriate.
- Designing a multi-modal mobility system with multiple emergency routes.
- Fostering urban agriculture to increase food system security.
- Implementing tree-planting incentives, ordinances, and programs to save energy, sequester carbon, and reduce the urban heat island effect.
- Requiring appropriate setbacks from the coast in areas subject to sea level rise.
- Requiring developers to incorporate low-impact development tools, such as natural drainage basins and water features, to capture storm water in areas vulnerable to increased flood risk.
- Implementing brush management programs to reduce wildfire risk in fire-prone areas.
- Increasing conservation and efficiency in water use to reduce reliance on imported water and drought impacts.
- Coordinating with urban farmers and the regional San Diego County Farm Bureau to promote alternative irrigation measures or other protective recommendations.

There are risks and costs to a program of action. But they are far less than the long-range risks and costs of comfortable inaction."

- Klaus Jacob, Lamont-Doherty Earth Observatory, Columbia University. Chair, Climate Adaptation Group

To adapt to the changing climate, specific sectors will require focused solutions. The following section illustrates vulnerabilities that should be considered for inclusion in the forthcoming City of San Diego climate adaptation plan.

Protect Public Health and Safety

Understanding how climate change impacts may affect human health and developing responsive solutions to protect vulnerable populations is essential. For example:

- Diminished air quality from wildfires or excessive ozone can be dangerous for asthma sufferers.
- Hotter temperatures can cause heat stress and is potentially fatal for vulnerable populations such as the elderly, the young, and outdoor-workers.
- Flooding or coastal inundation events could cause injury or property damage.

Maintain Water Supply and Services

Adequate water supply is a fundamental requirement for every community. Like many other Southern California cities, San Diego is challenged by an ever-increasing demand for water coupled with a projected decline in supply. By 2035 the San Diego County Water Authority projects an increase in total normal water demand of 20 percent (including future conservation, demand associated with projected near-term annexations, and accelerated forecasted growth) from the average demand that occurred over the period 2005-2010 (SDCWA 2010). Currently, 85 to 90 percent of the City of San Diego's water supply is met by imported water (City of San Diego 2013).

Protect and Maintain Urban Infrastructure and Community Services

The public infrastructure and services (e.g., police, fire services, drainage, and sewer systems) form the structural and functional backbone of the City. It is important to identify where the risks are greatest and which critical assets are most vulnerable. This will aid in prioritizing assets and actions to maintain service resilience.

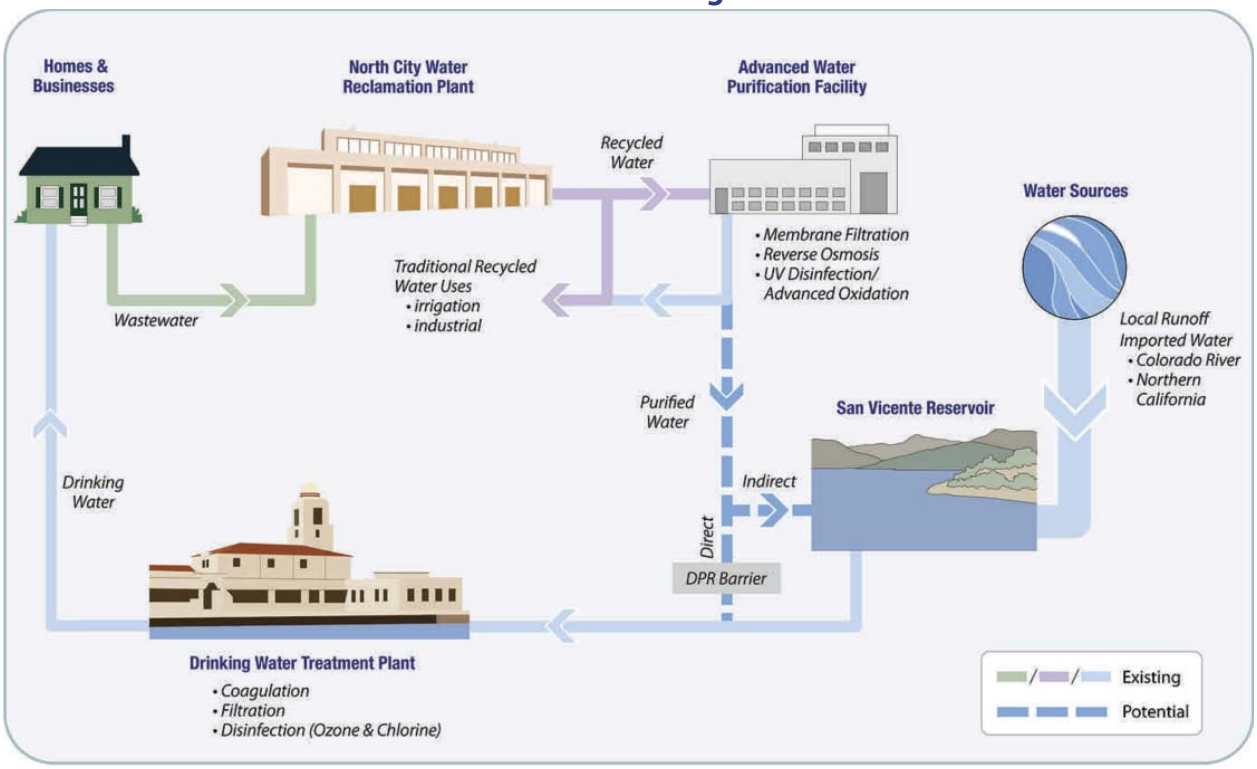
San Diego's Water Supply Choices and Related Carbon Emissions

With limited fresh water supplies locally, San Diego is pioneering the development of alternative water supplies from potable reuse. The City is actively pursuing the viability of constructing a multi-phased potable reuse project that, when completed, is anticipated to provide approximately a third of San Diego's water supplies by 2035.

Pure Water San Diego is the City's 20-year program to provide a safe, reliable and cost-effective drinking water supply for San Diego. The program includes the construction of water purification facilities, pipelines, pump stations, ongoing testing protocols, and an education and outreach program.

San Diego's production of Pure Water is expected to increase energy consumption by the San Diego Public Utilities Department over current operations. However, since Pure Water would replace purchases of imported water (currently representing 85% of San Diego's water supplies), it is appropriate to contrast the embedded energy in an acre-foot (AF) of purified water with that of existing imported water supplies. According to the City of San Diego's 2013 Water Purification Demonstration Project Report, purified water produced at the City's North City Reclamation Facility and then pumped up to the San Vicente reservoir would require approximately 2,500 kWh/AF. By comparison, imported water requires a range of 2,000 kWh/AF to 3,300 kWh/AF of energy, depending on the blend of water from the Colorado River or the Bay-Delta in Northern California. Therefore, the embedded energy of indirect potable reuse is equivalent to that of imported water.*

Pure Water Program



* Source: City of San Diego's 2013 Water Purification Demonstration Project Report.

San Diego Green Streets

The term "Green Streets" is used in many contexts, and it is important to note that is a storm water and low-impact development tool for private and public projects. Compliance with the new Municipal Stormwater Permit will require significant increases in implementation of non-structural, or activity-based strategies, such as education and enforcement, in addition to structural control strategies, such as grassy swales and infiltration basins. One such structural strategy that the City is employing is called "green streets." Storm water treatment techniques that may be included in green streets are porous pavement, infiltration galleries in landscape strips, trash collection devices, or other techniques that filter or infiltrate runoff within the right of way. Green street features may be incorporated into new roadway construction or retrofitted into existing streets.

Example of a Green Street

Protect Environmental Health

Healthy natural water systems, vegetation areas, wetlands, estuaries and the associated biome are important assets to the region. In San Diego, a healthy environment also increases the quality of life for residents and workers, and attracts tourists. Beyond the detrimental impacts on natural plant and wildlife communities, the decline in environmental health would have negative social and economic effects. Balancing the needs of the natural environment with those of the community has always been a challenge, and climate change will put more pressure on the competing systems.

Protect Open Space, Parks and Recreation

Parks and open space are important resources that contribute to San Diego's culture, character, and economy. Green spaces offer recreational and tourism opportunities. They also serve as a climate change adaptation resource where they can alleviate the heat island effect and potentially reduce the impact of flooding.

Coastal Management and Protection

Numerous studies focusing on sea level rise as a result of climate change have been released, including one produced by Local Governments for Sustainability (ICLEI) in 2012 titled "Sea Level Rise Adaptation Strategy for San Diego Bay." The consensus from these studies is that, without substantial reductions in GHG emissions, global temperature increases will likely lead to a rise in sea levels, which will need to be proactively managed.

Urban Forest Management and Local Food Production

Local and regional agriculture is a major driver in the national economy. Producers are responding to increasing demand for local and regional food by increasing production, creating new markets, and launching new businesses. Most recently in September 2013, California Governor Edmund G. Brown Jr. signed several bills to expand access to fresh, locally grown food in communities across California. "This farm to fork legislation expands access to fresh, local produce and will help make our communities healthier," said Governor Brown (State of California 2014).

Close to 80 percent of the U.S. population lives in urban areas and depends on the essential ecological, economic, and social benefits provided by urban trees and forests. (USDA 2010). The City of San Diego recognizes this and has prioritized the expansion of the urban forest as a critical strategy to reduce GHG emissions.

It is important to recognize that increased urban tree coverage and local food production will require increased water usage.

Building and Occupant Readiness

The City's General Plan (2008), community plans and Building Code enforcement play important roles in adaptation planning. The General Plan lays out the policy framework for addressing climate change. The community plans offer specific land use vision and goals for districts and neighborhoods that are generated by each individual community, which generates social engagement that can aid the response to the increasing risk of climate change.

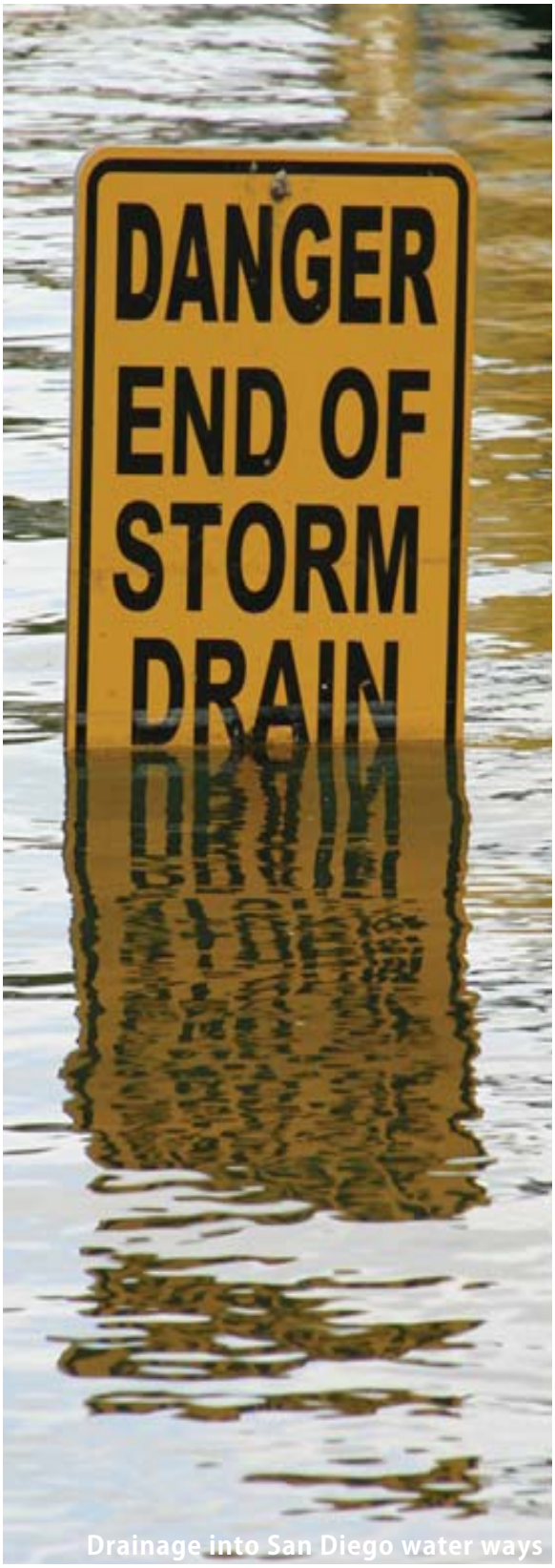
The purpose of building codes and inspection are to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. The Climate Action Plan articulates the increased risks of climate change; the City of San Diego can define specific action in the form of local amendments to the statewide building code to increase building and occupant readiness.

Investing in action now saves lives and provides long term cost savings. As we increase building and occupant resiliency today, we will better able to meet the challenges of a changing climate tomorrow.

San Diego Beaches

Community Education, Knowledge and Collaboration

Building resilience in all of San Diego's diverse communities to projected local climate change impacts such as increasingly intense and frequent wildfires, heat waves and coastal flooding, will require broad engagement and involvement from within City government, with other governments and public agencies, as well as with a broad cross-section of private organizations and residents. The good news is, there are a number of collaborations already underway in the San Diego region to build regional resilience to local climate impacts, which the City can leverage and build on these to actively engage various stakeholders in this effort. In implementing this plan, the City will continue to leverage the expertise and networks of various nonprofits, businesses and resident groups in order to build wider understanding and preparedness for the changes our region is already experiencing today, and will see more of in coming decades.



Drainage into San Diego water ways

FUNDING SUPPORT

This program is partially funded by California utility customers under the auspices of the California Public Utilities Commission and through a Partnership between the City of San Diego and San Diego Gas & Electric®.

United States Department of Energy

Additionally, this material is based on work supported by the Department of Energy under Award Number DE-EE0000877.

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Farmers Market

CITY OF SAN DIEGO

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 37

The City of SAN DIEGO

2019 Climate Action Plan

ANNUAL REPORT

sustainability

sustainability

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Our vision is to be a sustainable and resilient city with opportunity in every community.

City of San Diego Sustainability Department Vision Statement

Letter from the Mayor

In San Diego, "climate action" isn't just a phrase — it's a way of life. We're taking bold action to accomplish our goals and protect the environment for the next generation.

This year, San Diego took the lead in establishing a path to 100% renewable energy with the creation of a new regional entity to purchase clean energy on the open market. With the support of our partner cities, San Diego is now the largest city in the nation to pursue a community choice energy program. Our landmark Climate Action Plan was also the first to set a citywide goal of delivering clean, renewable energy to our residents and businesses.

We removed outdated parking requirements in neighborhoods near mass transit, spurring new development while helping us meet our climate action goals. The Downtown Mobility Plan came to life as we installed bike lanes and scooter corrals so bicyclists, pedestrians and other travelers can navigate city streets safely. We installed solar panels on city buildings to reduce our energy consumption and save millions in taxpayer dollars.

Giving San Diegans and our visitors more choices to move around the city is key to creating thriving, connected communities.

Sustainability is not just the right thing to do, it is the smart thing to do. That's why we are taking action and making informed decisions today to create a better tomorrow.

Sincerely,

Kevin L. Faulconer
Mayor, City of San Diego

City on Track with Action

Local partnerships and regional collaboration are moving climate action forward in San Diego. Since the adoption of the Climate Action Plan (CAP) in 2015, communities and organizations have worked alongside the City on a wide range of initiatives including the development of a groundbreaking climate equity index and educating sustainability ambassadors in Communities of Concern, and providing input on the decision to establish a community choice energy program. **To date, all 17 actions identified in the CAP are in progress or completed.** These collective efforts are the pathway to a more sustainable future for San Diego.

SD sustainability

U.N. SUSTAINABLE DEVELOPMENT GOALS

Cities are key contributors to both national and global climate action. San Diego is working to align our efforts with the broader perspective on sustainability. By linking our local efforts with the globally-adopted United Nations Sustainable Development Goals (SDGs), we localize the universal call to achieve a better and more sustainable future for all. This means making the aspirations of the SDGs a reality for our communities, businesses, households and individuals. To understand how San Diego's actions fit within a global context, the SDGs will be referenced throughout this report by name and icon.

AMERICAN CITIES CLIMATE CHALLENGE

In 2018, San Diego was selected as a **Leadership City for the American Cities Climate Challenge** funded by Bloomberg Philanthropies. This challenge was specifically designed for cities with a demonstrated commitment to achieving the Paris Climate Agreement goals. The Climate Challenge is a two-year acceleration program to advance climate action at the local level by providing 25 cities with resources and technical expertise to deliver high-impact policies and initiatives.

- **Municipal energy efficiency**
- **Increase benchmarking compliance**
- **Municipal on-site solar power generation**
- **Improve biking and walking network**
- **Fleet electrification**
- **Improve mobility choices and reduce driving**

San Diego is focused on achieving these commitments by December 2020 as part of its participation in the American Cities Climate Challenge.

Tracking Greenhouse Gas (GHG) Reductions

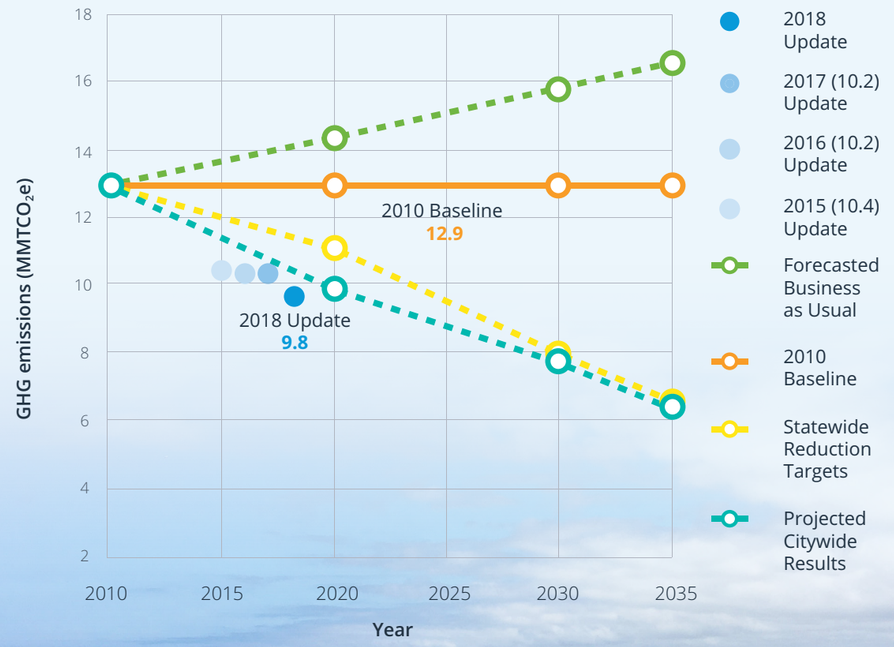
U.N. SUSTAINABLE DEVELOPMENT GOALS

The total GHG emissions from San Diego in 2018 were approximately 9.8 million metric tons CO2e (MMT CO2e).

Overall changes in emissions were primarily driven by two sectors: natural gas and water use. In 2018, natural gas emissions decreased by 12%. Less rain in 2017 and 2018 meant the City imported more water, which led to a 19% increase in emissions in the water category.

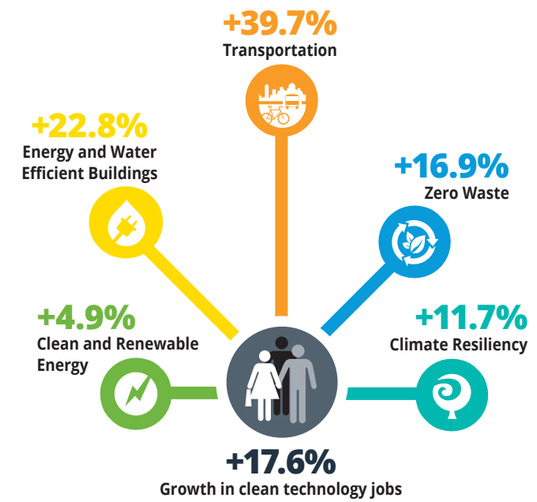
24%
GHG emissions since 2010

Citywide Greenhouse Gas Emissions Inventory



Promoting Job Growth

U.N. SUSTAINABLE DEVELOPMENT GOALS



Estimated total San Diego jobs by CAP sector between 2010 and 2018.

In 2018, job growth in the five CAP-related industry groups continued to rise. Nearly four out of five new jobs are in the Energy and Water Efficient Buildings industry.

San Diego's jobs in these industry groups grew 17.6% from 2010 to 2018.

San Diego maintains concentration of clean technology jobs that is twice the national job concentration.

Advancing Climate Equity

64 homes renovated with energy efficiency upgrades in low-income communities

17 people trained in urban agriculture, solar installation or other green jobs

$2.2 million
Community Development Block Grant (CDBG) funds allocated to sustainability programs in 2018

In September 2019, community members celebrated the re-opening of Memorial Park in Logan Heights.

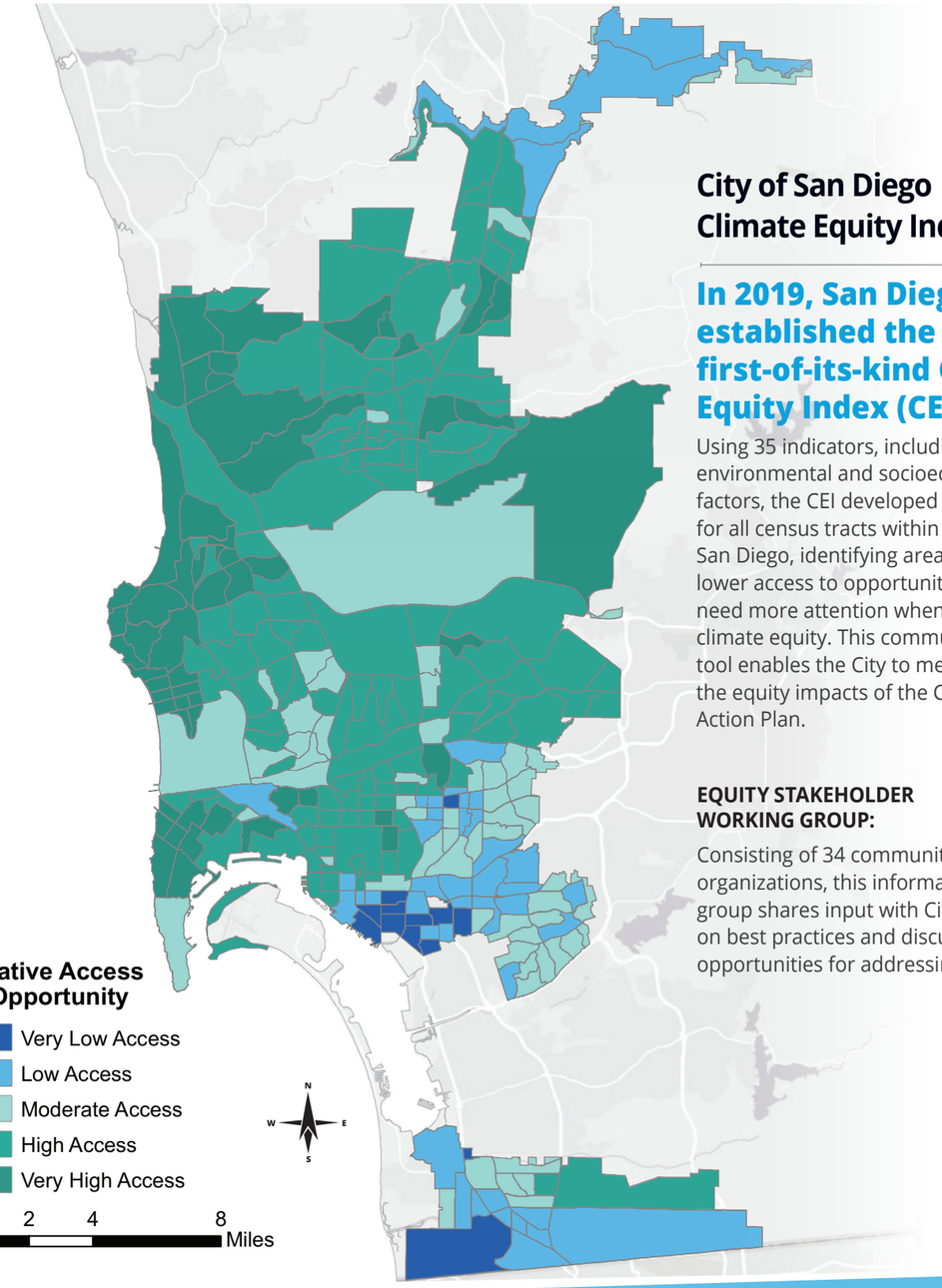
INVESTING IN COMMUNITIES OF CONCERN:

To date, the City of San Diego has invested nearly $757 million on CAP Capital Improvement Program (CIP) projects in Communities of Concern.
This represents 49.6% of all CAP CIP expenses.

U.N. SUSTAINABLE DEVELOPMENT GOALS

3 GOOD HEALTH AND WELL-BEING | 10 REDUCED INEQUALITIES | 17 PARTNERSHIPS FOR THE GOALS

City of San Diego Climate Equity Index



In 2019, San Diego established the nation's first-of-its-kind Climate Equity Index (CEI).

Using 35 indicators, including environmental and socioeconomic factors, the CEI developed a score for all census tracts within the City of San Diego, identifying areas that have lower access to opportunity and will need more attention when addressing climate equity. This community-based tool enables the City to measure the equity impacts of the Climate Action Plan.

EQUITY STAKEHOLDER WORKING GROUP:

Consisting of 34 community organizations, this informal working group shares input with City staff on best practices and discusses opportunities for addressing equity.

Data: Multiple data sources used for 35 indicators. Climate Equity Index scores are averaged across all indicators for each census tract. Energy Policy Initiatives Center, USD 12/09/2019

Strategy 1: Energy and Water Efficiency

PROGRESS

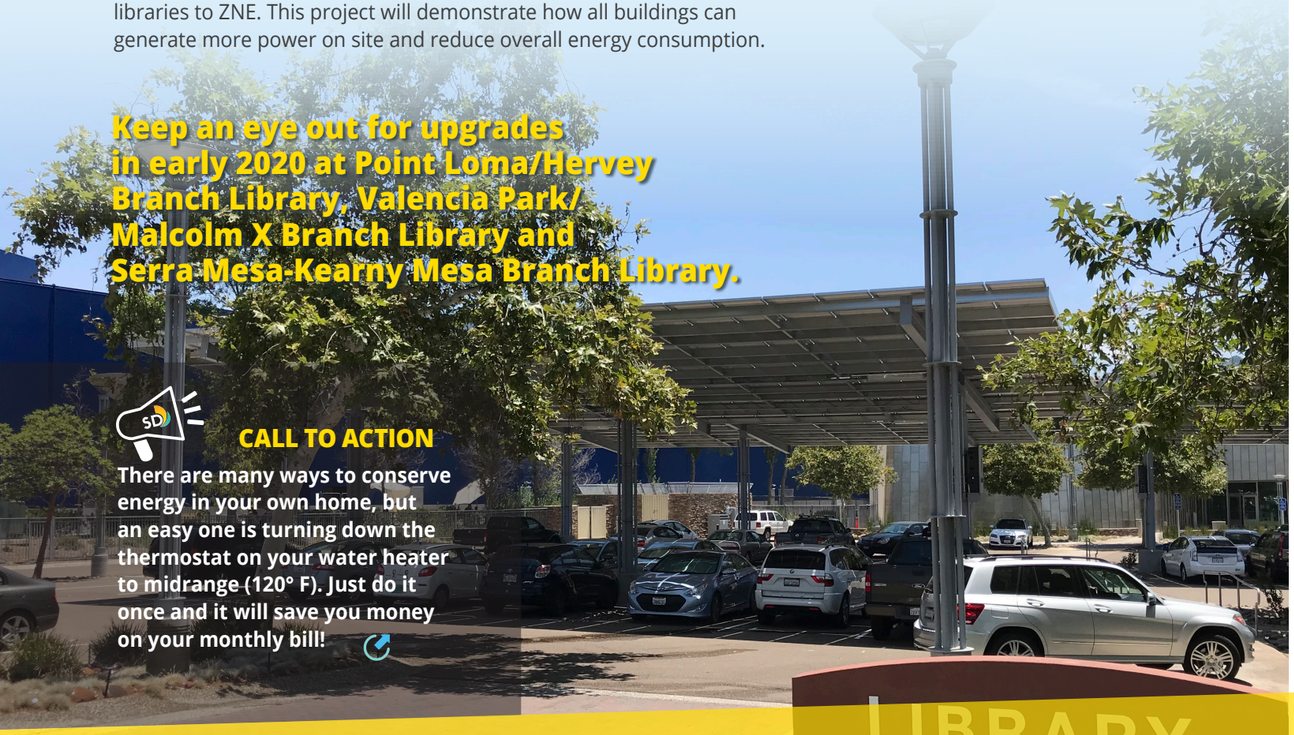
2.5%
reduction in municipal energy use since 2010

15%
reduction in residential energy use since 2010

Per capita water use has decreased
14
gallons per day since 2010

ZERO NET ENERGY DEMONSTRATION PROJECT

Zero net energy (ZNE) is used to describe homes, buildings and communities that generate as much renewable energy as they use. Through a grant from the California Energy Commission, the City of San Diego is working on a multi-year project to upgrade three libraries to ZNE. This project will demonstrate how all buildings can generate more power on site and reduce overall energy consumption.



Keep an eye out for upgrades in early 2020 at Point Loma/Hervey Branch Library, Valencia Park/ Malcolm X Branch Library and Serra Mesa-Kearny Mesa Branch Library.

CALL TO ACTION

There are many ways to conserve energy in your own home, but an easy one is turning down the thermostat on your water heater to midrange (120° F). Just do it once and it will save you money on your monthly bill!

U.N. SUSTAINABLE DEVELOPMENT GOALS

PURE WATER PROJECT

Pure Water San Diego has achieved a significant milestone in using proven water purification technology that cleans recycled water in order to produce safe, high-quality drinking water. In July 2019, the San Diego Regional Water Quality Control Board gave Pure Water conditional acceptance to release highly purified water to surface water reservoirs. This acceptance represents a first under new state regulations and paves the way for other agencies in California and elsewhere in the country to permit similar projects.

WATER CONSERVATION PROGRAMS

A great way to conserve water and reduce runoff is by installing rain barrels at your home. In 2018, **360 residents** took advantage of the City's water-saving rebate programs. Check out the guidelines and find out how you can get a rebate at www.WasteNoWater.org.

1/3
Sustainable Supply

By 2035, Pure Water will provide one-third of San Diego's water supply locally, reducing our reliance on imported water sources.

Strategy 2: Clean and Renewable Energy

U.N. SUSTAINABLE DEVELOPMENT GOALS

PROGRESS

San Diego Community Power launch is key to getting City of San Diego to 100% renewable energy by 2035.

64 electric vehicle charging stations are energized and ready to use. More electric vehicles and 100 hybrid vehicles will be added to the City's public safety fleet in early 2020.

65
CNG waste trucks in operation in 2019

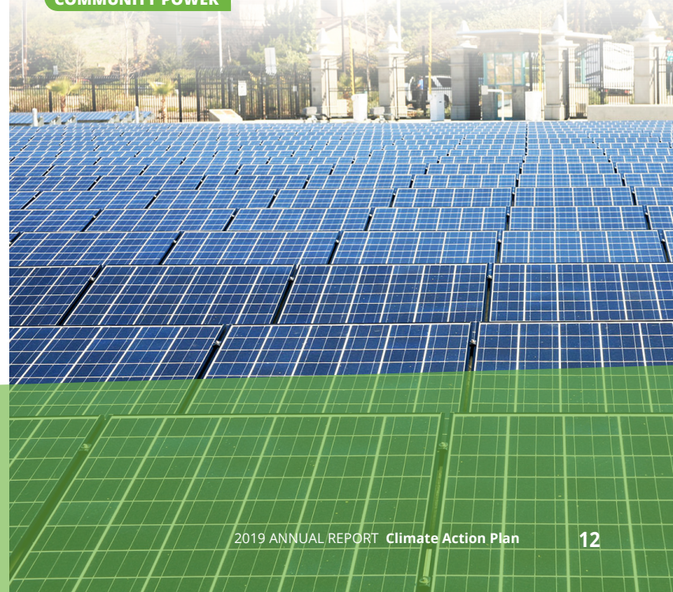
Newly appointed board members took the oath of office at the inaugural meeting of San Diego Community Power at La Mesa City Hall on Oct. 31, 2019.

San Diego is the largest city in the United States to pursue a community choice energy program, setting a new standard for the rest of the country. In partnership with the cities of Chula Vista, La Mesa, Encinitas and Imperial Beach, San Diego will create the second-largest community choice program in California. San Diego Community Power will purchase clean energy on the open market at more competitive rates for residents and businesses. This move will help the City reach its renewable energy goal by 2035, a decade ahead of the state's goal.

> "I am grateful to the City of San Diego for taking a leadership role and working regionally to get this important initiative off the ground. We are in a climate crisis and we need to work together to protect the environment for future generations."
>
> — ENCINITAS MAYOR CATHERINE BLAKESPEAR

CALL TO ACTION

Have you considered investing in home improvements like solar energy, insulated windows or desert-friendly landscaping? It's more affordable than you might think, thanks to the Property Assessed Clean Energy (PACE) program. Unlike personal home equity loans, PACE loans are attached to the property, paid back through your tax bill and are passed along to the next owner when your property is sold.



Strategy 3: Bicycling, Walking, Transit and Land Use

U.N. SUSTAINABLE DEVELOPMENT GOALS

PROGRESS

The City eliminated parking requirements for new multifamily developments within a half-mile of a public transit stop.

8,800 linear feet of sidewalk constructed or improved

52 signals retimed

42 miles of bike lanes added or improved

BIKE LANE INSTALLATIONS

Construction on the first phase of the Downtown Mobility Plan is complete.

The first phase redesigned three streets with protected bike lanes. These new lanes provide a right-of-way designated exclusively for bicycle and scooter travel. The second and third phases of the Downtown Mobility Plan cycle track network will be completed over the next three years.

CALL TO ACTION

Try changing up your commute by biking, walking or taking public transit one day per week.

There are so many ways to get around town while leaving your car at home.

Hop on a bus, take the trolley, bike or walk to where you need to go.

Photo by: Oliver L. Asis

Thousands of people rode bicycles and scooters on Adams Avenue during the CicloSDias open street event on Oct. 27, 2019.

MOBILITY ACTION PLAN

In October 2019, the City released a draft Mobility Action Plan to address changing mobility needs and improve access to opportunities for all San Diegans. The plan builds upon existing policies and programs and outlines priorities, actions and goals for a safe and low greenhouse gas emission transportation future.

The establishment of a Mobility Division is also being considered to work across all departments in the City as a champion for mobility innovation and implementation. The Mobility Division would monitor and report on identified goals, actions and policies.

SAFE STREETS AND SIDEWALKS

In April 2019, the City Council approved regulations for shared mobility devices (SMDs). These regulations are intended to increase safety and provide the City with data to inform future mobility planning and investment. In order to prevent SMDs from being staged on sidewalks, more than 510 parking corrals were added to City streets in neighborhoods with high SMD usage.

MOVE FREE SD

Funded by SANDAG, MoveFreeSD is an educational campaign implemented in partnership with the San Diego County Bicycle Coalition and Circulate San Diego. Through hosting CicloSDias, "transit for fun" events, bike safety classes and walk audits, the

City aims to encourage people to consider walking, bicycling or transit as their preferred form of transportation.

Students of MoveFreeSD's League Certified Instructor training program learn skills to be bicycle ambassadors in their own communities.

Strategy 4: Zero Waste

U.N. SUSTAINABLE DEVELOPMENT GOALS

PROGRESS

65%
of waste is diverted from the landfill

74%
of methane gas captured from the landfill

99.9%
of methane gas captured at the Point Loma Wastewater Treatment Plant

EVOLVING WITH A CHANGING MARKET

Until 2019, the City had a revenue generating contract for processing, transporting and marketing recyclable materials collected from residents. As a result of major policy changes in China, San Diego and other municipalities are no longer expecting to generate revenue from these goods. Going forward, the City's curbside processing contract will cost up to $65 million over the next 10 years. Curbside recycling remains essential to the Climate Action Plan, extending the life of the Miramar Landfill and meeting state requirements for solid waste diversion.

Due to this changing landscape in the solid waste industry, the City is revising the Zero Waste Plan to outline a new path forward, acknowledging the impact of new regulations, recycling infrastructure and fluctuating markets for recyclables.

MIRAMAR GREENERY

San Diego operates one of the largest municipally run composting sites in California. This year, the Greenery installed a covered aerated static pile system. The system can process 20,000 tons of clean organic food waste and 20,000 tons of ground green waste. The addition of an aerated static pile composting system was identified in the city's Zero Waste Plan as one of the key strategies to help increase the City's waste diversion rate to 75%.

CALL TO ACTION

Composting food scraps reduces the amount of trash going to the landfill and helps soil sequester carbon dioxide. Through the Compost Bin Voucher program, residents can receive a discount on a compost bin to get started composting at home. Find out more at www.RecyclingWorks.com.

Strategy 5: Resiliency

U.N. SUSTAINABLE DEVELOPMENT GOALS

PROGRESS

1,089
trees planted

22,856
trees trimmed/ maintained

ARBOR DAY

April 26, 2019 marked the inaugural citywide Arbor Day Event. Nearly **100 native** and drought-tolerant trees were planted by volunteers throughout Balboa Park.

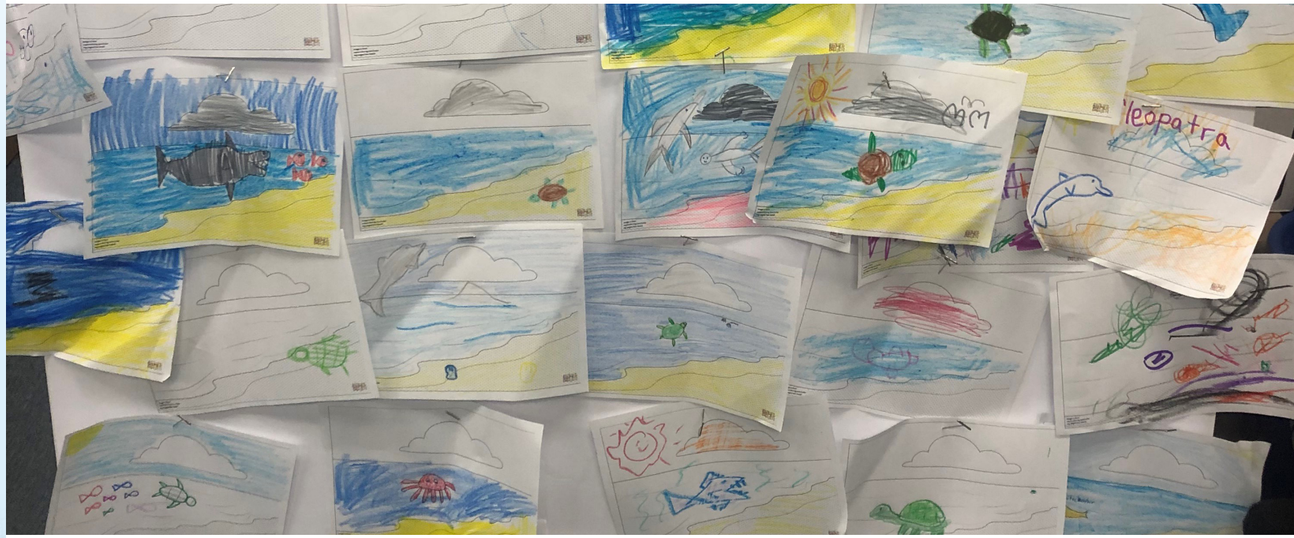
MAINTAINING OUR CANOPY

Pests, diseases and drought are impacting San Diego's urban forest.

To grow our tree canopy, we must maintain and protect existing trees while also focusing on planting new trees.

Tree issues on City property can be reported on the Get It Done app.

When a tree must be removed, staff make sure nothing goes to waste. Trees to Treasures is a program with Friends of Balboa Park that takes downed timber and dead trees and uses the wood to create unique products for sale. Profits are used to plant new trees in Balboa Park.



SEA LEVEL RISE VULNERABILITY ASSESSMENT

Completed in July 2019, this assessment identifies vulnerabilities of City assets and public trust resources to future flooding and erosion. Potential adaptation strategies to address these vulnerabilities are listed in the assessment's report, along with relative costs and timeframes of each measure. This sea level rise vulnerability assessment and future resiliency plans are pivotal steps in planning for climate change impacts in our region.

Looking Forward: Climate Resilient SD

City staff are conducting stakeholder outreach in developing Climate Resilient SD which aims to address the City's vulnerabilities to impacts of climate change and identify potential adaptation measures. Extensive public outreach will be necessary to ensure the plan has input from residents and business owners on potential adaptation strategies.

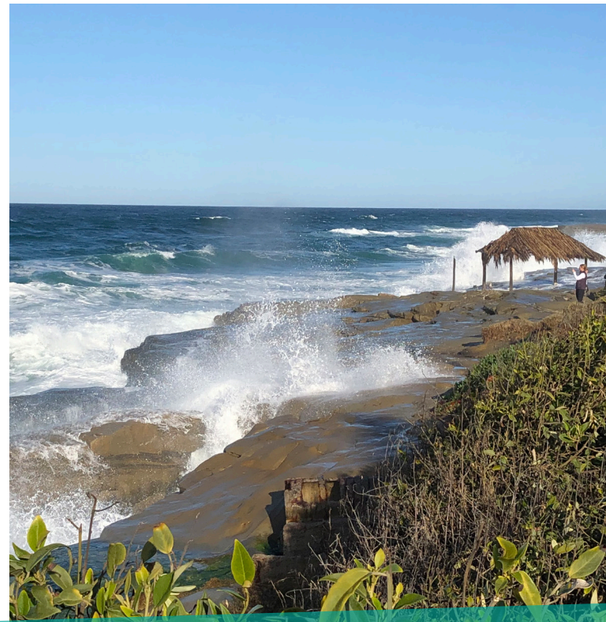
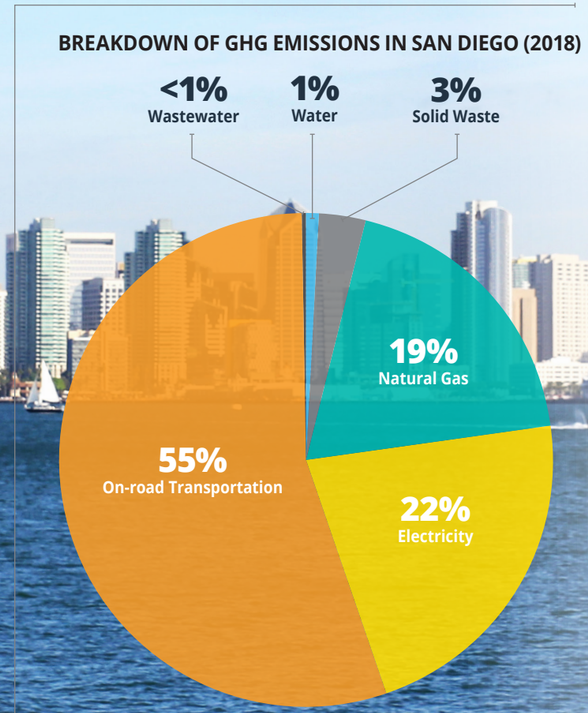


Table of Strategies and Actions



		2010 Baseline	2018	2020 Target	2035 Target
STRATEGY 1	**Reduce residential energy use**	5000 kW, 300 therms	**15%** energy use reduction from baseline in 50% of units	15% energy use reduction from baseline in 20% of units	**15% energy use reduction from baseline in 50% of units**
	Reduce municipal energy use	205 million kW, 3 million therms	**2.5%** reduction from baseline	15% reduction from baseline	**25% reduction from 2020 goal**
	Reduce per capita water use	128 gallons per capita per day (GPCD)	**114** GPCD	117 GPCD	**105 GPCD**
STRATEGY 2	**Achieve 100% renewable energy citywide**	11% renewable energy content	**43%** renewable energy content	N/A	**100% renewable energy content**
	Increase municipal zero-emission vehicles (ZEV)	0% ZEVs in municipal fleet	**87** ZEVs/**69** hybrids municipal fleet (2% ZEV's in municipal fleet)	50% ZEVs in municipal fleet	**90% ZEVs in municipal fleet**
	Convert to compressed natural gas (CNG) waste trucks	0% CNG waste trucks in operation	**29%** of waste trucks in operation are CNG	N/A	**100% CNG waste trucks in operation**
STRATEGY 3	**Increase use of mass transit**	4% commuter transit modeshare	**8%** commuter transit modeshare[1]	12% commuter transit modeshare	**25% commuter transit modeshare**
	Increase commuter walking opportunities	3.5% pedestrian commuter modeshare	**3%** pedestrian commuter modeshare[1]	4% pedestrian commuter modeshare	**7% pedestrian commuter modeshare**
	Increase commuter bicycling opportunities	2% bicyclist commuter modeshare	**2%** bicyclist commuter modeshare[1]	6% bicyclist commuter modeshare	**18% bicyclist commuter modeshare**
	Retime traffic signals and install roundabouts	40 traffic signals per year, 0 roundabouts	**52** signals retimed, **0** roundabouts	200 traffic signals retimed, 15 roundabouts installed	**35 roundabouts installed**
	Reduce vehicle miles traveled	25 miles per day commute distance	**20** miles per day commute distance[1]	N/A	**23 miles per day commute distance**
STRATEGY 4	**Divert solid waste**	52% diversion rate	**65%** diversion rate	75% diversion rate	**90% diversion rate**
	Methane capture from the landfill	75% of gas captured from the landfill	**74%** of gas captured from the landfill	80% of gas captured from the landfill	**90% of gas captured from the landfill**
	Methane capture from wastewater treatment	71% of gas captured from the wastewater treatment facility	**99.9%** of gas captured from the wastewater treatment facility	N/A	**98% of gas captures from the wastewater treatment facility**
STRATEGY 5	**Increase urban tree canopy cover**	7% tree canopy cover citywide	**13%** tree canopy cover citywide	15% tree canopy cover citywide	**35% tree canopy cover citywide**

1 Modeshares for transit, bicycling and walking as well as average commute distance have been modeled using best available data and the most up to date methodologies. CY2017 data was developed using the current SANDAG Series 13 activity-based model; baseline data CY2010 was developed utilizing the SANDAG Series 12 four-step model. The City of San Diego gathered additional modeshare data through a commuter survey which is described in more detail on Page 6 of this report. Numbers have been rounded. More information can be found in the Appendix to the 2019 CAP Annual Report (www.SanDiego.gov/sustainability).

Working with Communities

U.N. SUSTAINABLE DEVELOPMENT GOALS

CITY HEIGHTS COMMUNITY DEVELOPMENT PARTNERSHIP

In August 2019, the City partnered with City Heights Community Development Corporation for Transit & Tacos at Fair@44. Attendees shared their thoughts on our region's transportation system.

PARTNERS FOR PLACES

The City of San Diego is working with I Am My Brothers Keeper, GRID Alternatives, the San Diego Foundation, Climate Action Campaign and the Center for Sustainable Energy to ensure that the benefits of work related to the Climate Action Plan are shared with the communities who need it the most. The Partners for Places Project will engage communities in Southeast San Diego through a Climate Ambassadors for Environmental Justice educational program and energy efficiency analysis specific to mobile home parks.

The San Diego Foundation Growing a Vibrant Region · GRID ALTERNATIVES · I Am My Brother's Keeper · CITY HEIGHTS COMMUNITY DEVELOPMENT · Center for Sustainable Energy · CLIMATE ACTION CAMPAIGN

Letter from Chief Sustainability Officer

Our climate is changing. As Chief Sustainability Officer for the City of San Diego, it is my mission to ensure we take bold steps to enhance our quality of life, improve the health of our environment, increase opportunities for all of our communities, build a more resilient economy and ensure we create a city where future generations will prosper.

The cities of San Diego, Chula Vista, La Mesa, Encinitas and Imperial Beach made the choice to put the future of energy into the hands of the communities they represent while setting a path forward to 100% renewable energy through the formation of San Diego Community Power. Together, we will make choices in how to meet the energy needs of our communities and see more localized benefits and opportunities from power generation and conservation efforts.

We are working to be more connected to our citizens than ever before, bringing more opportunity for San Diegans to participate in solutions to this global problem, and benefit from implementation of the Climate Action Plan. I'm especially proud of my team in the Sustainability Department and all of the public servants who are working hard to help the City walk the walk. We are doing exciting things, from bringing more renewable energy and advanced efficiency projects, to establishing a first-of-its-kind climate equity index and establishing measurable indicators of environmental justice.

San Diego is demonstrating to the world that we can be a resilient, thriving city in an uncertain climate. Together, as a community, we will create a city of the future.

Sincerely,

Cody Hooven

sustainability

For more information or data, please see the 2019 Climate Action Plan Annual Report Appendix or visit **www.sandiego.gov/sustainability**.

This information is available in alternative formats upon request.

This report was partially funded by California utility ratepayers under the auspices of the California Public Utilities Commission.

Printed on recycled paper (12-2019)

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 38

SUSTAINABILITY

SUSTAINABLE COMMUNITIES STRATEGY (SCS) BACKGROUND DOCUMENTATION

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

2016 2040 RTPSCS

APPENDIX

ADOPTED | ARRIL 2016

GREATER RESPONSIVENESS TO DEMOGRAPHICS AND THE CHANGING HOUSING MARKET

There is little question that the demographic profile of Southern California is changing, resulting in different housing and transportation needs. The traditional suburban development pattern that characterizes most of the region is still appropriate for many residents and homeowners, but the increasing demand for small-lot and multifamily housing, walkable and bikeable environments and shorter commutes calls for more varied housing options located in more compact developments.

The RTP/SCS responds to this emerging need through an overall development type pattern that focuses new housing growth in urban centers served by various transportation options, including high-quality transit and active transportation. About 70 percent of this new housing will be multifamily units.

While a majority of the new housing will be multi-family units as part of the RTP/SCS, the percentage of multifamily and single-family will not change drastically when compared with the existing housing stock. The housing stock split between single-family and multifamily is currently 55 percent single-family and 45 percent multi-family in the SCAG region. At the end state of the RTP/SCS (Year 2040), the housing stock split is projected to be 50 percent single-family and 50 percent multi-family. This small change in housing stock split is due to the majority of the existing homes in the SCAG region being single-family.

SB 375 AND GREENHOUSE GAS EMISSION TARGETS SET BY THE STATE

As previously noted, SB 375 requires SCAG to develop a Sustainable Communities Strategy to reduce per capita greenhouse gas emissions through integrated transportation, land use, housing, and environmental planning. Pursuant to SB 375, ARB set per capita greenhouse gas emission reduction targets from passenger vehicles for each of the state's 18 MPOs. For the SCAG region, the targets are set at eight percent below 2005 per capita emissions levels by 2020 and 13 percent below 2005 per capita emissions levels by 2035. Though ARB has not adjusted SCAG's regional targets since the 2012 RTP/SCS, SCAG anticipates the region's targets may change, considering Governor Brown's recent Executive Order (B-30-15) that establishes a California greenhouse gas reduction target of 40 percent below 1990 levels by 2030. Because the transportation sector is the largest contributor to California's greenhouse gas emissions (more than 36 percent), SCAG anticipates updated and more stringent regional greenhouse gas emissions goals are forthcoming. The 2016 RTP/SCS achieves per capita greenhouse gas emissions reductions relative to 2005 of eight percent (8 percent) in 2020, and 18 percent in 2035.

CEQA EXEMPTION CRITERIA

SB 375 amends CEQA to add Chapter 4.2 Implementation of the Sustainable Communities Strategy, which allows for CEQA exemption for certain projects, as well as reduced CEQA analysis. Lead agencies (including local jurisdictions) maintain the discretion and will be solely responsible for determining consistency of any future project with the 2016 RTP/SCS. Cities and counties maintain their existing authority over local planning and land use decisions, including discretion in certifying the environmental review for a project, regardless of eligibility for streamlining. SCAG staff may provide a lead agency at the time of its request readily available data and documentation to help support its finding upon request. In addition to a project's consistency with the 2016 RTP/SCS, below are additional criteria for CEQA streamlining eligibility.

TYPES OF CEQA STREAMLINING

CEQA EXEMPTION

A full CEQA exemption is proposed to provide for a special class of Transit Priority Project (TPP) determined to be a Sustainable Communities Project (SCP) (California Public Resources Code 21155.1 (a)). As a threshold matter, to qualify as a TPP, a project must be consistent with the general use designation, density, building intensity and applicable policies in an approved SCS or APS. The TPP must also:

- Be at least 50 percent residential use based on area;
- Be at least 20 units/acre; and
- Be within ½ mile of a major transit stop or high-quality transit corridor included in the RTP/SCS (a high-quality transit corridor is defined as one with 15-minute frequencies during peak commute hours)

Consequently, a Sustainable Communities Project (SCP) is a TPP that is consistent with the SCS or APS and meets additional criteria including numerous land use and environmental standards, such as being 15 percent more efficient than Title 24 standards and using 25 percent less water than the regional average household. In addition, the site cannot be more than eight acres or contain more than 200 units. The proposed project must be located within one half mile of rail transit station or ferry terminal included in RTP/SCS or a quarter mile from a high quality transit corridor. Lastly, the project must meet additional requirements for the provision of affordable housing and open space. After a public hearing where a legislative body finds that a TPP meets all the requirements, a project can be declared to be an SCP and be exempted from CEQA.

Sustainable Communities Environmental Assessment (SCEA)/Limited EIR CEQA relief is provided for TPPs that incorporate all feasible mitigation measures, performance standards,

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 39

ATTACHMENT E

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold

October 2008

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Planning, Rule Development and Area Sources
Elaine Chang, DrPH

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SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
GOVERNING BOARD

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Speaker of the Assembly Appointee

Vice Chairman: S. ROY WILSON, Ed.D.
Supervisor, Fourth District
County of Riverside

MEMBERS

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MICHAEL A. CACCIOTTI
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MIGUEL A. PULIDO
Mayor, City of Santa Ana
Cities of Orange County

TONIA REYES URANGA
Councilmember, City of Long Beach
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Cities of San Bernardino County

EXECUTIVE OFFICER

BARRY WALLERSTEIN, D. Env.

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P R E F A C E

This Draft *Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* document contains the proposed interim GHG significance threshold, rationale for developing the threshold, and details of the working group meetings and represents a work-in-progress of staff's efforts to date. This document will be updated as more information becomes available. For the staff recommendation to the Governing Board at the December 5, 2008 public hearing, please refer to Attachment A of Agenda Item Number 31.

Finally, to facilitate identifying changes to this Guidance Document since its release in October 2008, added text is underlined and deleted text is denoted with ~~strikethrough~~ text.

LIST OF ACRONYMS AND ABBREVIATIONS

List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
AB 32	Assembly Bill 32 Global Warming Solutions Act of 2006
AER	Annual Emission Reporting
AG	Attorney General
ARB	Air Resources Board
BACT	Best Available Control Technology
BARCT	Best Available Retrofit Control Technology
BAU	Business as Usual
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resource Board
CAT	Climate Action Team
CCAR	California Climate Action Registry
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CPUC	California Public Utilities Commission
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
FY	Fiscal Year
GHG	Greenhouse Gas
GGRP	Greenhouse Gas Reduction Plan
GP	General Plan
GWP	Global Warming Potential
IGR	Intergovernmental Review
IPCC	International Panel on Climate Change
ITE	Institute of Transportation Engineers
km	Kilometer
LNG	Liquefied Natural Gas
MMBTU	Million British Thermal Units
MND	Mitigated Negative Declaration
MMT CO_2e	Million Metric Tons Carbon Dioxide Equivalent
MW	Megawatts
N_2O	Nitrous Oxide
ND	Negative Declaration
NO_X	Oxides of Nitrogen
OPR	State Office of Planning and Research
PFC	Perfluorocarbon

List of Acronyms and Abbreviations (Concluded)

Acronym/ Abbreviation	Definition
PM	Particulate Mater
ROG	Reactive Organic Gas
RPS	Renewable Portfolio Standards
S-3-05	Executive Order S-3-05
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SOx	Sulfur Oxides
TAC	Toxic Air Contaminants
URBEMIS	Urban Emissions Model
VMT	Vehicle Miles Traveled

CHAPTER 1

INTRODUCTION AND EXECUTIVE SUMMARY

Introduction
Purpose of This Guidance Document
California Environmental Quality Act and GHGs
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INTRODUCTION

The California Environmental Quality Act (CEQA) requires public agencies in California to analyze potential adverse impacts for proposed projects undertaken by a public agency, funded by a public agency, and requiring discretionary approval by a public agency. The fundamental purposes of CEQA are to inform governmental decision-makers and the public about the significant environmental effects of proposed activities, identify ways to avoid or significantly reduce environmental damage, use feasible alternatives or mitigation measures to avoid significant damage, and disclose to the public why a governmental agency approved a project if significant effects are involved (CEQA Guidelines §15002[a]). To disclose potential adverse impacts from a proposed project, pursuant to CEQA lead agencies typically prepare multidisciplinary environmental impact analysis and make decisions based on the analysis regarding the environmental effects of the proposed project (CEQA Guidelines §15002[a]).

In the past, air quality analyses tended to focus on potential adverse impacts from criteria pollutants and toxic air contaminants. Subsequent to the adoption of Assembly Bill (AB) 32 – The California Global Warming Solutions Act of 2006, lead agencies have increasingly faced legal challenges to their CEQA documents for failure to analyze greenhouse gases (GHGs) or making a determination of significance regarding GHG emission impacts.

Greenhouse gases are those gases that have the ability to trap heat in the atmosphere, a process that is analogous to the way a greenhouse traps heat. GHGs may be emitted as a result of human activities as well as through natural processes. As a result of human activities, such as electricity production, vehicle use, etc., GHGs have been accumulating in the earth's atmosphere at a faster rate than has occurred historically, i.e., prior to the Industrial Age starting approximately 150 years ago. Increasing GHG concentrations in the atmosphere are leading to global climate change.

The Intergovernmental Panel on Climate Change (IPCC) provided the first unequivocal evidence that global climate temperatures are increasing (2007a). Further, the primary driver of global climate change is increased emissions of GHGs due to human activities. According to the IPCC, there is very high confidence, based on more evidence from a wider range of species, that recent warming is strongly affecting terrestrial, marine, freshwater biological systems.

Carbon dioxide (CO2) is the most important anthropogenic GHG because it comprises the majority of total GHG emissions emitted per year and it is very long-lived in the atmosphere. Annual emissions of CO2 have increased approximately 80 percent between 1970 and 2004. In addition to CO2, other GHG pollutants emitted directly as a result of human activities include methane (CH4), nitrous oxide (N2O) and halocarbons (a group of gases containing fluorine, chlorine or bromine). Without changes in current climate change mitigation policies and related sustainable

development practices, GHG emissions and global climate temperatures will continue to increase.

To prevent or minimize further increases in global temperatures resulting from increases in GHG emissions due to human activities, it is necessary to stabilize the concentration of GHGs in the atmosphere. Stabilizing GHGs in the atmosphere can only occur through reducing GHG emissions. Without further reductions in GHGs, increased global temperatures will surpass humans' and ecosystems' ability to adapt to these changing conditions (IPCC, 2007b).

In response to the increasing body of evidence that GHGs will continue to affect global climate, Governor Schwarzenegger issued executive order (EO S-3-05), which established the following greenhouse gas emission reduction targets for California: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels.

Subsequent to the Governor's issuance of EO S-3-05, the California State Legislature adopted Assembly Bill (AB) 32 – The California Global Warming Solutions Act of 2006. With the adoption of AB 32, the California State Legislature recognized the growing concern regarding changes to global climate resulting from increasing emissions of greenhouse gases (GHGs). AB 32 establishes a cap on statewide greenhouse gas emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emissions levels. Specifically, (AB 32) recognizes the serious threat to the "economic wellbeing, public health, natural resources, and the environment of California" that results from global warming. Consequently, AB 32 mandates a significant reduction in GHGs in order to contribute to efforts to stabilize atmospheric concentrations of GHGs. Under AB 32, greenhouse gases are defined as: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

In general, there is currently an absence of regulatory guidance with regard to analyzing GHG emission impacts in CEQA documents. Similarly, no public agency in California has formally adopted GHG significance thresholds. Recognizing the absence of guidance regarding analyzing and determining the significance of GHGs, the California Air Pollution Control Officers Association (CAPCOA) prepared a White Paper reviewing policy choices, analytical tools, and mitigation strategies for GHGs. In particular, the White Paper identifies a number of options for establishing GHG significance thresholds, but makes no formal recommendation of one approach over another.

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigations for potentially significant impacts. Although districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues.

Because of its expertise in establishing air quality analysis methodologies and comprehensive efforts to establish regional and localized significance thresholds for criteria pollutants, local public agencies have asked South Coast Air Quality Management District (SCAQMD) for guidance in quantifying GHG impacts and recommending GHG significance thresholds to assist them with determining whether or not GHG impacts in their CEQA documents are significant. As a result, SCAQMD staff has received requests from a number of public agencies and other stakeholders to provide guidance on analyzing GHG impacts and establishing a GHG significance threshold. In response to these requests from the various stakeholders, SCAQMD established a stakeholder working group to receive input on establishing a GHG significance threshold. In the meantime, SCAQMD staff has joined many other stakeholders urging CARB to establish a statewide threshold for GHGs. In the absence of a statewide threshold, SCAQMD staff will recommend its interim approach to the Governing Board for consideration and it will also become the SCAQMD's input to the statewide process.

PURPOSE OF THIS GUIDANCE DOCUMENT

The purpose of this Guidance Document, therefore, is to provide information on GHG legislation relative to CEQA, a brief summary of the Working Group process, development of the resulting staff-recommended interim GHG significance threshold proposal, and how to use it. This Guidance Document also provides information on the SCAQMD's authority to establish a GHG significance threshold pursuant to CEQA and some background information on GHGs and global climate change. This Guidance Document also discusses future efforts to further refine the interim GHG significance threshold as necessary, includes recommendations for analyzing GHG impacts using current modeling tools, and describes measures to mitigate GHG emission impacts.

CALIFORNIA ENVIRONMENTAL QUALITY ACT AND GHGS

- California Attorney General's Office

Subsequent to adopting AB 32, the California Attorney General's Office determined that GHG emissions contributing to global climate change also contribute to potential adverse environmental impacts that should be evaluated pursuant to the California Environmental Quality Act (CEQA). The Attorney General's Office has submitted numerous comment letters to lead agencies on their CEQA documents for failure to analyze GHG emissions, failure to make a significance determination, and failure to implement feasible mitigation measures to reduce GHG emissions to the maximum extent feasible.

For example, the California Attorney General, on behalf of the people of California, filed a legal challenge against the County of San Bernardino for failure to analyze "reasonably foreseeable" GHG emissions in the CEQA document prepared for its

General Plan update. The County reached a settlement with the Attorney General by committing to developing a GHG inventory and a plan for reducing GHGs.

Similarly, the California Attorney General submitted comments on the CEQA document for a refinery in northern California. Although GHG emissions were quantified, the Attorney General cited the failure of the lead agency to make a determination of significance relative to GHG emissions stating, "[E]ven if there is no established threshold in law or regulation, lead agencies are obligated by CEQA to determine significance. Neither CEQA, nor the regulations, authorize reliance on the lack of an agency-adopted standard as the basis for determining that a project's potential cumulative impact is not significant." In other words, the absence of a threshold does not in any way relieve lead agencies of their obligations to address GHG emissions from projects under CEQA. By not concluding whether or not a project is significant, the lead agency may be avoiding its responsibility to implement GHG mitigation measures.

- Senate Bill (SB) 97 – CEQA: Greenhouse Gas Emissions

In August 2007, Governor Schwarzenegger signed into law Senate Bill (SB) 97 – CEQA: Greenhouse Gas Emissions stating, "This bill advances a coordinated policy for reducing greenhouse gas emissions by directing the Office of Planning and Research (OPR) and the Resources Agency to develop CEQA guidelines on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions." Specifically, SB 97 requires OPR, by July 1, 2009, to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions, as required by CEQA, including, but not limited to, effects associated with transportation or energy consumption. The Resources Agency would be required to certify and adopt those guidelines by January 1, 2010. OPR would be required to periodically update the guidelines to incorporate new information or criteria established by the State Air Resources Board pursuant to the California Global Warming Solutions Act of 2006. SB 97 also identifies a limited number of types of projects that would be exempt under CEQA from analyzing GHG emissions. Finally, the legislation will be repealed on January 1, 2010.

- Office of Planning and Research Technical Advisory

Consistent with SB 97, on June 19, 2008, OPR released its *Technical Advisory on CEQA and Climate Change*, which was developed in cooperation with the Resources Agency, the California Environmental Protection Agency (Cal/EPA), and the California Air Resources Board (CARB). According to OPR, the *Technical Advisory* offers the informal interim guidance regarding the steps lead agencies should take to address climate change in their CEQA documents, until CEQA guidelines are developed pursuant to SB 97 on how state and local agencies should analyze, and when necessary, mitigate greenhouse gas emissions.

According to OPR, lead agencies should determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by

type and source. Second, the lead agency must assess whether those emissions are individually or cumulatively significant. When assessing whether a project's effects on climate change are "cumulatively considerable" even though its GHG contribution may be individually limited, the lead agency must consider the impact of the project when viewed in connection with the effects of past, current, and probable future projects. Finally, if the lead agency determines that the GHG emissions from the project as proposed are potentially significant, it must investigate and implement ways to avoid, reduce, or otherwise mitigate the impacts of those emissions.

- SB 375 (Steinberg) Transportation, Land Use, and the California Environmental Quality Act (CEQA)

On September 30, 2008, Governor Schwarzenegger signed into law SB 375 (Steinberg). SB 375 focuses on housing and transportation planning decisions to reduce fossil fuel consumption and conserve farmlands and habitat. This legislation is important to achieving AB 32 goals because greenhouse gas emissions associated with land use, which includes transportation, are the single largest sector of emissions in California. Further, SB 375 provides a path for better planning by providing incentives to locate housing developments closer to where people work and go to school, allowing them to reduce vehicle miles traveled (VMT) every year. The following bullet points summarize some of the main provisions of the bill.

- Require the regional governing bodies in each of the state's major metropolitan areas to adopt, as part of their regional transportation plan, a "sustainable community strategy" that will meet the region's target for reducing GHG emissions. These strategies would get people out of their cars by promoting smart growth principles such as: development near public transit; projects that include a mix of residential and commercial use; and projects that include affordable housing to help reduce new housing developments in outlying areas with cheaper land and reduce vehicle miles traveled (VMT).

- Create incentives for implementing the sustainable community strategies by allocating federal transportation funds only to projects that are consistent with the emissions reductions.

- Provide various forms of CEQA relief by allowing projects that are shown to conform to the preferred sustainable community strategy through the local general plans (and therefore contribute to GHG reduction) to have a more streamlined environmental review process. Specifically, SB 375 will change CEQA in two ways:

  - If a development is consistent with the sustainable community's strategy and incorporates any mitigation measures required by a prior EIR, then the environmental review does not have to consider: a) growth-inducing impacts, or b) project-specific or cumulative impacts from cars on global warming or the regional transportation network.

- A narrowly-defined group of "transit priority projects" will be exempt from CEQA review.

LEGAL AUTHORITY

CEQA Guidelines §15022(a) states that a public agency shall adopt objectives, criteria, and specific procedures consistent with CEQA and these [State] Guidelines for administering its responsibilities under CEQA. CEQA Guidelines §15022(d) states further, "In adopting procedures to implement CEQA, a public agency may adopt the State CEQA Guidelines through incorporation by reference. The agency may then adopt only those specific procedures or provisions described in subsection [15022] (a) which are necessary to tailor the general provisions of the guidelines to the specific operations of the agency." At the December 11, 1998 Public Hearing the SCAQMD's Governing Board formally incorporated by reference the State CEQA Guidelines as the implementing guidelines for the SCAQMD's CEQA program. Adopting GHG significance thresholds would be consistent with CEQA Guidelines §15022 provision to tailor a public agency's implementing guidelines by adopting criteria relative to the specific operations of the SCAQMD.

Specifically with regard to thresholds of significance, CEQA Guidelines §15064.7(a) states, "Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects." Subsection (b) of the same section states further, "Thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule or regulation, and developed through a public review process and be supported by substantial evidence." Staff's recommended GHG significance threshold has undergone a public review process as part of stakeholder working group meetings that are open to the public. This Guidance Document provides the substantial evidence relative to the methodology for developing the interim GHG significance threshold. After completion of the public process, the proposed interim GHG significance threshold will be brought to the SCAQMD's Governing Board at a public meeting, where it will be considered for adoption by resolution, consistent with CEQA Guidelines §15064.7(b). Staff's proposed interim GHG significance threshold is a recommendation only for lead agencies and not a mandatory requirement. The GHG significance threshold may be used at the discretion of the local lead agency. However, if adopted the SCAQMD will use the interim GHG significance threshold for projects where it is the lead agency.

- Considerations When Establishing Significance Thresholds

No significance thresholds for GHG emissions have been developed, adopted, or endorsed statewide or at the local level[1]. Air districts have primary authority under

[1] In response to comments submitted by the Attorney General's Office on a dairy project, the San Joaquin Valley Air Pollution Control District (SJVAPCD) identified a significance threshold of 38,477 metric tons of

state law for "control of air pollution from all sources, other than emissions from motor vehicles" (H&SC §40000). The term air contaminant or "air pollutant" is defined extremely broadly, to mean "any discharge, release, or other propagation into the atmosphere" and includes, but is not limited to, soot, carbon, fumes, gases, particulate matter, etc. Greenhouse gases and other global warming pollutants such as black carbon would certainly be included in this definition. The U.S. Supreme Court held in Massachusetts v. EPA 549 U.S. 497 (2009) that greenhouse gases were clearly within the Federal Clean Air Act's broad definition of air pollutants. Therefore, air districts have the authority to regulate global warming pollutants primarily from non-vehicular sources, while pursuant to AB 32 CARB has authority over a wide range of sources, including vehicular sources.

Appendix G of the CEQA Guidelines provides a checklist of suggested environmental topics that should be addressed in a CEQA document. Questions under each environmental topic area are designed to elicit information on whether a project has the potential to generate significant adverse environmental impacts to that environmental topic area. However, neither the CEQA statutes nor the implementing Guidelines discuss or identify thresholds of significance or particular methodologies for performing an impact analysis. These tasks are left to a lead agency's judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable.

The determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data. An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting. For example, an activity which may not be significant in an urban area may be significant in a rural area (CEQA Guidelines §15064(b)). Further, in evaluating the significance of the environmental effect of a project, the Lead Agency shall consider direct physical changes in the environment which may be caused by the project and reasonably foreseeable indirect physical changes in the environment which may be caused by the project (§15064(d)). Significance conclusions must be based on substantial evidence, which includes facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines §15064(f)(5)).

Each public agency is encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is essentially a regulatory standard or set of criteria that represent the level at which a lead agency finds a particular environmental effect of a project to be significant. Specifically, a threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect, non-compliance with which means the effect will normally be determined to be significant

carbon dioxide equivalent per year (MT CO2eq./yr). According to SJVAPCD staff, the agency currently has no plans to formally adopt this significance threshold through a public process.

by the agency and compliance with which means the effect normally will be determined to be less than significant (§15064.7(a)).

Even in the absence of clearly defined significance thresholds for GHG emissions, the California Attorney General has advised that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact.

CONTENTS OF THIS GUIDANCE DOCUMENT

The following subsections provide brief summaries of the chapters contained in this guidance document.

- **Summaries of Chapter 1**

Chapter 1 is the introductory chapter of this document that contains general background information on GHGs and the determination that GHGs must be analyzed in CEQA documents. There is also information on CEQA legislation related to GHGs and global climate change. Finally, the chapter contains information on the legal authority that allows the SCAQMD to adopt significance thresholds for the purpose of determining the severity of impacts analyzed in CEQA documents

- **Summaries of Chapter 2**

Chapter 2 contains more detailed background information on GHG emissions relative to global climate change, both internationally and nationally. This chapter also provides more detailed information on legislation to reduce GHG house gas emissions, e.g., Assembly Bill 32 – the Global Warming Solutions Act of 2006, etc. Finally, Chapter 2 contains information on early guidance on evaluating GHG emissions in CEQA documents.

- **Summaries of Chapter 3**

Chapter 3 contains information on the working group established by the SCAQMD to provide feedback to staff on the development of an interim GHG significance threshold. The chapter also includes discussions on considerations in establishing an interim GHG significance threshold and describes the current staff proposal for an interim GHG significance threshold.

- **Summaries of Chapter 4**

Chapter 4 contains general recommendations for analyzing GHG emissions in CEQA documents.

- Summaries of Chapter 5

In Chapter 5 it is assumed that the SCAQMD Governing Board will adopt staff's proposed interim GHG significance threshold. Therefore, this chapter discusses future action items, including outreach to interested stakeholders, compiling lists of applicable GHG design features and mitigation measures, and periodic review and update, as necessary of the interim GHG significance threshold.

CHAPTER 2

BACKGROUND INFORMATION ON GHGS

General Background Information

Legislative Background – California

Initial Guidance on Evaluating GHGs Pursuant to CEQA

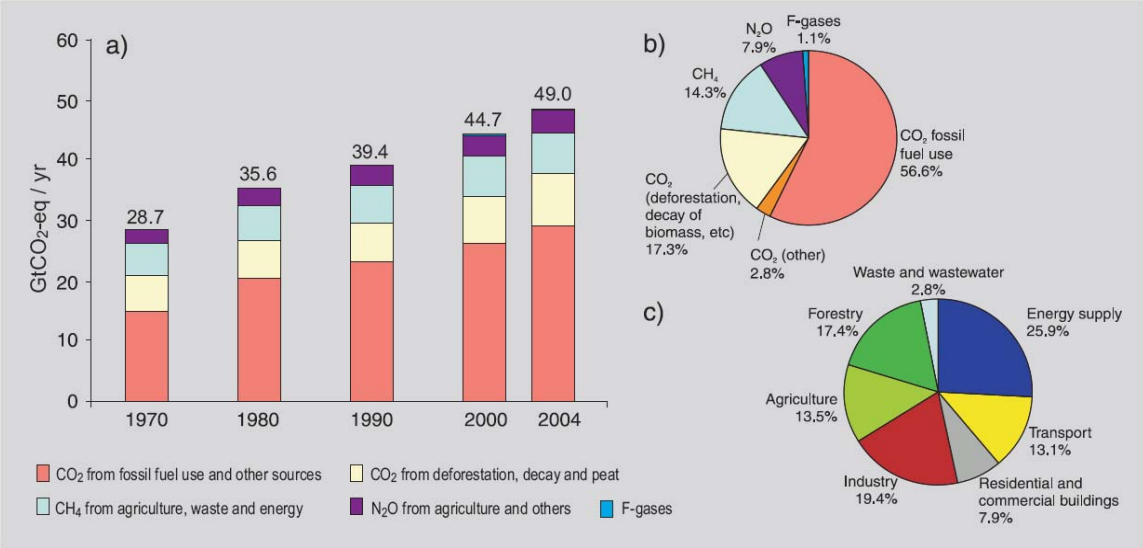
GENERAL BACKGROUND INFORMATION ON GHGS

- Intergovernmental Panel on Climate Change

In the last few years information and data have been compiled that demonstrate unequivocally that increases in average global air and ocean temperatures are occurring (IPCC, 2007a). For example, 11 of the last 12 years (1995-2006) rank among the 12 warmest years in the instrumental record of global surface temperature (since 1850). The temperature increase is widespread over the globe and is greater at higher northern latitudes. Further, increases in sea level are consistent with global warming. For example, global average sea level rose at an average rate of 1.8 [1.3 to 2.3]mm per year over 1961 to 2003 and at an average rate of about 3.1 [2.4 to 3.8]mm per year from 1993 to 2003. According to the IPCC (2007b), there is very high confidence, based on more evidence from a wider range of species, that recent warming is strongly affecting terrestrial, marine, and freshwater biological systems.

One of the major drivers in global climate change has been directly linked to the increase in greenhouse gas (GHG) emissions due to human activities worldwide (Figure 2-1). Carbon dioxide (CO2) is the most important anthropogenic GHG. Annual CO2 emissions have increased approximately 80 percent between 1970 and 2004 (IPCC, 2007b)

Figure 2-1
Global Anthropogenic GHG Emissions



Source – IPCC, 2007b: (a) Global annual emissions of anthropogenic GHGs from 1970 to 2004.5 (b) Share of different anthropogenic GHGs in total emissions in 2004 in terms of CO2-eq. (c) Share of different sectors in total anthropogenic GHG emissions in 2004 in terms of CO2-eq. (Forestry includes deforestation.) {WGIII Figures TS.1a, TS.1b, TS.2b}

Human activities have been responsible for substantial increases in four long-lived GHGs, including: CO2, methane (CH4), nitrous oxide (N2O) and halocarbons (a group of gases

containing fluorine, chlorine or bromine). Global increases in CO2 concentrations are due primarily to fossil fuel use, with land-use change providing another significant but smaller contribution. It is very likely that the observed increase in CH4 concentration is predominantly due to agriculture and fossil fuel use. The increase in N2O concentration is primarily due to agriculture (IPCC, 2007).

According to the IPCC (2007), for the next couple of decades global temperatures are expected to rise approximately 0.2^{o} C per decade under a variety of scenarios. Further, global temperatures are expected to continue for centuries as a result of human activities due to the time scales associated with climate processes and feedbacks, even if GHG concentrations are stabilized. As a result, based on the current understanding of climate-carbon feedback, model studies show that substantial GHG emission reductions are necessary to avoid substantial increases in global air and ocean temperatures.

LEGISLATIVE BACKGROUND – CALIFORNIA

California has taken a leadership role in not only recognizing the future impacts to global climate change from anthropogenic sources of GHG emissions, but in establishing policies and adopting laws to substantially reduce GHG emissions by 2050. In addition to the GHG legislation related to CEQA described in Chapter 1, California has adopted the following policies and laws that specifically address reducing GHG emissions.

- Governor Schwarzenegger's Executive Order (June 2005)

In June 2005, Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05, which establishes greenhouse gas emission reduction targets in response to projected increases in global air and ocean temperatures. Specifically, EO S-3-05 establishes the following three GHG emission reduction targets:

- Reduce GHG emissions to 2000 emission levels by 2010;
- Reduce GHG emissions to 1990 emission levels by 2020; and
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

Further, EO S-3-05 charges the California Environmental Protection Agency (CalEPA) secretary to coordinate with the Secretary of the Business, Transportation and Housing Agency, Secretary of the Department of Food and Agriculture, Secretary of the Resources Agency, Chairperson of the CARB, Chairperson of the Energy Commission and President of the Public Utilities Commission to develop a Climate Action Plan. EO S-3-05 also charges the Secretary of CalEPA with the oversight of efforts to meet the above GHG emission reduction targets and the responsibility to prepare biannual reports on progress in meeting the GHG emission reduction targets.

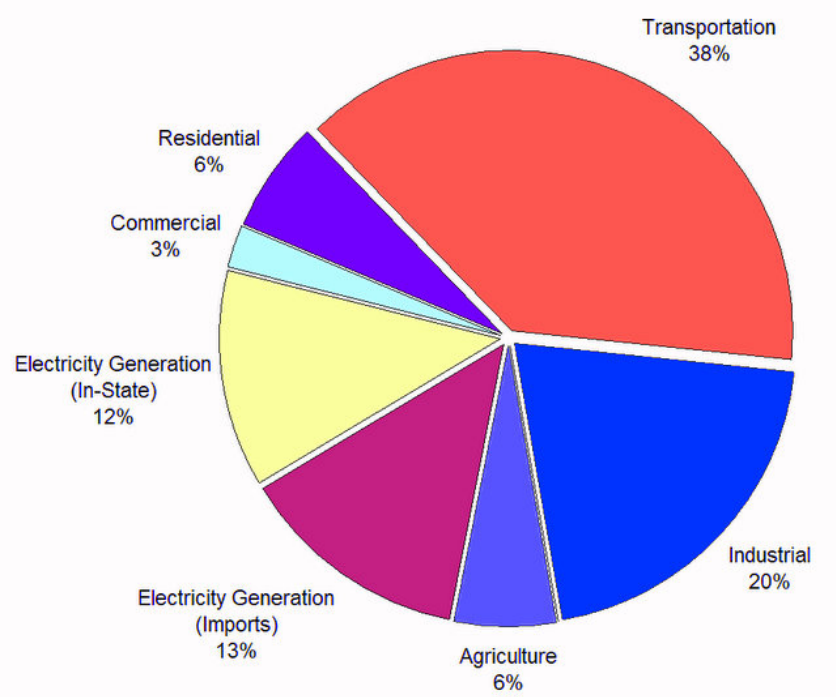
- **Global Warming Solutions Act of 2006 (Assembly Bill (AB) 32)**

The Global Warming Solutions Act of 2006 (AB 32) was adopted by the California State Legislature in 2006. AB 32 assigns CARB the responsibilities of monitoring and reducing GHG emissions. Specifically, AB 32 requires CARB to:

- Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions, by January 1, 2008;
- Adopt mandatory reporting rules for significant sources of greenhouse gases by January 1, 2009;
- Adopt a plan by January 1, 2009, indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions;
- Adopt regulations by January 1, 2011, to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas, including provisions for using both market mechanisms and alternative compliance mechanisms;
- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB;
- Ensure public notice and opportunity for comment for all CARB actions;
- To adopt rules for "sources" including non-vehicular; and
- Prior to imposing any mandates or authorizing market mechanisms, CARB must evaluate several factors, including but not limited to impacts on California's economy, the environment and public health; equity between regulated entities; electricity reliability; conformance with other environmental laws, and must ensure that the rules do not disproportionately impact low-income communities.

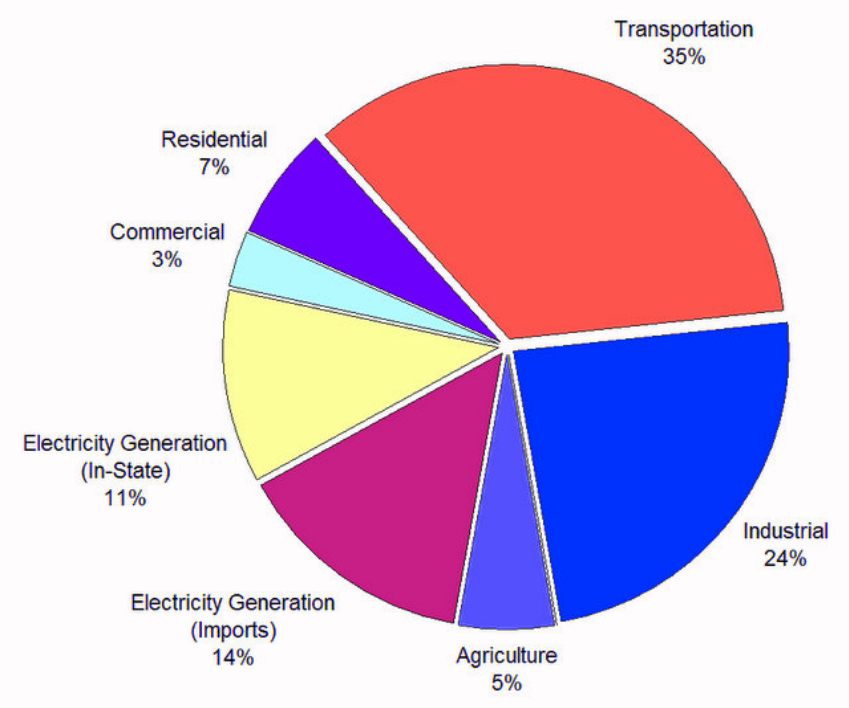
According to the schedule of milestones laid out in AB 32, CARB has made progress in the following areas. Consistent with AB 32's requirement to establish a GHG emission inventory, in December 2007 CARB adopted the California Greenhouse Gas Emission Inventory. The Inventory accounts for all GHG emissions within the state of California and supports the AB 32 Climate Change Program. Figure 2-2 shows CARB's inventory for the year 2004. The Inventory also serves as the basis for developing future year GHG emission forecasts necessary to support measure development and Scoping Plan recommendations. ARB staff has developed a year 2020 "business-as-usual" (BAU) forecast of GHG emissions for use in developing the Draft Scoping Plan. Figure 2-3 shows CARB's inventory for the year 2020, which is AB 32's target inventory.

Figure 2-2
2004 GHG Emissions by Sector (Gross Emissions: 484.4 MMT CO2eq.)



Source: CARB, 2007

Figure 2-3
1990 GHG Emissions by Sector (Gross Emissions: 433.3 MMT CO2eq.)



Source: CARB, 2007

On December 6, 2007, the Air Resources Board (ARB) approved a regulation for the mandatory reporting of greenhouse gas emissions from major sources, pursuant to AB 32. The mandatory reporting regulation specifies the types of facilities that must report their GHG emissions, requirements for reporting and estimating the GHG emissions, and requirements for emissions verification. Upon adoption, the CARB Board directed staff to make other conforming modifications, as may be appropriate, based on comments received. Subsequent to adoption, the mandatory reporting regulation has undergone two sets of modifications.

Consistent with the requirement to develop a scoping plan indicating how GHG emission reductions will be achieved through regulations, market mechanisms, and other actions, the Draft Scoping Plan was released for public review and comment on June 26, 2008, followed by workshops in July and August, 2008.

The Draft Scoping Plan calls for achievable GHG emission reduction in California's carbon footprint to 1990 levels. Reducing greenhouse gas emissions to 1990 levels means cutting approximately 30 percent from BAU emission levels projected for 2020, or about 10 percent from today's levels. Key elements of CARB's preliminary recommendation for reducing California's greenhouse gas emissions to 1990 levels by 2020 contained in the Draft Scoping Plan include the following:

- Expansion and strengthening of existing energy efficiency programs and building and appliance standards;
- Expansion of the Renewables Portfolio Standard for electricity generation to 33 percent;
- Development of a California cap-and-trade program that links with other WCI Partner programs to create a regional market system;
- Implementation of existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Targeted fees to fund the State's long-term commitment to AB 32 administration.

The Scoping Plan is expected go to the CARB Board for adoption in November, 2008.

INITIAL GUIDANCE ON EVALUATING GHGS PURSUANT TO CEQA

As noted in Chapter 1, both the California Attorney General's Office and the OPR determined that GHG emissions contributing to global climate change have the potential to generate adverse environmental impacts that should be evaluated pursuant to CEQA. Until recently, however, there has been little or no guidance relative to analyzing GHG emissions in CEQA documents or determining significance. The first explicit guidance was provided by the Association of Environmental Professionals (AEP) in its White Paper on Global Climate Change (AEP, 2007) and the White Paper on CEQA and Climate Change prepared by the California Air Pollution Control Officers Association (CAPCOA, 2008). The content of each of these White Papers is summarized in the following subsections.

- Association of Environmental Professionals – White Paper on Global Climate Change

AEP's White Paper (AEP) was one of the first attempts to discuss GHGs in the context of CEQA. The intent of the White Paper was to provide practical, interim information to CEQA practitioners and to help Lead Agencies determine how to address GHGs and global climate change in CEQA documents prior to the development and adoption of guidance by appropriate government agencies. Further, AEP's White Paper provided a summary of the current regulatory environment surrounding GHG emissions, and the various approaches that a Lead Agency may select in a CEQA document to address the potential impacts of global climate change and a project's cumulative contribution to GHG. The White Paper described several approaches for addressing GHGs and global Climate Change in CEQA documents, but did not recommend a single approach or methodology, leaving that decision to local Lead Agencies. The AEP White Paper identified eight approaches for analyzing GHGs and global climate change, which are summarized in the following bullet points.

- **Approach 1 – No Analysis:** under this approach the Lead Agency would not mention or discuss GHGs or global climate change.
- **Approach 2 – Screening Analysis:** under this approach the Lead Agency would establish a process to screen projects and determine that they would not make significant contributions to GHG emissions or GCC and, therefore, would not need to mitigate accordingly.
- **Approach 3 – Qualitative Analysis without Significance Determination:** this approach involves a qualitative discussion of GHGs and global climate change and potential ways the project will contribute to the generation of GHG emissions, but does not provide any significance conclusions.
- **Approach 4 – Qualitative Analysis with Significance Determination:** under this approach the Lead Agency would qualitatively discuss GHGs and climate change impacts and conclude that the project impacts are significant.
- **Approach 5 – Quantitative Analysis without Significance Determination:** under this approach the Lead Agency would quantify GHG emissions from the proposed project, but the results are not compared to a quantitative significance threshold.
- **Approach 6 – Quantitative Analysis with Net Zero Threshold:** this approach involves quantifying GHG emissions and using zero net carbon dioxide equivalent increase as the threshold.
- **Approach 7 – Quantitative Analysis Relative to California GHG Emission Reduction Strategies:** this approach employs both quantitative and qualitative components. The quantitative analysis contains an inventory of project GHG emissions. The qualitative component involves project compliance with the emission reduction strategies contained in the California Climate Action Team's (CAT) Report to the Governor, which contains recommendations and strategies to help ensure the targets in Executive Order S-3-05 are met.
- **Approach 8 – Use of Partial Exemption, "Within the Scope" of a Program EIR, or Tiering:** this option relies on the preparation of a broad EIR on a plan, program, or zoning action that is certified and contains a cumulative GHG and global climate change

impact analysis and mitigation. A later project that is consistent with the actions, goals, and/or policies in that plan, program, or zoning action need not again evaluate the cumulative impact regarding the project's GHG contribution to global climate change. In this situation, the later project may use the "partial exemption" provision of Public Resources Code §21083.3 and CEQA Guidelines §15183.

Since the date that the AEP White Paper was finalized (June, 2007), it has become clear that any of the above eight options that do not include quantification of GHG emissions and a determination of significance would be vulnerable to legal challenge. In addition, with the exception of the net zero approach in option 6, none of the options evaluated identify potential GHG significance thresholds. Approaches to developing GHG significance thresholds were specifically addressed in CAPCOA's White Paper (CAPCOA, 2008).

- California Air Pollution Control Officers Association – White Paper: CEQA and Climate Change

The intent of CAPCOA's White Paper is to serve as a resource for public agencies as they establish procedures for reviewing GHG emissions from projects under CEQA. It considers the application of thresholds and offers three alternative programmatic approaches toward determining whether GHG emissions are significant. Although the White Paper considers an option of not establishing a GHG significance threshold, as already noted this option is not considered to be a viable approach and will not be considered further. Ultimately, the White Paper is intended to provide consistent approaches for public agencies to ensure that GHG emissions are appropriately considered and addressed under CEQA.

The CAPCOA White Paper identifies three programmatic approaches to establishing GHG significance thresholds and also discusses the benefits and problems associated with each approach. Each approach has inherent advantages and disadvantages. The three basic approaches are:

- No significance threshold for GHG emissions (not discussed further);
- GHG emissions threshold set at zero; or
- GHG threshold set at a non-zero level, two approaches.

The following subsections briefly summarize two of the three major programmatic approaches developed by CAPCOA.

- Zero Threshold

An air district or lead agency may determine that any degree of project-related increase in GHG emissions would contribute considerably to climate change which, therefore, would be considered a significant impact. As a result, the air district or lead agency could adopt a zero-emission GHG threshold. If the zero threshold option is chosen, the lead agency would be required to quantify and mitigate GHG emissions for all projects subject to CEQA, regardless of the size of the project or the availability of GHG reduction measures available to reduce the project's emissions. Projects that could not meet the zero-emission threshold would be required to undergo an environmental impact report (EIR) CEQA process to disclose the unmitigable significant impact, and develop the justification for a statement of overriding consideration to be adopted by the lead agency.

CAPCOA notes in the White Paper that if an air district or lead agency elects to adopt a zero threshold approach, it should consider the administrative costs and the environmental review system capacity. Some projects that previously would have qualified for an exemption could require further substantial analysis, including preparation of a Negative Declaration (ND), a Mitigated Negative Declaration (MND) or an EIR. Moreover, the trade-offs between the volume of projects requiring review and the quality of consideration given to reviews should be considered. It may also be useful to consider whether meaningful mitigation can be achieved from smaller projects.

- *Approach 1: Non-Zero Threshold – Statute and Executive Order Approach*

According to CAPCOA, a non-zero GHG significance threshold could minimize the resources spent reviewing environmental analyses that do not result in real GHG reductions or to prevent the environmental review system from being overwhelmed. The practical advantages of considering non-zero thresholds for GHG significance determinations can fit into the concept regarding whether the project's GHG emissions represent a "considerable contribution to the cumulative impact" and therefore warrant analysis.

The first non-zero GHG significance threshold approach is based on achieving the objectives of AB 32 or executive order EO S-3-05 and explores four possible options under this scenario. A project would be required to meet the target objectives, or reduce GHG emissions to the target objectives, to be considered less than significant. The options under this approach are variations of ways to achieve the 2020 goals of AB 32 from new development, which is estimated to be about a 30 percent reduction from business-as-usual. Table 2-1 summarizes the four statute and executive order approaches identified by CAPCOA. SCAQMD staff has identified and included in Table 2-1 potential pros and cons identified for each option.

- *Approach 2: Non-Zero Threshold – Tiered Threshold Options*

The second non-zero GHG significance threshold approach is comprised of a number of tiered GHG significance threshold options. Within this option, the CAPCOA White Paper discusses seven variations. The tiered threshold options offer both quantitative and qualitative approaches to setting a threshold, as well as different metrics for establishing the various tiers. Variations range from setting the first tier at zero to second tiers set at defined emission levels or based on the size of a project. This approach would then prescribe a set of GHG mitigation strategies that would have to be incorporated into the project in order for the project to be considered less than significant. CAPCOA notes that some applications of the tiered threshold approach may require inclusion in a General Plan or adoption of enabling regulations or ordinances to render them fully effective and enforceable. The various tiered threshold options are summarized in Table 2-2. SCAQMD staff has identified and included in Table 2-2 potential pros and cons identified for each option.

Table 2 – 1
Statute and Executive Order Approach

Threshold Number	Description of Threshold	Pros*	Cons*
1.1	Project must reduce emissions compared to business as usual to be less than significant, two approaches: a. Project must reduce GHG emissions 33 percent compared to business-as-usual (BAU) (2020 target), or b. Project must reduce GHG emissions 80 percent compared to business-as-usual (2050 target).	• Could reduce resource impacts compared to zero threshold, as not every project would require an EIR • Would achieve GHG reductions consistent with AB 32 • A single threshold is easier to apply and understand	• Could be viewed as setting a de minimis level • Fewer projects would trigger significance, thus, less mitigation • BAU should be defined by CARB • BAU may be difficult to define for all projects
1.2	All new projects must reduce GHG emissions compared to BAU by a uniform percentage to be considered less than significant, e.g., 50 percent.	• Same as 1.1 • May produce greater percent reduction of GHGs • Single threshold easier to apply & understand	• Could produce substantially greater GHG reductions than 1.1, but may be difficult to achieve • BAU should be defined by CARB • BAU may be difficult to define for all projects

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

Table 2 – 1 (Concluded)
Statute and Executive Order Approach

Threshold Number	Description of Threshold	Pros*	Cons*
1.3	Projects must reduce GHG emissions compared to business-as-usual by a uniform percentage based on economic sector to be less than significant, i.e., different reductions required for different market sectors.	• Sector-specific approach may be more appropriate approach • Would take into account costs & available control technologies • Avoids over- or under-regulation of GHGs per sector	• Requires extensive information on emission inventories • Requires extensive information on control technologies • Difficult to determine percent reduction by sector • Because of information requirements, may be more viable in the long term
1.4	Uniform GHG emission reduction by region. Regional GHG reduction plan developed consistent with AB32 emission reductions, e.g., reduce GHG emissions 33% or 80% compared to BAU. A project is not significant if its GHG emissions are consistent with plan.	• Could tailor GHG reductions to specific regional needs • GHG reduction strategies could be integrated into regional plans	• Would need to establish GHG regions • Requires extensive information on regional emission inventories • Because of the need to develop a regional plan, may be a more viable interim approach

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

Table 2 – 2
Tiered Threshold Options

Threshold Number	Description of Threshold	Pros*	Cons*
2.1	This threshold employs a decision tree approach. Tier 1, no increase in GHG emissions, not significant (zero threshold). If GHG emissions greater than zero, tier two, use one of the following threshold options.	• Tiered approach allows flexibility by establishing multiple thresholds to cover a wide range of projects • Tier 2 may minimize administrative burden & costs • Tiers could be set at different levels depending on GHGs, size & other project characteristics • Projects exceeding tier 2 must implement mitigation	• Tier 1 may increase administrative burdens & costs • There may not be meaningful mitigation for small projects • Available mitigation may consist of purchasing offsets • EJ concerns of purchasing offsets because of associated criteria pollutant emissions • Offset markets not well established
2.2	Establish a quantitative threshold based on capturing a percentage, e.g., 90%, of future discretionary projects, CAPCOA's threshold is 900 metric tons CO2eq per year (equivalent to 50 houses or 30,000 square feet of commercial space, i.e., CAPCOA assumes 90% of all projects are this size or greater). Projects less than this would not be significant.	• Would capture a larger percentage of projects in the district than is currently the case • Would exclude small projects from further GHG analysis • Single threshold easier to apply & understand	• Would increase administrative & cost burden, especially in developing & moderate growth areas • May not be amenable to industrial projects because of the diversity of these projects • There may not be meaningful mitigation for small projects

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

Table 2 – 2 (Continued)
Tiered Threshold Options

Threshold Number	Description of Threshold	Pros*	Cons*
2.3	This threshold is based on CARB's proposed mandatory reporting threshold of 25,000 metric tons of CO2eq per year. Alternatively, use the Market Advisory Committee of 10,000 metric tons of CO2eq per year. Projects less than either would not be significant.	• CARB estimates this threshold would capture 90 % of all industrial projects • Single threshold easier to apply & understand	• May not be amenable to industrial projects because of the diversity of these projects • There may not be meaningful mitigation for small projects
2.4	This approach establishes a GHG threshold based on and analogous to a NOx/VOC criteria pollutant CEQA significance threshold and is established using the following four steps: a. Define NOx/VOC CEQA thresholds in tons per year (e.g., 10 t/yr) b. Define the regional NOx/VOC inventory in tons per year (e.g., annual NOx inventory for 2005 from 2007AQMP ~ 375,585 t/yr) c. Calculate percentage of NOx/VOC inventory the significance threshold represents (10 / 375,585 = 0.00003) to obtain "minimum percentage of regulated inventory" for NOx/VOC.	• Single threshold easier to apply & understand	• Threshold cumbersome to derive • Threshold would change periodically as inventory goes up or down • Could have widely divergent thresholds by air basin because of varying inventories

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

Table 2 – 2 (Continued)
Tiered Threshold Options

Threshold Number	Description of Threshold	Pros*	Cons*
2.4 (Cont.)	d. Define California GHG emission inventory for 2004 in tons CO2eq per year (499 MMT CO2eq). Apply minimum percentage of regulated inventory to California GHG inventory for 2004 to develop a GHG threshold analogous to the CEQA Threshold (e.g., 0.00003 x 499 MMT = 14,970 metric tons CO2eq per year = significance threshold).	•	•
2.5	Establish quantitative unit-based thresholds based on capturing a percentage, e.g., 90%, of future discretionary projects in specific market sectors (similar to 2.2 above). CAPCOA examples include: • 30,000 square-foot (SF) office =800 metric tons CO2eq per year; • 30,000 SF retail = 2,500 metric tons CO2eq per year; • 30,000 SF supermarket = 43,000 metric tons CO2eq per year.	• Would capture a larger percentage of projects in the district than is currently the case • Would exclude small projects from further GHG analysis • Single threshold easier to apply & understand	• Would increase administrative & cost burden, especially in developing & moderate growth areas • May not be amenable to industrial projects because of the diversity of these projects • There may not be meaningful mitigation for small projects

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

Table 2 – 2 (Concluded)
Tiered Threshold Options

Threshold Number	Description of Threshold	Pros*	Cons*
2.6	This threshold would include tiered CEQA thresholds based on CEQA's definition of "projects with statewide, regional or areawide significance (§15206(b)), which include: • Residential development > 500 dwellings • Shopping center or business establishment employing > 1,000 persons or > 500,000 SF • Commercial office building employing >1,000 persons or > 250,000 SF • Hotel/motel > 500 rooms • Industrial, manufacturing or processing plant or industrial park employing > 1,000 persons or > 600,000 SF	• Could capture up to 50% of all future commercial development	• May capture substantially less than 50% if future development, resulting less GHG mitigation • Percentage capture of industrial/manufacturing projects currently unknown
2.7	Efficiency-based thresholds would be based on measurements of efficiency compared to intensity. Must be based on reasonable GHG emissions compared to business-as-usual.	• Would benchmark GHG intensity against target levels of efficiency • Thresholds established to provide future foreseeable GHG reductions compared to BAU • Would support AB 32 target objectives	• Would require substantial data & possibly modeling • May be more appropriate as a threshold in the long term

* Pros and cons reflect only SCAQMD staff's evaluation of the approaches.

CHAPTER 3

INTERIM GHG SIGNIFICANCE THRESHOLD STAFF PROPOSAL

Introduction

GHG Analysis Considerations

Current Staff Interim GHG Significance Threshold Proposals

INTRODUCTION

Because GHG emissions affect global climate, some have argued that it may be more appropriate for national or state agencies to establish significance thresholds or GHG emission reduction target objectives. However, no agency has established GHG significance thresholds that could assist Lead Agencies with determining the significance of GHG emissions in CEQA documents. In the absence of statewide guidance on this issue and in response to requests from a variety of stakeholders, the SCAQMD established a GHG Significance Threshold Stakeholder Working Group (Working Group) to establish an interim GHG significance threshold until such time as the state establishes a GHG significance threshold or provides recommended guidance on establishing a GHG significance threshold. Staff's goal is to reach consensus regarding an interim GHG significance threshold to the extent possible and take the staff proposal to the SCAQMD Governing for consideration and approval.

The Working Group was formed to assist staff's efforts to develop an interim GHG significance threshold an is comprised of a wide variety of stakeholders including: state agencies, OPR, CARB, and the Attorney General's Office; local agencies, city and county planning departments, utilities such as sanitation and power, etc.; regulated stakeholders, industry and industry groups; and organizations, both environmental and professional. Stakeholders were chosen based on their participation in other related stakeholder working groups and their expressed interest in participating in the developing a GHG significance threshold. Working group meetings are open to the public and have been well attended. The members of the Working Group and other interested parties who have requested to be notified of the meetings are listed in Appendix A. Information on the progress of the Working Group, including agendas, overhead presentations, and letters received from the various stakeholders can be found at the following website:
https://www.aqmd.gov/ceqa/handbook/GHG/GHG.html.

Part of the purpose of the Working Group is to provide a forum to solicit comments and suggestions from the various stakeholders to assist SCAQMD staff with developing an interim GHG significance threshold that is consistent with CEQA requirements for developing significance thresholds, is supported by substantial evidence, and provides guidance to CEQA practitioners with regard to determining whether GHG emissions from a proposed project are significant.

SCAQMD staff held the first Working Group meeting in April 2008. Except for September, Working Group meetings have been held on a monthly basis since April. Brief summaries of each Working Group meeting and the topics and staff GHG significance threshold proposals discussed to date are provided in Appendix B. Staff's initial proposed has been modified over time based on comments and concerns raised at Working Group meetings or in written comments. The following sections summarize staff's latest recommended interim GHG significance threshold proposal and some of the concepts necessary to understanding the various components of staff's

proposal. The latest staff proposal is considered to be a work-in-progress as staff is continuing to solicit further public input and suggestions.

The following subsections briefly summarize the GHG significance threshold design criteria concepts included as part of staff's proposed interim GHG significance threshold proposal. Following the discussion of design concepts, SCAQMD staff's current interim proposal is described.

GHG ANALYSIS CONSIDERATIONS

Before discussing quantification methodologies, it is necessary to consider design criteria that establish the parameters upon which the actual GHG analysis is based. The following subsections include discussions from the Working Group of some of the most important design criteria to be considered when quantifying GHG emissions. The following topics include some of the most important parameters that should be considered when quantifying GHG emissions and, therefore, should not be considered an exhaustive list of considerations as individual projects may include characteristics that may require additional considerations.

Policy Objective

The overarching policy objective with regard to establishing a GHG significance threshold for the purposes of analyzing GHG impacts pursuant to CEQA is to establish a performance standard or target GHG reduction objective that will ultimate contribute to reducing GHG emissions to stabilize climate change. Full implementation of the Governor's Executive Order S-3-05 would reduce GHG emissions 80 percent below 1990 levels or 90 percent below current levels by 2050. It is anticipated that achieving the Executive Order's objective would contribute to worldwide efforts to cap GHG concentrations at 450 ppm, thus, stabilizing global climate.

As described below, staff's recommended interim GHG significance threshold proposal uses a tiered approach to determining significance. Tier 3, which is expected to be the primary tier by which the AQMD will determine significance for projects where it is the lead agency, uses the Executive Order S-3-05 goal as the basis for deriving the screening level. Specifically, the Tier 3 screening level for stationary sources is base on an emission capture rate of 90 percent for all new or modified projects. A 90 percent emission capture rate means that 90 percent of total emissions from all new or modified stationary source projects would be subject to some type of CEQA analysis, including a negative declaration, a mitigated negative declaration, or an environmental impact.

Therefore, the policy objective of staff's recommended interim GHG significance threshold proposal is to achieve an emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate may be more appropriate to address the long-term adverse impacts associated with global climate change. Further, a 90 percent emission

capture rate sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions. This assertion is based on the fact that staff estimates that these GHG emissions would account for less than one percent of future 2050 statewide GHG emissions target (85 MMTCO2eq/yr). In addition, these small projects would be subject to future applicable GHG control regulations that would further reduce their overall future contribution to the statewide GHG inventory

- GHG Pollutants

Gases that trap heat in the atmosphere are often called greenhouse gases. The Kyoto Protocol, adopted in December 1997, is an agreement under which industrialized countries will reduce their collective emissions of greenhouse gases by specified percentages, depending on the country, compared to 1990 levels. The goal is to lower overall emissions of six greenhouse gases - carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons, averaged over the period of 2008-2012.

Similarly, AB 32 defines GHGs as including the following: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (Health and Safety Code, section 38505(g)). The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide.

Some greenhouse gases such as carbon dioxide occur naturally and are emitted to the atmosphere through natural processes and human activities. Other greenhouse gases (e.g., fluorinated gases) are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are:

- **Carbon Dioxide (CO2):** Carbon dioxide enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH4):** Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.

- **Nitrous Oxide (N2O):** Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

- **Fluorinated Gases:** Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances (i.e., CFCs, HCFCs, and halons). Fluorinated gases are typically emitted in smaller quantities, but because they are potent greenhouse gases, they are sometimes referred to as high global warming potential gases (high GWP gases).

    - Hydrofluorocarbons are manmade chemicals that have historically replaced Chlorofluorocarbons used in refrigeration and semiconductor manufacturing.

    - Perfluorocarbons are manmade chemicals that are by-products of aluminum smelting and uranium enrichment.

    - Sulfur hexafluoride is a manmade chemical that is largely used in heavy industry to insulate high voltage equipment and to assist in the manufacturing of cable cooling systems.

GWP is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale that compares the gas in question to the same mass of carbon dioxide (whose GWP is by definition 1). A GWP is calculated over a specific time interval and the value of this must be stated whenever a GWP is quoted or else the value is meaningless. A substance's GWP depends on the time span over which the potential is calculated. A gas which is quickly removed from the atmosphere may initially have a large effect but for longer time periods as it has been removed becomes less important. For the purposes of a CEQA analysis, especially an analysis of operation emissions, the maximum GWP is typically used, regardless of the actual atmospheric lifetime. This approach simplifies the analysis and provides a very conservative analysis, especially for the fluorinated gases. The GWP of the six Kyoto GHGs is shown in Table 3-1.

The SCAQMD staff recommends that a GHG analysis include the six Kyoto GHGs, to the extent emission factors are available primarily because there is more information on these GHGs than other potential GHGs. Other GHGs would be added to the list as scientific information becomes available and agreed to by national or international protocols and agreements.

Table 3-1
Global Warming Potential of Kyoto GHGs

Gas	Atmospheric Lifetime	GWP
Carbon dioxide (CO2)	50 – 200	1
Methane (CH4)	12 $\pm$ 3	21
Nitrous oxide (N2O)	120	310
HFC-23 (Hydrofluorocarbons)	264	11,700
HFC-32	5.6	650

Table 3-1 (Concluded)
Global Warming Potential of Kyoto GHGs

Gas	Atmospheric Lifetime	GWP
HFC-125	32.6	2,800
HFC-134a	14.6	1,300
HFC-143a	48.3	3,800
HFC-152a	1.5	140
HFC-227ea	36.5	2,900
HFC-236fa	209	6,300
HFC-4310mee	17.1	1,300
CF4 (Perfluorocarbons)	50,000	6,500
C2F6	10,000	9,200
C4F10	2,600	7,000
C6F14	3,200	7,400
Sulfer hexafluoride (SF6)	3,200	23,900

Source: U.S. EPA (http://www.epa.gov/)

Carbon black, a form of particulate air pollution most often produced from biomass burning, cooking with solid fuels and diesel exhaust, may also have a warming effect in the atmosphere. It is estimated that carbon black's contribution to climate change is second only to carbon dioxide. Carbon black contributes to global warming by absorbing heat while airborne in the atmosphere. Carbon black is of particular concern in the arctic because it settles on ice and snow, reducing its reflectivity and increasing the rate of melting.

Based on a survey of available information, there are little data available for calculating carbon black effects on global warming. As a result, SCAQMD staff is not recommending analyzing carbon black effects on global warming. As information becomes available, staff will reconsider adding carbon black to the list of GHGs to be analyzed in CEQA documents.

Business-As-Usual (BAU)

In CARB's Scoping Plan (CARB, 2008) CARB states that the BAU case is a representation of what the state of the California economy will be in the year 2020 assuming that none of the measures recommended in the Scoping Plan are implemented. CARB's projected BAU GHG emissions in 2020 are shown in Table 3-2.

Table 3-2
2002-2004 Average Emissions and 2020 Projected Emissions (Business-as-Usual)
(MMTCO2E)

Sector	2002-2004 Average Emissions	Projected 2020 Emissions [BAU]
Transportation	179.3	225.4
Electricity	109.0	139.2
Commercial and Residential	41.0	46.7
Industry	95.9	100.5
Recycling and Waste	5.6	7.7
High GWP	14.8	46.9
Agriculture	27.7	29.8
Forest Net Emissions -	4.7	0.0
Emissions Total	**469**	**596**

Source: CARB, 2008 – Scoping Plan, Table 1

CARB's Scoping Plan states further that continuing increases in global greenhouse gas emissions at BAU rates would result, by late in the century, in California losing 90 percent of the Sierra snow pack, sea level rising by more than 20 inches, and a three to four times increase in heat wave days, flood damage, etc. To avoid future foreseeable environmental impacts to California, the Scoping plan calls for an ambitious but achievable reduction in California's carbon footprint. Reducing greenhouse gas emissions to 1990 levels means reducing approximately 30 percent from BAU emission levels projected for 2020, or about 15 percent from today's levels. On a per-capita basis, that means reducing our annual emissions of 14 tons of carbon dioxide equivalent for every man, woman and child in California down to about 10 tons per person by 2020.

Although CARB's Scoping Plan calls for reducing GHG emissions 30 percent from BAU levels, it does not explicitly define BAU. There is, however, a brief definition of BAU in CARB's GHG inventory document (CARB, 2007). In that document CARB describes BAU as:

- BAU is based on GHG emissions estimates in the absence of policies and reduction measures, and
- BAU is based on forecasted demographic and economic growth.

In its White Paper, CAPCOA provides a more detailed definition of BAU compared to the above definition in CARB's inventory document. In the White Paper BAU is defined as follows:

- The projection of GHGs into the future based on current technologies and regulations;

- The adoption of new GHG reduction regulations, e.g., CARB's Scoping Plan measures, in the future establishes new BAU, i.e., the definition of BAU evolves over time; and
- BAU will normally define the CEQA no project alternative, but does not necessarily form the project baseline.

Based on the above definitions and discussions from the Working Group, SCAQMD staff defines BAU as the following

- Is used to project project's future emissions (consistent with CAPCOA and CARB definitions), i.e., level from which GHG reductions must occur;
- Is based first and foremost on current regulatory requirements (consistent with CAPCOA and CARB definitions);
- Regulatory requirements may determine current technology, e.g., advanced technology may be available, but not required, such as combined cycle gas turbine;
- Will normally define the no project alternative (consistent with CAPCOA and CARB definitions); and
- May be used to establish a project's CEQA baseline, only if consistent with CEQA Guidelines §15125.

The importance of BAU lies not only in the fact that it is a methodology for calculating a project's future emissions, is also forms the emission level from which GHG emission reductions must occur. SCAQMD staff's current GHG significance threshold proposal includes the Tier 4 compliance option 1 that establishes a performance standard of reducing GHG emissions 30 percent below the project's projected BAU emissions through design features and/or mitigation measures. A 30 percent reduction from BAU is consistent with the target objectives of AB 32 and CARB's Scoping Plan. The intent of the Tier 4 compliance option 1 is to provide a feasible target objective, that will not only contribute to achieving the AB 32 target objective, but will also contribute to achieving the 2050 target of the Governor's Executive Order S-3-05, which establishes of target objective of reducing GHG emissions 80 percent below 1990 levels or a 90 percent reduction from current BAU estimates.

As recognized by CAPCOA and SCAQMD, BAU will evolve over time as the current regulatory framework changes to implement GHG reduction strategies, either statewide strategies, e.g., CARB's Scoping Plan, or any future federal strategies. Evolving BAU creates two issues for the CEQA practitioner. First, staff's proposed Tier 4 compliance option 1 target objective is unchanged from 30 percent, then over time as BAU changes to incorporate GHG reduction strategies, achieving the target objective will become more difficult. Second, any GHG significance thresholds that rely on BAU will have higher uncertainties because they rely on a constantly changing BAU, which may be difficult to define.

To resolve some of these issues of an evolving definition of BAU, SCAQMD staff recommends that a statewide definition be developed by CARB that is updated periodically. Until such time as a statewide definition of BAU is developed, the SCAQMD staff will rely on the above definition. Because the SCAQMD's staff's GHG significance proposal is considered to be an interim proposal, future updates or revisions to staff's proposal would also include updates to BAU or the target objective as BAU levels decline over time. It may be that a target objective percent reduction from BAU levels is a short-term GHG threshold proposal and may become less important in the future as other concepts are evaluated and more fully developed.

- GHG Source Categories to Analyze

Life Cycle Analysis

CEQA requires that the lead agency analyze direct and indirect impacts from a proposed project, giving due consideration to short-term and long-term effects (CEQA Guidelines 15126.2(a)). In the case of GHG pollutants a systems approach to evaluating the consequences of a particular product, process or activity may be more appropriate because of the long atmospheric lifetimes of the various GHGs (see Table 3-1). One of the most effective ways of evaluating GHGs using a systems approach is through the preparation of a life cycle analysis (LCA).

The goal of a life cycle analysis is to compare the full range of environmental damages assignable to products and services, to be able to choose the least burdensome one. The term 'life cycle' refers to the concept that a fair, holistic assessment requires the assessment of raw material production, manufacture, distribution, use and disposal including all intervening transportation steps necessary or caused by the product's existence. The sum of all those steps - or phases - is the life cycle of the product.

Performing a life cycle analysis may be difficult for a number of projects or processes because life cycle emission factors may not be well established for many activities or projects and the life cycle process itself may not be known or well-defined. SCAQMD staff, however, recommends that life cycle analyses be prepared for all projects undergoing a CEQA analysis, as this will produce a more defensible approach. If, however, any component of the life cycle analysis is unavailable, unknown, or not supported by scientific evidence, the lead agency should note such an analysis would be speculative pursuant to CEQA Guidelines §15145 and terminate discussion of that impact.

Direct/Indirect Impacts

Consistent with CEQA, indirect and direct impacts of the project, typically within California, are required to be analyzed in the CEQA document for a proposed project. The analysis of direct GHG impacts is relatively straightforward as onsite GHG sources or directly related offsite GHG sources, such as worker commute trips, are generally readily identifiable. Indirect GHG emission sources are less obvious, but may include some of the sources identified in the following paragraphs. In general,

for most projects information on direct and indirect emissions may be available, rather than a full life-cycle analysis of emissions. The lead agency has typically been expected to address emissions that are closely related and within the capacity of the project proponent to control and/or influence.

Direct Impacts - are primary effects that are caused by a project and occur at the same time and place, such as emissions from boilers, heaters, or other onsite emissions sources. Direct impacts generated by a project may include offsite sources directly related to the project such as emissions from worker commute trips, haul truck trips to import raw materials and/or export finished products or other goods.

Direct GHG emission impacts will include both construction and operation activities. Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively small portion of the overall lifetime project GHG emissions. In addition, GHG emission reduction measures for construction equipment are relatively limited. Therefore, SCAQMD staff is recommending that construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies.

Indirect Impacts - The CEQA Guidelines define indirect impacts as the following: an indirect physical change in the environment…which is not immediately related to the project, but which is caused indirectly by the project. If a direct physical change in the environment in turn causes another change in the environment, then the other change is an indirect change in the environment (CEQA Guidelines §15064 (d)(2)). Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems (CEQA Guidelines §15358)(a)(2)).

DRAFT STAFF INTERIM GHG SIGNIFICANCE THRESHOLD PROPOSAL

As indicated by the evolution of the staff proposal over time, SCAQMD has generally recommended a tiered decision tree approach to establishing a GHG significance threshold. In CAPCOA's White Paper, eight of the 12 significance threshold options are based on a tiered threshold approach (see also Table 2-2 in Chapter 2). A tiered GHG significance threshold approach is an appealing approach because it provides flexibility in determining whether or not GHG emissions from a project are significant typically using a single methodology to establish various tiers that can be based on the physical size of the project, land use type, or other characteristics. The tiered approach envisioned by SCAQMD staff would require quantification of GHG emissions for all projects that are subject to CEQA and quantification of the GHG reduction effectiveness of design parameters incorporated into the project and any mitigation measures imposed by the lead agency. It may even be necessary to

quantify GHG emissions, if any, for projects that would otherwise qualify for a categorical exemption to document that no "cumulative impact of successive projects of the same type in the same place, over time is significant" (CEQA Guidelines §15300.2(b), or that there is no "reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances." (CEQA Guidelines §15300.2(c)).

The CAPCOA White Paper also includes a discussion of a decision tree approach to tiering. Instead of using a single methodology to establish tiers, a decision tree approach would use multiple methodologies to demonstrate significance for a broad range of projects/plans that may be difficult to address using a single GHG significance threshold methodology. Using a decision tree approach promotes even greater flexibility in determining significance for a variety of project types.

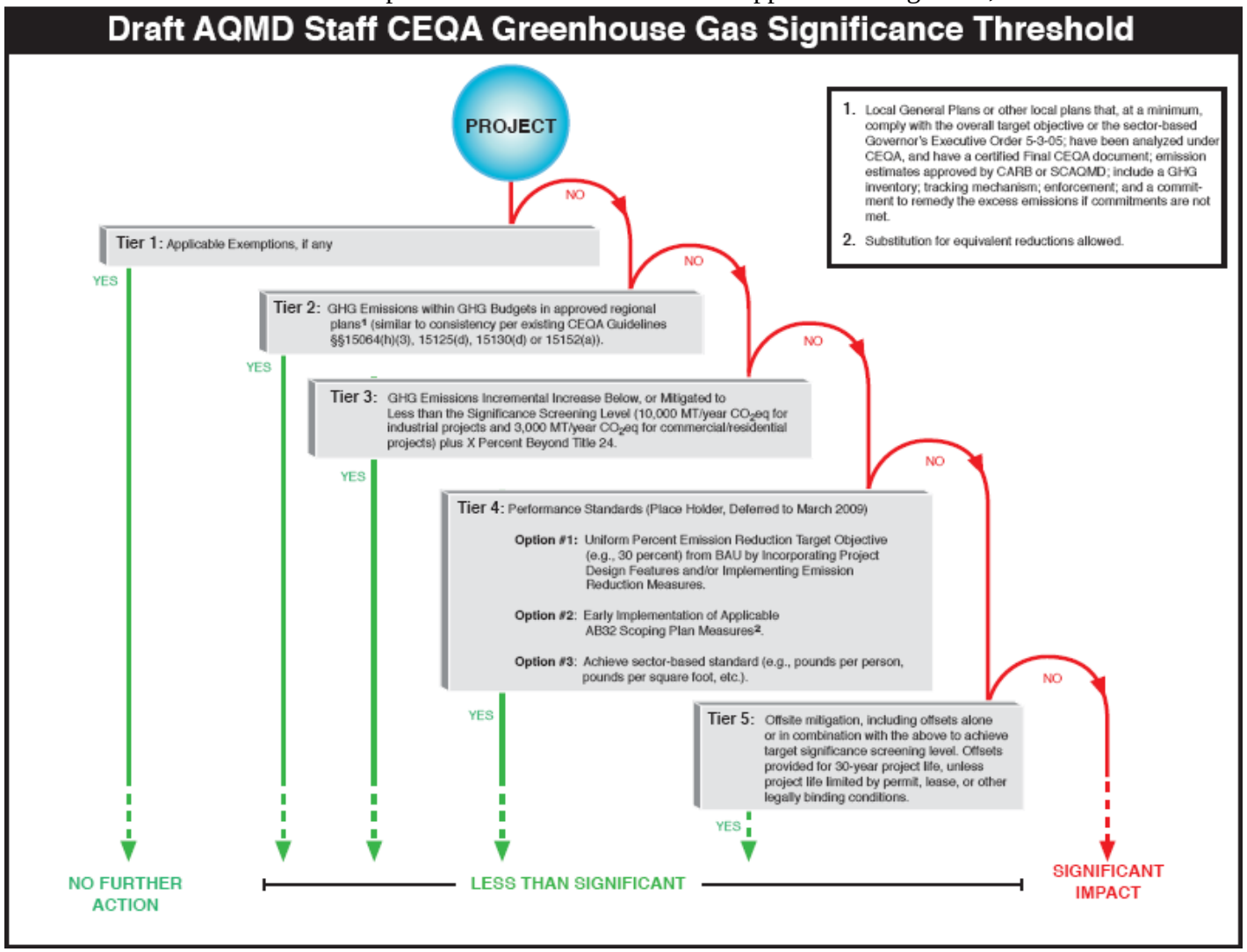
At the August 27, 2008 Working Group meeting #5, staff presented the revised interim GHG significance proposal #3, which included a tiered decision tree approach. Unlike the decision tree approach discussed in CAPCOA's White Paper, some tiers include multiple approaches for determining whether a project's GHG emissions are significant, rather than using a single different methodology for each tier.

For the purposes of determining whether or not GHG emissions from affected projects are significant, project emissions will include direct, indirect, and, to the extent information is available, life cycle emissions during construction and operation. Construction emissions will be amortized over the life of the project, defined as 30 years, added to the operational emissions, and compared to the applicable interim GHG significance threshold tier. The following bullet points describe the basic structure of staff's tiered GHG significance threshold proposal for stationary sources. The components of revised staff proposal #3 are described in the following paragraphs and shown graphically in Figure 3-1.

- **Tier 1 –** consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. For example, SB 97 specifically exempts a limited number of projects until it expires in 2010. If the project qualifies for an exemption, no further action is required. If the project does not qualify for an exemption, then it would move to the next tier.

- **Tier 2 –** consists of determining whether or not the project is consistent with a GHG reduction plan that may be part of a local general plan, for example. The concept embodied in this tier is equivalent to the existing concept of consistency in CEQA Guidelines §§15064(h)(3), 15125(d), or 15152(a). The GHG reduction plan must, at a minimum, comply with AB 32 GHG reduction goals; include emissions estimates agreed upon by either CARB or the SCAQMD, have been analyzed under CEQA, and have a certified Final CEQA document. Further, the GHG reduction plan must include a GHG emissions inventory tracking mechanism; process to monitor progress in achieving GHG emission reduction targets, and a commitment to remedy the excess emissions if AB 32 goals are not met (enforcement).

Figure 3-1
Revised Staff Proposal #3 Tiered Decision Tree Approach – August 27, 2008



If the proposed project is consistent with the local GHG reduction plan, it is not significant for GHG emissions. If the project is not consistent with a local GHG reduction plan or there is no approved plan, the GHG reduction does not include all of the components described above, or there is no adopted GHG reduction plan, the project would move to tier 3.

- **Tier 3 –** attempts to identify small projects that would not likely contribute to significant cumulative GHG impacts. However, because of the magnitude of increasing global temperatures from current and future GHG emissions, staff is recommending that all projects must implement some measure or measures to contribute to reducing GHG emissions. Therefore, Tier 3 includes a requirement that ~~all~~ residential/commercial projects with GHG emissions less than the screening level must include efficiency components that ~~reduce a certain~~go X percent~~age~~ beyond the requirements of Title 24 (Part 6, California Code of Regulations), California's energy efficiency standards for residential and nonresidential buildings. Project proponents would also have to reduce by a specified percentage electricity demand from water use, primarily electricity used for water conveyance.

  ~~The most recently~~A past recommended screening level proposed by staff was 6,500 MTCO2eq./year. This screening level was derived using the SCAQMD's existing NOx operational threshold as a basis. The daily NOx operational significance threshold, 55 pounds per day was annualized, which results in 10 tons of NOx per year.

  Staff initially considered and then rejected a bifurcated screening level, that is one screening level for residential and commercial projects and a different screening level for industrial projects based on the URBEMIS modeling runs used to derive the 6,500 MTCO3eq/yr screening level because GHG emissions from industrial were of the same magnitude as the GHG emissions from residential and commercial projects. Staff has reconsidered the bifurcated screening level approach as there is a more scientific basis for deriving the different screening levels.

  SCAQMD staff is now recommending a bifurcated screening level approach to address two greatly differing project types: industrial projects as opposed to residential and commercial projects (which are largely indirect sources). The former category typically contains stationary source equipment whose emissions are largely permitted or regulated by the SCAQMD; whereas the latter category is mostly residential, commercial (may also include industrial) building structures that attract or generate mobile source emissions. In light of the GHG reductions needed to stabilize the climate while considering implementation resource requirements, the policy objective used to establish the screening thresholds is to capture projects that represent approximately 90 percent of GHG emissions from new sources. The following paragraphs describe the steps taken to derive the screening threshold values.

Industrial Projects: Since the majority of GHG emissions in the district are comprised of CO2 emissions from burning natural gas rather than other types of fossil fuel, staff compiled reported annual natural gas consumption for 1,297~~115~~ permitted facilities for 2006-2007 and rank-ordered the facilities to estimate the 90th percentile of the cumulative natural gas usage for all permitted facilities. Operators of these facilities are required to report their emissions and associated throughput under the SCAQMD's Annual Emission Reporting (AER) Program if any of their criteria pollutant emissions exceed four tons per year (100 tons per year for CO) or if the facility has any reportable air toxics emission. Figure 3-2 shows that approximately 10 percent of facilities evaluated comprise more than 90 percent of the total natural gas consumption, which corresponds to 10,000 metric tons per year (tpy) of CO2 emissions. This value represents a boiler with a rating of approximately 27 million British thermal units per hour (mmbtu/hour) of heat input, operating at ~~a~~n ~~25~~ 80 percent capacity factor. If the screening threshold of 10,000 MTCO2eq./yr is implemented, based on the permitting activities for 2006-2007 it will result in at least 31 additional MNDs or EIRs being prepared by the SCAQMD as the lead agency unless another tier option is selected to demonstrate no significant impacts for GHG emissions. It should be noted that this analysis did not include other possible GHG pollutants such as methane, N2O; a life-cycle analysis; mobile sources; or indirect electricity consumption. Therefore, under a 10,000 MTCO2eq./yr screening level more projects would be required to go through an MND or EIR environmental analysis than is currently the case. Furthermore, when the SCAQMD acts as a lead agency, the stationary source equipment employed as part of the proposed project typically must comply with BACT or other SCAQMD rules, regulations, programs that require reducing criteria pollutants or air toxics. Therefore, staff is proposing to replace the 6,500 MTCO2/yr screening level with the 10,000 MTCO2eq/yr as the screening level in tier III for industrial projects when the SCAQMD is the lead agency for the project.

Residential and Commercial Projects: To achieve the same 90 percent GHG emission capture rate for this segment of projects GHG emissions from residential and commercial sectors were compared to the GHG emissions from the industrial sector including the in-state power plants. The draft AB32 scoping plan indicates that based on statewide 2002-2004 average GHG emissions, the residential and commercial sectors account for approximately nine percent of the total statewide GHG inventory, while the industrial sector (including instate power plants) accounts for approximately 30 percent of the statewide GHG emission inventory. The inventory methodology for both sectors includes only on-site energy use, consistent with the staff approach taken in deriving the 10,000 tpy threshold. Assuming similar emission characteristics also exist for the residential and commercial sector (i.e., large residential or commercial projects, although fewer in numbers, contribute substantially more to the total emissions), it is estimated that at a threshold of approximately 3,000 MTCO2eq/yr emissions (10,000 x (9 percent / 30 percent)) would capture 90 percent of the GHG emissions from new residential or commercial projects. A series of sensitivity analyses was performed by the staff using URBEMIS to assess the likely project size for 3,000 MTCO2eq/yr emissions. Table 3-3 illustrates various projects by size and shape.

Figure 3-2

Total Number of AER Facilities and Their Accumulative Reported NG Usage
FY 06-07

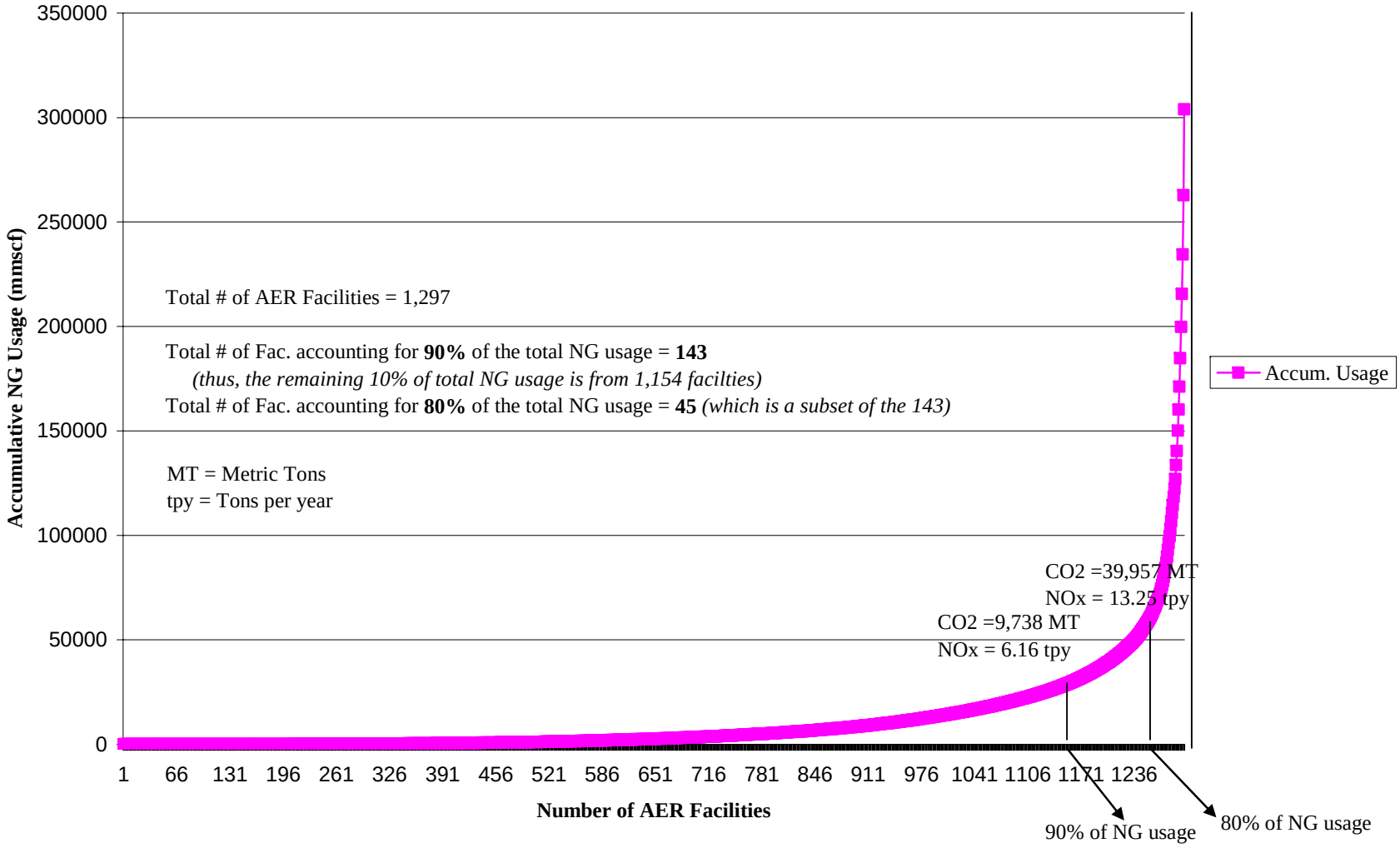


Table 3-3

URBEMIS Run Results for Residential/Commercial Projects Emitting Approximately 3,000 MTCO2 per Year*

			Area Source Emissions		*Operational Emissions*		**TOTAL**
	Weighted Avg Trip Rate	**Size**	**CO2 (tons/year)**	**CO2 (MT/year)**	**CO2 (tons/year)**	**CO2 (MT/year)**	**CO2 (MT/year)**
Res - Single Unit	19.54	80 units	326.86	297.15	3003.56	2730.51	3027.65
Res - Apt	9.17	175 units	422.70	384.27	2971.95	2701.77	3086.05
Comm - Office	6.02	265,000 ft^2	387.41	352.19	2961.75	2692.50	3044.69
Comm - Bank	206.22	9,500 ft^2	14.38	13.07	3192.90	2902.64	2915.71
Single/Apt	19.54	35 units	379.59	345.08	2964.82	2695.29	3040.37
	9.17	100 units					
Office/Bank	6.02	170,000 ft^2	254.19	231.08	3042.71	2766.10	2997.18
	206.22	3,400 ft^2					
Office/Single	6.02	135,000 ft^2	355.13	322.85	2956.32	2687.56	3010.41
	19.54	40 units					
Office/Apt	6.02	135,000 ft^2	403.19	366.54	2952.34	2683.95	3050.48
	9.17	85 units					
Bank/Single	206.22	3,700 ft^2	202.81	184.37	3052.93	2775.39	2959.76
	19.54	50 units					
Bank/Apt	206.22	4,000 ft^2	248.12	225.56	3042.64	2766.04	2991.60
	9.17	100 units					
Single/Apt/Office	19.54	20 units	382.60	347.82	2945.26	2677.51	3025.33
	9.17	65 units					
	6.02	100,000 ft^2					
Single/Apt/Bank	19.54	20 units	241.78	219.80	3020.76	2746.15	2965.95
	9.17	65 units					
	206.22	3,550 ft^2					
						Avg CO2 (MT/year):	**3009.60**

*****Offsite electricity use, water use, or other potential life cycle emissions not included.

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As shown in Table 3-3, this threshold would represent a residential development of about 70 single-family dwelling units. It should be noted that the sensitivity analysis did not include GHG emissions from electricity use and water use. As a result, similar to the earlier discussion of industrial projects, this screening level of 3,000 MTCO2eq/yr could capture development projects less than 70 single-family dwelling units.

In CAPCOA's White Paper, it is suggested that a thresholds of 900 MTCO2eq/yr would capture 90 percent of all development projects, which should translate into at least 90 percent of GHG emissions from the residential and commercial sectors[2]. According to CAPCOA 900 MTCO2eq/yr equates to approximately 50 single-family dwelling units. This information appears to corroborate the SCAQMD staff's finding that the policy objective of capturing 90 percent of all GHG emissions for this region can be achieved with a screening level of 3000 MTCO2eq/yr. Therefore, staff is recommending that this value be used by lead agencies for residential and commercial developments, including industrial parks, warehouses, etc.

- **Tier 4 – Decision Tree Options:** consists of three decision tree options to demonstrate that a project is not significant for GHG emissions. The three compliance options are as follows.

  Compliance Option 1 – the lead agency would calculate GHG emissions for a project using a BAU methodology. Once GHG emissions are calculated, the project proponent would need to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 30 percent reduction from BAU. Although a 30 percent reduction below BAU is consistent with the target objectives of AB 32, it will continue to reduce GHG emissions beyond 2020, thus, contributing to GHG reductions pursuant to the Governor's Executive Order S-3-05 (a 90 percent reduction compared to current GHG emissions). A 30 percent reduction is also considered to be an achievable GHG reduction target based on current technologies.

  Compliance Option 2 – this option consists of early compliance with AB 32 through early implementation of CARB's Scoping Plan Measures. The intent of this compliance option is to accelerate GHG emission reductions from the various

[2] Although the CAPCOA White Paper implies that 900 metric tons per year equates to a 90 percent capture rate, there is no explicit information provided in the White Paper that demonstrates this correlation. Indeed, the CAPCOA authors state that 900 metric tons, which represents approximately 50 residential units, corresponds to widely divergent capture rate percentile rankings depending on the project location (see discussion on page 43 of the White Paper). Percentile rankings were based on a survey of four cities in California. A project of 900 metric tons per year representing a 90 percent capture rate appears to be a working assumption for which there appears to be no factual basis. Further, although not explicitly stated, it is assumed that the 900 metric tons were derived using the URBEMIS2007 model. It should be noted that that the URBEMIS2007 model only quantifies CO2 emissions and direct emissions primarily from on-road mobile sources. It does not capture other GHG pollutants or indirect GHG emissions such as emissions from energy generation, water conveyance, etc. Therefore, it is likely that a 50-unit residential project would actually generate higher GHG emissions than 900 metric tons per year.

sectors subject to CARB's Scoping Plan to eliminate GHG emission, especially for those GHGs that have a long atmospheric lifetime such as CO2, sulfur hexafluoride, etc., to minimize future projected impacts to California from global climate change.

Compliance Option 3 – this compliance option consists of establishing sector-based performance standards. For example, it may be possible to use the 1990 inventory required under AB 32 to establish an efficiency standard such as pounds per person, pounds per worker, pounds per square feet, pounds per item manufactured, etc. When calculating GHG emissions from a project, if they are less than the established efficiency standard the project would not be significant relative to GHG emissions, while projects exceeding the efficiency standard would be significant.

If the lead agency or project proponent cannot achieve the performance standards on any of the compliance options in Tier 4, GHG emissions would be considered significant.

- **Tier 5** – under this tier, the lead agency would quantify GHG emissions from the project and the project proponent would implement offsite mitigation (GHG reduction projects) or purchase offsets to reduce GHG emission impacts to less than the proposed screening level. In addition, the project proponent would be required to provide offsets for the life of the project, which is defined as 30 years. If the project proponent is unable to obtain sufficient offsets, incorporate design features, or implement GHG reduction mitigation measures to reduce GHG emission impacts to less than the screening level, then GHG emissions from the project would be considered significant. Since it is currently uncertain how offsite mitigation measures, including purchased offsets, interact with future AB 32 Scoping Plan measures, the AQMD would allow substitution of mitigation measures that include an enforceable commitment to provide mitigation prior to occurrence of emissions and to prevent mitigating the same emissions twice.

  Mitigation Preference – If a project generates significant adverse impacts, CEQA Guidelines §15126.4 requires identification of mitigation measures to minimize potentially significant impacts. Because GHG emissions contribute to global change, mitigation measures could be implemented locally, nationally, or internationally and still provide global climate change benefits. Because reducing GHG emissions may provide co-benefits through concurrent reductions in criteria pollutants, when considering mitigation measures when the AQMD is the lead agency under CEQA, staff will implement mitigation measures that are real, quantifiable, verifiable, and surplus in the following order of preference.

  - Incorporate GHG reduction features into the project design, e.g., increase a building's energy efficiency, use materials with a lower global warming potential than conventional materials, purchase building materials locally, etc.

  - Implement onsite measures that provide direct GHG emission reductions onsite, e.g., replace onsite combustion equipment (boilers, heaters, steam

generators, etc.) with more efficient combustion equipment, replace existing high global warming potential refrigerants with low global warming refrigerants, eliminate or minimize fugitive emissions, etc.

- Implement neighborhood mitigation measure projects that could include incentives for installing solar power, increasing energy efficiency by exceeding Title 24 building standards through replacing low efficiency water heaters with high efficiency water heaters, increasing building insulation, using fluorescent bulbs, replacing old inefficient refrigerators with efficient refrigerators using low global warming potential refrigerants, etc.

- Implement in-district mitigation measures such as any of the above identified GHG reduction measures; reducing vehicle miles traveled (VMT) through greater rideshare incentives, transit improvements, etc.

- Implement in-state mitigation measures, which could include any of the above measures.

- Implement out of state mitigation measure projects, which may include purchasing offsets if no other options are available.

CARB's Interim GHG Significance Threshold Proposal

In October 2008 CARB released its interim GHG significance threshold proposal and held a public workshop on October 27, 2008. CARB's threshold is considered to be an interim threshold because CARB staff intends to periodically review and change its threshold proposal as necessary. CARB's Preliminary Draft Staff Proposal (Proposal) states that non-zero GHG significance thresholds can be supported by substantial evidence. Futher, different GHG significance thresholds may be established for different sectors. Therefore, as part of its initial interim GHG significance threshold proposal CARB is proposing two separate GHG significance thresholds, one for new industrial projects and another for residential/commercial projects subject to CEQA. CARB's proposal uses a tiered approach (see Table 3-4).

Table 3-4
Comparison of CARB's and AQMD's Interim GHG Significance Thresholds Approaches

	Stationary/Industrial Sector Projects		Residential/Commercial Sector Projects	
	CARB	AQMD	CARB	AQMD (Not Recommended at this Time)
Policy Objective	Capture 90% of statewide stationary project emissions	Capture 90% of district wide GHG emissions (industrial)	Capture X% of statewide residential/commercial project emissions	Capture 90% of district wide residential/commercial project GHG emissions
Exemption	Apply applicable exemption	Apply applicable exemption	Apply Applicable Exemption	Apply Applicable Exemption
Regional GHG Reduction Plan	N.A.	Project Consistent with Applicable GHG Reduction Plan with GHG inventorying, monitoring, enforcement, etc.	Project Consistent with Applicable GHG Reduction Plan with GHG inventorying, monitoring, enforcement, etc.	Project Consistent with Applicable GHG Reduction Plan with GHG inventorying, monitoring, enforcement, etc.
Thresholds	Project < 7,000 MTCO2eq/yr & meets construction & transportation performance standards	GHG emissions from industrial project is < 10,000 MTCO2eq/yr, includes construction emissions amortized over 30 years & added to operational GHG emissions	Project meets construction & operation performance tandards, e.g., energy, water use, waste & ransportation & < X MTCO2eq/yr	Project is < 3,000 MTCO2eq/yr & exceeds Title 24 Energy Efficiency Standards by X%, if applicable – construction emissions amortized over 30 years & added to operational GHG emissions
Performance Standards	See above	NA	See above	3 Compliance Options: 1) Reduce GHG emissions 30% below BAU; 2) Early Implement AB 32 Measure; 3) Comply with Performance Standard
Offsets	Offsite substitution allowed	Implement offsite mitigation for life of project, i.e., 30 years, with mitigation preference	Offsite substitution allowed	Implement ~~offsite mitigation for life of project, i.e., 30 years with mitigation preference~~
Determination	GHG emissions significant, EIR is prepared, if meeting none of the above	GHG emissions significant, EIR is prepared, if meeting none of the above	GHG emissions significant, EIR is prepared, if meeting none of the above	GHG emissions significant, EIR is prepared, if meeting none of the above

CARB's interim GHG significance threshold for industrial sources was developed to capture "the vast majority (~90% statewide) of the GHG emissions from new industrial projects being subject to CEQA's requirement to impose feasible mitigation." According to CARB's Proposal, CARB staff used data from a survey of industrial boilers performed by the Oak Ridge National Laboratory in which it was concluded that small boilers with an input capacity of 10 MMBtu/hr corresponded to 93 percent of total industrial boiler input capacity, or 4,660 MTCO2e/yr. Using this result and accounting for process losses, purchased electricity, and water usage and wastewater discharge, CARB staff is recommending 7,000 MTCO2eq/yr as a GHG significance threshold for industrial projects. The following bullet points summarize CARB's proposed interim GHG significance threshold for industrial sources.

- Box 1 – Apply any applicable categorical or statutory exemptions. If the project does not qualify for an exemption, move to Box 2.

- Box 2 – The industrial project must meet both of the following performance standards or equivalent mitigation measures to be deemed insignificant for GHGs:

    - Construction – Project must meet an interim performance standard for construction- related emissions (performance standard not yet defined).

    - Transportation – Project must meet an interim performance standard for transportation (performance standard not yet defined).

    AND

    - Project with mitigation will emit no more than 7,000 MTCO2eq/yr. If the project does not qualify for either of the performance standards or exceeds 7,000 MTCO2eq/yr, move to Box 3.

- Box 3 – Project is deemed significant and an EIR must be prepared.

- CARB's Preliminary Draft Proposal for Residential and Commercial projects is summarized in the following bullet points.

- Box 1 – Apply any applicable categorical or statutory exemptions. If the project does not qualify for an exemption, move to Box 2.

- Box 2 – Project complies with a previously approved plan that addresses GHG emissions and must: include a GHG reduction target consistent with AB 32; be consistent with transportation-related target adopted by CARB pursuant to SB 375; include a GHG inventory and mechanism for monitoring GHG emissions; include enforceable GHG requirements; include a mechanism for periodic updates to plan; and have a certified CEQA document. If the project is

consistent with a GHG plan that includes all of these elements, it is presumed to be insignificant for GHGs. If the project is not consistent with a GHG plan or there is no adopted GHG plan that includes all of the above elements, move to Box 3.

- Box 3 – The residential/commercial project must meet all of the following performance standards or equivalent mitigation measures to be deemed insignificant for GHGs:

  - Construction – Project must meet an interim performance standard for construction- related emissions (performance standard not yet defined).

  - Operations – Project must meet the following performance standards: energy use performance standard defined in CEC's Tier II Energy Efficiency goal; an interim performance standard for water use (performance standard not yet defined); an interim performance standard for waste (performance standard not yet defined); and an interim performance standard for transportation (performance standard not yet defined).

AND

The project with performance standards or equivalent mitigation will emit no more than X MTCO2eq/yr (criterion to be developed). If the project does not qualify for any one of the performance standards or exceeds X MTCO2eq/yr, move to Box 4.

- Box 4 – Project is deemed significant and an EIR must be prepared.

For a detailed description of CARB's interim GHG significance threshold proposal, refer to the following URL: http://www.arb.ca.gov/cc/localgov/ceqa/meetings/102708/prelimdraftproposal102408.pdf.

CARB is currently accepting comments on its Draft Proposal and has scheduled a second public workshop on December 9, 2008. CARB staff currently anticipates taking their proposal to their Board in February 2009.

CHAPTER 4

CONSIDERATIONS WHEN ANALYZING GHG EMISSIONS

Introduction

GHG Analysis Recommendations

INTRODUCTION

As noted in Chapter 1, on June 19, 2008, OPR, in collaboration with the California Resources Agency, the California Environmental Protection Agency and the California Air Resources Board, released a *Technical Advisory* containing informal guidance for public agencies as they address the issue of climate change in their CEQA documents. With regard to analyzing GHG emission impacts OPR states,

"Each public agency that is a lead agency for complying with CEQA needs to develop its own approach to performing a climate change analysis for projects that generate GHG emissions. A consistent approach should be applied for the analysis of all such projects, and the analysis must be based on best available information… Lead agencies should determine whether greenhouse gases may be generated by a proposed project, and if so, quantify or estimate the GHG emissions by type and source."

Other than this general advice, the *Technical Advisory* does not provide explicit details for quantifying GHG emissions.

CAPCOA's White Paper provides a comprehensive discussion of modeling tools that are currently available for analyzing GHG emissions[3]. As indicated in the White Paper, no one model is currently available that is capable of estimating all of a project's direct and indirect GHG emissions. It is likely, however, that the Urban Emissions (URBEMIS) Model will be the most commonly used model for calculating GHG emissions because it currently calculates CO2 emissions (in addition to criteria pollutant emissions) during both construction and operation of proposed projects, it is publicly available, and already widely used in California. Statewide use of the URBEMIS model would provide consistency throughout California with regard to quantifying GHG emissions. For a list of currently available models that calculate GHG emissions and summaries of the capabilities, advantages, and disadvantages of each model refer to Table 10 on pages 75 through 78 in the CAPCOA White Paper.

The purpose of this chapter is to provide more explicit guidance to CEQA practitioners with regard to quantifying GHG emissions than OPR's *Technical Advisory*, while building on the information provided CAPCOA's White Paper.

GHG ANALYSIS RECOMMENDATIONS

Direct/Indirect Impacts

As noted in Chapter 3 of this Guidance Document, consistent with CEQA, indirect and direct impacts of the project, typically within California, are required to be analyzed in the CEQA document for a proposed project. The analysis of direct GHG impacts is

[3] For maximum transparency with regard to quantifying GHG emissions and disclosure to the public, SCAQMD staff recommends using only publicly available models.

relatively straightforward as onsite GHG sources or directly related offsite GHG sources, such as worker commute trips, are generally readily identifiable. Indirect GHG emission sources are less obvious, but may include some of the sources identified in the following paragraphs. In general, for most projects information on direct and indirect emissions may be available, rather than a full life-cycle analysis of emissions. The lead agency has typically been expected to address emissions that are closely related and within the capacity of the project proponent to control and/or influence.

Direct Impacts - are primary effects that are caused by a project and occur at the same time and place, such as emissions from boilers, heaters, or other onsite emissions sources. Direct impacts generated by a project may include offsite sources directly related to the project such as emissions from worker commute trips, haul truck trips to import raw materials and/or export finished products or other goods. The following paragraphs provide general guidance on quantifying direct GHG emissions.

CAPCOA's White Paper provides a comprehensive discussion of modeling tools that are currently available for analyzing GHG emissions. Further, no one model is currently available that is capable of estimating all of a project's direct and indirect GHG emissions. Although there are a number of modeling tools available to calculate GHG emissions the following discussion focuses on a combination of approaches using the URBEMIS model as the basis for analyzing GHG emission impacts. Other approaches for calculating GHG emissions can be used, as long as they are supported by scientific evidence and include publicly available information.

The URBEMIS model is a publicly available model that is currently used statewide to calculate criteria pollutant emissions from construction and operation activities for a wide variety of land use projects. The model is regularly updated through a collaboration of air pollution control agencies, including the SCAQMD, to reflect the most current data, methodologies, and emission factors for quantifying criteria pollutant emissions. The most current update to the model is URBEMIS2007 version 9.2.4, which quantifies CO2 emissions in addition to criteria pollutant emissions.

Currently, there are several disadvantages to using the URBEMIS model to calculate GHG emissions from a proposed project and, as a result, it should not be the only tool used to calculate GHG emissions. For example, currently the URBEMIS model only quantifies CO2 emissions and not other GHG pollutants, with the exception of methane from mobile sources, which is converted to CO2eq. emissions. Since CO2 emissions comprise the bulk of GHG emissions from most projects, URBEMIS GHG results are fairly representative of GHG emissions from a project.

To quantify mobile source emissions from on-road mobile sources, the URBEMIS model uses trip rate information from the Institute of Transportation Engineers Trip Generation Handbook (ITE, 2001) as the trip rate default factor for all land uses. ITE trip rate information is widely used and is considered legally defensible as they rely on substantial reports and surveys of trip rates in cities with little or no transit. As a result, the ITE trip rates are also considered to provide a conservative estimate of trip

rates and associated emissions. The model, however, treats each trip as a separate trip and doesn't consider that a single trip may be used for more than one purpose, referred to as "internalization." The model also does not fully account for interaction between land uses in its estimation of mobile source operational emissions. URBEMIS does allow the user to overwrite the default trip rates and characteristics with more project-specific data from a traffic study prepared for a project.

In spite of the disadvantages of the URBEMIS model described above, it can be used as the first step in quantifying GHG emissions for typical land use projects because it establishes default parameters for the most common emission sources from a project including construction equipment types and activity profiles, area of site disturbed during construction, building size, number vehicle trips, etc., if the level of information about the project is low. If more information about the project is available such as a precise profile of construction equipment and activity levels, number of vehicle trips based on a traffic study prepared for the project, etc., this information can be incorporated into the model. The model can then quantify CO2 emissions from both construction and operation.

The URBEMIS construction analysis quantifies criteria pollutant and CO2 emissions from both off-road sources (primarily construction equipment) and on-road sources (worker commute trips, haul truck trips, etc.). To further flesh out the construction analysis, the lead agency would have to identify emission factors for other GHG pollutants likely to be emitted during construction, i.e., methane and nitrous oxide[4], for both off-road and on-road emissions sources and then quantify the GHG emission results using spreadsheets or other available tools.

The off-road CO2 emission factors in the URBEMIS model are generated from CARB's off- road model (http://www.arb.ca.gov/msei/offroad/offroad.htm). Methane emission factors for off-road equipment can also be obtained from CARB's OFFROAD2007 model. CO2 and methane emission factors for off-road equipment that are based on CARB's OFFROAD2007 model can also be found on the SCAQMD's CEQA webpages at the following URL: http://www.aqmd.gov/ceqa/handbook/offroad/offroad.html. Other sources of off-road GHG emissions factors for equipment used in California may be used, as long as they are supported by scientific evidence and are publicly available.

The URBEMIS model is able to quantify mobile source CO2 emissions during construction from on-road mobile sources such as construction worker commute trips, heavy-duty truck trips to haul away demolition debris, soil hauling to and from the site etc., and during operation, primarily vehicle trips using ITE's Trip Generation Manual (ITE, 2001). The on-road CO2 emission factors in the URBEMIS model for both construction and operation are generated from CARB's on- road mobile source emissions model, EMFAC2007 (http://www.arb.ca.gov/msei/onroad/onroad.htm). Methane emission factors for on-road mobile sources can also be obtained from

[4] Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are not combustion emissions, so would not normally be emitted during construction.

CARB's EMFAC2007 model. CO2 and methane emission factors for on-road mobile sources that are based on CARB's EMFAC2007 model can also be found on the SCAQMD's CEQA webpages at the following URL: http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html.

The analysis of operation emissions from all types of land uses in the URBEMIS model focuses primarily on mobile source emissions and some area sources. The model does not quantify emissions from stationary sources. For stationary sources that require a permit from the SCAQMD, emission calculation procedures and methodologies are available in the SCAQMD's Best Available Control Technology Guidelines (http://www.aqmd.gov/bact/partd7-9-2004update.pdf). Examples of facilities that use stationary sources requiring a permit from the SCAQMD include: fossil fuel power plants[5], cement plants, landfills, wastewater treatment plants, gas stations, dry cleaners and industrial boilers. The SCAQMD has procedures and methodologies for projects subject to SCAQMD permits to calculate criteria pollutants and air toxics. It is anticipated that these same procedures and methodologies could be extended to estimate a permitted facility's GHG calculations. For are any stationary and area sources that do not require SCAQMD permits, the same methodologies used for permitted sources could be used. It will be necessary to contact the SCAQMD to obtain information on GHG emission calculation methodologies applicable to stationary source equipment.

Indirect Impacts - Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems (CEQA Guidelines §15358)(a)(2)). The examples of facilities that use stationary sources requiring a permit from the SCAQMD that may contribute to direct environmental impact (fossil fuel power plants, cement plants, landfills, wastewater treatment plants, gas stations, dry cleaners and industrial boilers) may also contribute to indirect impacts and, therefore, should be included, as necessary in the CEQA analysis of GHGs.

Quantification Methodologies and GHG Emission Factors

Methodologies for calculating GHG emissions and GHG emission factors are currently not readily available. Until such time as GHG calculation methodologies and emission factors become well established and more readily available, lead agencies may want to consult the following references to identify acceptable methodologies and emission factors.

1. The first useful reference for GHG emission factors for stationary sources is EPA's Air Pollutant (AP)-42, which is a compilation of air pollutant emission

[5] According to CEQA Guidelines §15227, CEQA does not apply to projects outside of California. The California Attorney General's Office has rendered an opinion stating that the definition of the environment in CEQA does not stop at the borders of California. Further, California public agencies that take an action outside of California is still bound by the requirements of CEQA to prepare an EIR if the action may cause a significant effect on the environment.

factors for stationary point and area sources. Each of the first 13 chapters of AP-42 is dedicated to a specific source activity such as solid waste disposal, petroleum industry, and metallurgical industry. Since the publication of the fifth edition (and supplementals) in 2001, there have been a number of updates to the various specific stationary sources such as hot asphalt plants, organic liquid storage tanks, and coke production. In addition to the criteria pollutant emissions, some of the updated AP-42 chapters provide GHG emission factors for a variety of sources. For example, Chapter 15 of AP-42 focuses on GHG emissions from biogenic sources such as soils, termites, lightning, and enteric fermentation (animal digestive fermentation).

2. Second, the California Climate Action Registry (C-CAR) has prepared a General Reporting Protocol (GRP), which is a relatively easy-to-follow user's manual that outlines the principles, concepts, calculation methodologies and procedures required for effective participation in the California Registry. The appendices of the GRP provide GHG emissions factors, specifically CO2, CH4 and N2O, for electricity use, mobile combustion and stationary combustion based on fuel usage type.

3. Third, a thorough internet search should be conducted to find reliable sources of emissions factors that would assist in accurately determining GHG emissions from a specific source being evaluated. Again, all potential GHGs, such as CO2, CH4 and N2O, should be evaluated to the best of one's ability to locate dependable information.

4. Finally, a material balance approach also may provide reliable average emission estimates for specific sources. A material balance is when one accounts for (or "balances") all the materials going into and coming out of the process in order to make a credible emissions estimation. For some sources, a material balance may provide a better estimate of emissions especially in situations where a high percentage of material is lost to the atmosphere (e. g., sulfur in fuel, or solvent loss in an uncontrolled coating process.) In other cases, material balances may be inappropriate where material is consumed or chemically combined in the process, or where losses to the atmosphere are a small portion of the total process throughput.

Reporting GHG Emissions – Daily vs. Annual Emissions

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, significance thresholds are based on daily emissions because attainment or non-attainment is based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short term exposure effects on human health, e.g., one-hour and eight-hour. Since the half-life of CO2 is approximately 100 years, the effects of GHGs are longer-term, affecting global climate over a relatively long time frame (see also Table 3-1).

Typical GHG emission inventories (EPA5, ARB6, etc.) represent directly emitted GHGs during a given year. As a result, the current convention is to present GHG emissions as annual emissions. The URBEMIS model can be set to calculate annual emissions for a project. When using the URBEMIS model to calculate annual GHG emissions, it may be useful to modify the trip rate for each land use using a weighted trip rate average to more accurately reflect annualized trip rates. A weighted trip rate average reflects the trip rates during the week, as well as trip rates during Saturdays and Sundays. Trip rate information for weekdays and weekend days can be found in the ITE Trip Rate Handbook.

CHAPTER 5

CONCLUSION

Introduction

Future Action Items

INTRODUCTION

CEQA Guidelines §15064.7(a) encourages lead agencies to establish thresholds of significance to determine the significance of an environmental impact. Further, thresholds of significance to be adopted for general use as part of the lead agency's environmental review process must be adopted by ordinance, resolution, rule, or regulation, and developed through a public review process and be supported by substantial evidence (CEQA Guidelines §15064.7(b)). Staff's proposed interim GHG significance threshold proposal has been developed through a public process consisting of a series of Stakeholder Working Group meetings. Staff proposals have been modified over time based on written and oral feedback from the Working Group. Staff's intent was to reach consensus to the extent feasible, but for some items staff could not find common ground with some of the stakeholders.

The next immediate step for SCAQMD staff is to present a final interim GHG significance threshold proposal to the SCAQMD Governing Board for consideration. If the Governing Board approves staff's final interim GHG significance threshold proposal, then staff will embark on a number of short-term and intermediate term activities to provide outreach to public agencies that might use staff's interim GHG significance threshold to determine whether or not their projects' GHG emissions are significant, periodically revisit and revise as necessary the interim proposal, and accommodate stakeholders' requests for more information on GHG calculation methodologies and mitigation measures. The following sections provide discussions on future anticipated action items

FUTURE ACTION ITEMS

Interim GHG Significance Threshold Outreach Program

It is currently anticipated that staff's interim GHG significance threshold proposal will be presented to, and considered by the Board at the November 7, 2008 public hearing. Consistent with other significance threshold proposals adopted by the Governing Board, if the draft GHG significance threshold proposal is adopted, staff will meet with local cities, councils of governments, and leagues of cities to discuss the staff proposal and address any questions or concerns.

Once the interim GHG significance threshold is adopted, this Guidance Document will be posted on the SCAQMD's CEQA web pages. Staff will also send notice of the adoption of the staff proposal to all agencies, organizations, and individuals on the SCAQMD's CEQA "Interested Parties" mailing list. In addition, it is expected that staff will prepare and make available an informational brochure that summarizes information about the interim GHG significance proposal in addition to this Guidance Document.

Starting in January 2009, as part of its intergovernmental review (IGR) responsibilities under CEQA, where the SCAQMD reviews and CEQA documents prepared by other public agencies, SCAQMD will begin more thorough evaluations of CEQA documents with regard to their GHG analyses and the basis by which they make a determination of significance. Staff will begin recommending use of the staff's interim GHG significance threshold proposal or other available GHG significance thresholds based on substantial evidence in comment letters on notices of preparation of an EIR. As of March 1, 2009, staff will formally recommend use of staff's interim GHG significance threshold proposal or other available GHG significance thresholds based on substantial evidence in comment letters on NDs and MNDs. As of July 1, 2009, staff will formally recommend use of staff's interim GHG significance threshold proposal or other available GHG significance thresholds based on substantial evidence in comment letters on EIRs.

Compile Lists of GHG Design Features and Mitigation Measures

CEQA Guidelines §15126.4 requires an EIR to "describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy." Ideally, it is desirable to avoid impacts altogether through incorporating design features into the proposed project. Because staff's recommended interim GHG significance threshold includes performance standards (see tier 4 compliance options 1 and 3) or a project proponent may try to reduce GHG emissions to less than the applicable screening levels, mitigation measures or design features are important components of the overall GHG significance threshold strategy. As a result, a number of GHG Working Group stakeholders has requested that SCAQMD compile lists of design features or mitigation measures to assist with reducing GHG emissions for all land use types.

In response to the request from GHG Working Group stakeholders to develop GHG design features and mitigation measures, over the next year SCAQMD staff will compile lists of GHG reduction strategies, including control efficiencies, by sector and make the lists available online with other recommended mitigation measures. There is already a robust body of mitigation measures available (see in particular the CAPCOA bullet point discussion below), but in most cases, they do not include control efficiencies. SCAQMD staff will use the following mitigation sources as a basis from which to compile mitigation strategies.

- **CEQA Guidelines, Appendix F –** this appendix includes a list of general energy conservation measures that may be used as a basis to identify GHG reduction strategies. The measures do not contain GHG control efficiencies, so they would need further review to determine if control efficiencies are available.

- **CAPCOA White Paper –** this document provides a comprehensive discussion of GHG reduction strategies and specific mitigation measures are listed in Table 16 in Appendix B. The mitigation measures are grouped by emissions source type, such as transportation measures, parking measures, commercial and residential design features, etc. Table 16 also provides other useful information about each

mitigation measure including source of each measure, comments and descriptions about each control measure, etc. Most importantly, for many of the mitigation measures CAPCOA has included an emission reduction score. In most cases, the emission reduction score is given as a range. As a result, further evaluation would be necessary to provide a single more precise emission reduction score or a defensible average. Otherwise, it is likely that the high end of the emission reduction score would be used.

- **CARB -** is actively working to develop and adopt GHG protocols to support the Climate Change Program. CARB is working in collaboration with other agencies and organizations, including the California Climate Action Registry, to adopt consistent and standardized methods to accurately report GHG emissions. There are two kinds of GHG protocols, a reporting protocol and a project protocol. The project protocol may be useful as it sets standards and provides specific guidance to define GHG reduction projects and quantify and report GHG reductions from project activities. Some example protocols include manure management and urban forestry. It is expected that additional protocols will be developed and adopted by CARB. It is also expected that CARB's Scoping Plan may provide guidance on regulatory guidance that could be used to develop GHG emission reduction measures. GHG reduction strategies that may also serve as GHG mitigation measures to be developed by CARB over the next two years are shown in Table 5-1.

Table 5-1
California Air Resources Board GHG Emission Reduction Strategies

Strategy	Description of Strategy
Other Light Duty Vehicle Technology	New standards would be adopted to phase in beginning in the 2017 model year
Hydrofluorocarbon Reduction	1) Ban retail sale of HFC in small cans; 2) Require that only low global warming potential (GWP) refrigerants be used in new vehicular systems; 3) Adopt specifications for new commercial refrigeration; 4) Add refrigerant leak-tightness to the pass criteria for vehicular Inspection and Maintenance programs; 5) Enforce federal ban on releasing HFCs.
Transportation Refrigeration Units, Off-Road Electrification, Port Electrification	Strategies to reduce emissions from TRUs, increase off-road electrification, and increase use of shore-side/port electrification.
Manure Management	San Joaquin Valley Rule 4570 (adopted 6/15/06) reduces volatile organic compounds from confined animal facilities through implementation of control options.
Alternative Fuels: Biodiesel Blends	CARB would develop regulations to require the use of 1 to 4 percent biodiesel displacement of California diesel fuel.

Table 5-1 (Concluded)
California Air Resources Board GHG Emission Reduction Strategies

Strategy	Description of Strategy
Alternative Fuels: Ethanol	Increased use of ethanol fuel.
Heavy-Duty Vehicle Emission Reduction Measures	Increased efficiency in the design of heavy duty vehicles and an education program for the heavy duty vehicle sector.
Reduced Venting and Leaks in Oil and Gas Systems	Rule considered for adoption by the Air Pollution Control Districts for improved management practices.
Hydrogen Highway	The California Hydrogen Highway Network (CA H2 Net) is a State initiative to promote the use of hydrogen as a means of diversifying the sources of transportation energy.
Achieve 50% Statewide Recycling Goal	Achieving the State's 50 percent waste diversion mandate as established by the Integrated Waste Management Act of 1989, (AB 939, Sher, Chapter 1095, Statutes of 1989), will reduce climate change emissions associated with energy intensive material extraction and production as well as methane emission from landfills. According to the California Integrated Waste Management Board, in 2005 the statewide waste diversion rate was 52 percent.[6]
Landfill Methane Capture	Install direct gas use or electricity projects at landfills to capture and use emitted methane.
Zero Waste - High Recycling	Additional recycling beyond the State's 50% recycling goal.

- CEC and CPUC – These agencies are actively developing GHG emission reduction strategies that may also be used to develop GHG mitigation measures for specific energy production sources. Examples of CEC and CPUC GHG emission reduction strategies are shown in Table 5-2.

Other sources of potential GHG emission reduction measures will be evaluated and incorporated, as applicable into any GHG mitigation measure lists developed by the SCAQMD.

[6] CIWMB, 2007; http://www.ciwmb.ca.gov/LGCentral/Rates/Diversion/2005/Default.htm

Table 5-2
GHG Emission Reduction Strategies Implemented by CEC and CPUC

Strategy	Description of Strategy
ENERGY COMMISSION (CEC)	
Building Energy Efficiency Standards in Place and in Progress	Public Resources Code 25402 authorizes the CEC to adopt and periodically update its building energy efficiency standards (that apply to newly constructed buildings and additions to and alterations to existing buildings).
Appliance Energy Efficiency Standards in Place and in Progress	Public Resources Code 25402 authorizes the Energy Commission to adopt and periodically update its appliance energy efficiency standards (that apply to devices and equipment using energy that are sold or offered for sale in California).
Cement Manufacturing	Cost-effective reductions to reduce energy consumption and to lower carbon dioxide emissions in the cement industry.
Municipal Utility Strategies	Includes energy efficiency programs, renewable portfolio standard, combined heat and power, and transitioning away from carbon intensive generation.
Alternative Fuels: non-Petroleum Fuels	Increasing the use of non-petroleum fuels in California's transportation sector, as recommended in the CEC's 2003 and 2005 Integrated Energy Policy Reports.
PUBLIC UTILITIES COMMISSION (PUC)	
Accelerated Renewable Portfolio Standard (33 percent by 2020)	The Governor has set a goal of achieving 33 percent renewables in the State's resource mix by 2020. The joint PUC/Energy Commission September 2005 Energy Action Plan II (EAP II) adopts the 33 percent goal.
California Solar Initiative	The solar initiative includes installation of 1 million solar roofs or an equivalent 3,000 MW by 2017 on homes and businesses, increased use of solar thermal systems to offset the increasing demand for natural gas, use of advanced metering in solar applications, and creation of a funding source that can provide rebates over 10 years through a declining incentive schedule.
Investor-Owned Utility	This strategy includes energy efficiency programs, combined heat and power initiative, and electricity sector carbon policy for investor owned utility.

Periodically Review the Interim GHG Significance Threshold

SCAQMD staff will periodically review and revise staff's GHG proposal to incorporate applicable updated information on GHGs and GHG reduction strategies resulting from regulatory requirements or advances in technology. Some areas of the current proposal that may be reevaluated include the tier 3 screening levels, and the tier 4 compliance option 1 GHG reduction target objective. Further, staff will evaluate whether or not sector based performance standards can be developed for tier 4 compliance option 3.

If a statewide GHG significance threshold is developed by CARB, staff will review that threshold and report to the Governing Board by March 2009 considering such a

threshold for adoption.~~regarding any implementation issues and ways to transition into the recommended GHG significance threshold within six months of formal approval by the CARB Board~~.

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APPENDIX A

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APPENDIX B

SUMMARIES OF WORKING GROUP MEETINGS

WORKING GROUP MEETING #1 (APRIL 30, 2008)

At the first Working Group meeting SCAQMD staff presented the Working Group with a number of policy objectives and design criteria for consideration to establish the framework for developing a GHG significance threshold. Policy objectives include the following concepts. First, the GHG significance threshold should minimize environmental degradation, that is, it should not make impacts worse. To this end, it may be useful to develop a GHG significance threshold that achieves GHG emissions reductions that are consistent with the goals of AB 32 estimated to be approximately 30 percent reduction of GHG emissions from business-as-usual. Although CEQA or a GHG significance threshold established pursuant to CEQA may be useful tools in reducing GHG emissions, they would act in parallel with regulatory requirements, e.g., AB 32, but they do not replace them. As a result, there is no requirement that a GHG significance threshold must reduce GHG emissions consistent with AB 32 or EO S-3-05.

In addition to policy considerations, a number of GHG significance threshold design criteria were also considered. An important consideration in developing a GHG significance threshold is the potential administrative burden it may create on lead agencies through increased resource impacts such as increased costs and staff if the significance threshold is established too low. For example, a zero threshold might result in eliminating or substantially reducing the number of projects that qualify for a categorical exemption, a negative declaration, or a mitigated negative declaration. Other design considerations discussed included establishing a single GHG threshold, such as a "bright line" numerical threshold or multiple thresholds, such as the tiered approaches identified by CAPCOA, etc.

WORKING GROUP MEETING #2 (MAY 28, 2008)

At the second Working Group meeting, staff presented design criteria recommendations based on the discussion at the first Working Group meeting and correspondence received subsequent to the first Working Group meeting. With regard to analyzing life cycle GHG emissions, staff's initial recommendation was to exclude an analysis of life cycle emissions because life cycle process are not well established. Instead, the GHG emissions analysis should focus on direct and indirect impacts, consistent with current CEQA requirements (CEQA Guidelines §15064(d)). Feedback from the Working Group suggested that a CEQA analysis may be considered deficient without making an effort to conduct a life cycle analysis. Further, if life cycle emissions data are not available, the lead agency should note this consider further analysis speculative and terminate the discussion (CEQA Guidelines §15145).

Another design criteria recommendation made by staff was to take into consideration the administrative burden and resources impacts when establishing a GHG significance threshold. Staff recommended that the GHG significance threshold

should not be set too low, which could result in all projects going through the EIR process. It was pointed out that requiring an EIR for all projects does not necessarily result in more mitigation, no meaningful mitigation may be available for small projects, and it may provide a disincentive for implementing mitigation if the measures are unable to reduce GHG impacts to less than significant.

Other design criteria recommended by staff included analyzing the six Kyoto GHGs, any GHG significance threshold established would be considered interim and would be periodically evaluated and updated as necessary, etc. Staff also introduced the concept of preferred GHG mitigation strategies using a hierarchy from the most to least preferred strategies as shown below.

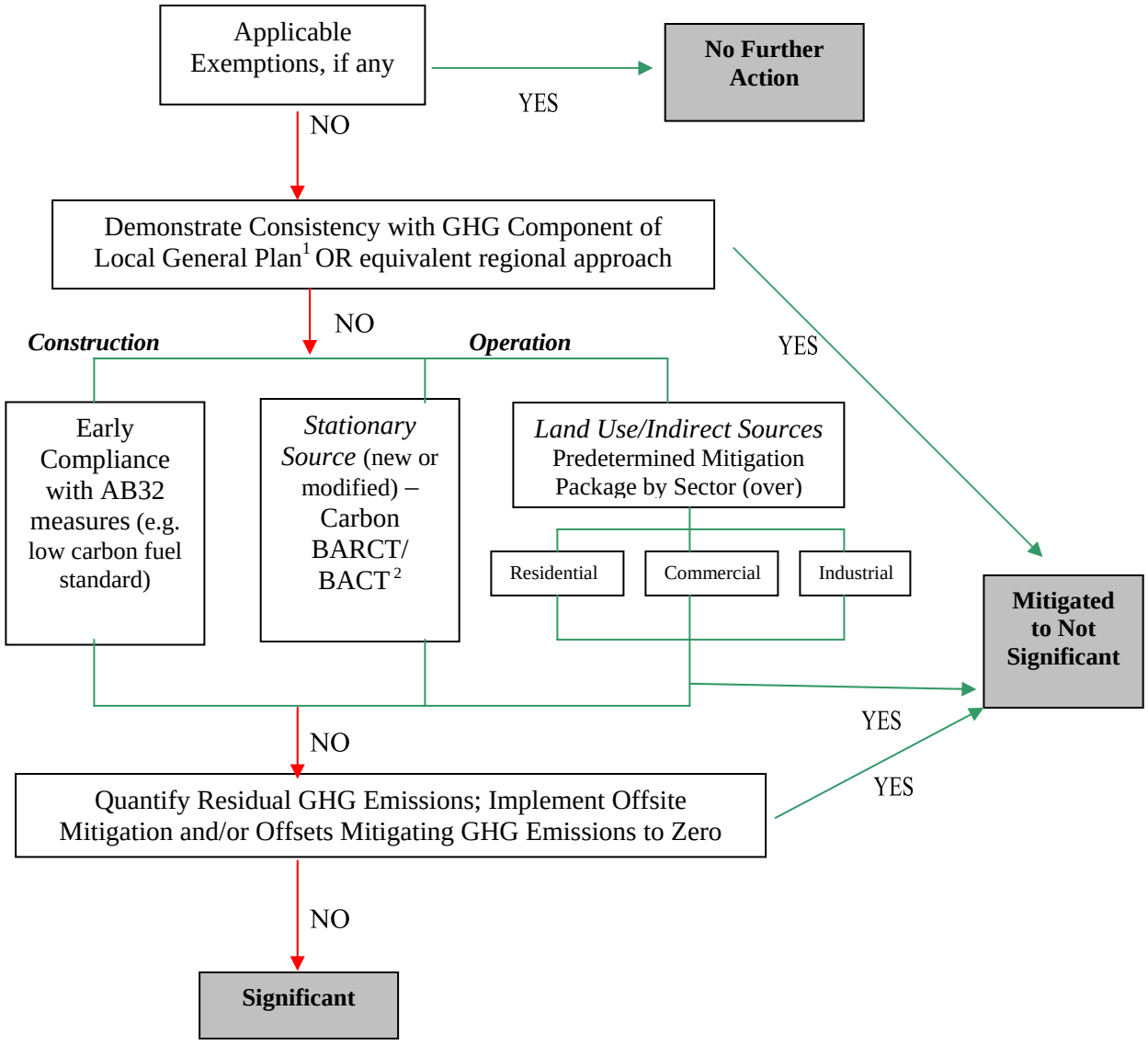
1. Incorporate GHG reduction strategies into project design
2. Mitigate GHGs from other onsite sources for modification projects
3. Mitigate offsite GHG emission reduction projects
4. Mitigate both construction & operational GHG impacts
5. Consider feasible mitigation based on economic factors (cost) pursuant to CEQA Guidelines §15364
6. Purchase acceptable GHG offsets with preference toward GHG reduction projects occurring in-basin or in-state (offset cost a consideration). The following points should be considered:
    a. Offset market still developing, so it is necessary to ensure offsets are obtained from a credible source
    b. Offsets should be provided for at least 10 years of project operation (see SJVAPCD indirect source Rule 9510 §6.2 mitigation requirements)

Finally, SCAQMD staff introduced the initial staff proposal. The initial staff proposal consisted of a tiered approach, similar to CAPCOA's Approach 2 with mandatory GHG mitigation measures. Each tier of this proposal is briefly described in the following bullet points and shown graphically in Figure B-1.

- The first tier consists of evaluating whether or not the project qualifies for any applicable exemption under CEQA. For example, SB 97 specifically exempts a limited number of projects until it expires in 2010. If the project qualifies for an exemption, no further action is required. If the project does not qualify for an exemption, then move to the next tier.

Figure B-1
Initial Staff Proposal – Proposed Tiered Approach – May 28, 2008

Significance determination of Cumulative Impacts from GHG emissions:



1. Local General Plans, at a minimum, must comply with AB32 reduction goals; have been analyzed under CEQA, and have a certified Final CEQA document; emission estimates approved by CARB or SCAQMD; include a GHG inventory tracking mechanism; and a commitment to remedy the excess emissions if AB32 goals are not met.

2. SCAQMD will work with CAPCOA to develop a list of mitigation measures.

- The second tier consists of determining whether or not the project is consistent with a GHG reduction plan that is part of a local general plan for example. The GHG reduction plan must, at a minimum, comply with AB 32 reduction goals; include emission estimates approved by CARB or SCAQMD, have been analyzed under CEQA, and have a certified Final CEQA document. Further, the GHG reduction plan must include a GHG inventory tracking mechanism; process to monitor progress in achieving GHG emission reduction targets, and a commitment to remedy the excess emissions if AB 32 goals are not met (enforcement). If the proposed project is consistent with the local GHG reduction plan, it is not significant for GHG emissions.

  The concept of consistency with a GHG reduction plan, is similar to the concept of consistency in CEQA Guidelines §15125(d). If the proposed project does not comply with the local GHG reduction plan or no GHG reduction plan has been adopted, then move to the third tier.

- Under the third tier there are three options that can be used to demonstrate that a project would not have significant emissions. The first significance option is early compliance with AB 32 Scoping Plan measures. The second significance option, primarily for stationary source equipment, would be to install carbon best available retrofit control technology (BARCT) or best available control technology (BACT). Carbon BARCT/BACT would be established by the SCAQMD. The third significance option for industrial, commercial, and residential land use projects would be to implement a menu of prescribed mitigation measures. Mitigation measures would be developed for each land use sector by SCAQMD staff. Implementing one of these three options would result in a determination that GHG emission impacts from the proposed project are not significant. If the proposed project is unable to implement any one of these three options or cannot fully implement any option, then it would move to the fourth tier.

- Under the fourth tier, the lead agency would quantify GHG emissions from the project and implement offsite mitigation (GHG reduction projects) or purchase offsets. Under this tier, GHG emission impacts the lead agency would be required to mitigate or offset GHG emissions to zero. If GHG emissions can be offset to zero, GHG emissions from the project are concluded to be insignificant. If GHG impacts cannot be reduced to zero, the project is concluded to be significant for GHGs.

WORKING GROUP MEETING #3 (JUNE 19, 2008)

Subsequent to Working Group meeting #2, SCAQMD staff received feedback on the initial staff proposal. Issues and concerns raised by the stakeholders on the initial staff proposal were addressed at the third Working Group meeting and are summarized in the following bullet points.

- The staff proposal does not explicitly state any quantitative or qualitative target objectives. If there are no explicit target objectives, how is it possible to determine whether or not a project is insignificant for GHG emissions?

- Concerns were raised regarding the lack of detail relative to the sector-specific mitigation measures and the potentially lengthy lag time between implementing the GHG significance threshold and developing the mitigation measures.

- For most projects, GHG emissions would not need to be calculated as long as the prescribed menu of sector-specific mitigation measures is implemented. Without quantifying GHG emissions and the control efficiencies of the mitigation measures, a project would be vulnerable to a "Fair Argument" that GHG emissions are still significant even after implementing prescribed mitigation measures.

- A CEQA document may be vulnerable in court if control efficiencies of mitigation measures are not identified.

- Is the staff proposal really a zero GHG significance?

  Based on Working Group feedback, staff presented revised staff proposal #1, which consisted of a tiered decision tree approach. The components of revised staff proposal #1 are described in the following bullet points and shown graphically in Figure B-2. As shown in Figure B-2, some of the tier components of the revised staff proposal are similar to those in the initial staff proposal.

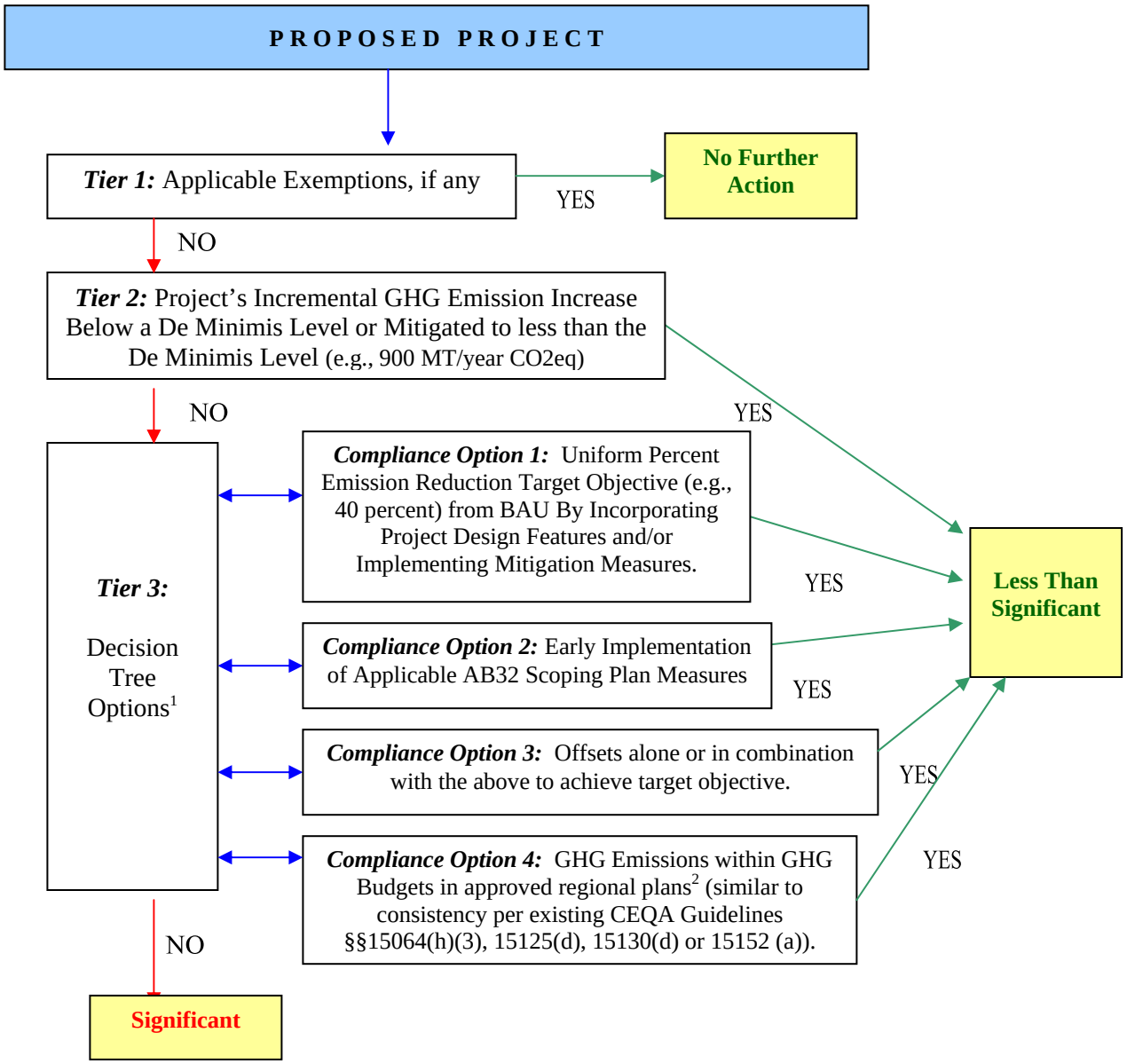
- **Tier 1 –** no change from the initial proposal.

- **Tier 2 –** is a new component of the revised staff proposal. Tier 2 attempts to identify small projects that would not likely contribute to significant cumulative GHG impacts. The de minimis or screening level of 900 metric tons per year is the level that is estimated by CAPCOA to capture 90 percent of the residential units or office space in pending application lists7. CAPCOA infers that projects that emit less than 900 metric ton per year would not likely be considered cumulatively considerable. Further, the 900 metric ton per year level would capture 90 percent

[7] Although the CAPCOA White Paper implies that 900 metric tons per year equates to a 90 percent capture rate, there is no explicit information provided in the White Paper that demonstrates this correlation. Indeed, the CAPCOA authors state that 900 metric tons, which represents approximately 50 residential units, corresponds to widely divergent capture rate percentile rankings depending on the project location (see discussion on page 43 of the White Paper). Percentile rankings were based on a survey of four cities in California. A project of 900 metric tons per year representing a 90 percent capture rate appears to be a working assumption for which there appears to be no factual basis. Further, although not explicitly stated, it is assumed that the 900 metric tons were derived using the URBEMIS2007 model. It should be noted that that the URBEMIS2007 model only quantifies CO2 emissions and direct emissions primarily from on-road mobile sources. It does not capture other GHG pollutants or indirect GHG emissions such as emissions from energy generation, water conveyance, etc. Therefore, it is likely that a 50-unit residential project would actually generate higher GHG emissions than 900 metric tons per year.

Figure B-2
Revised Staff Proposal #1 Tiered Decision Tree Approach – June 19, 2008

Significance Determination of Cumulative Impacts from GHG Emissions:



1. Substitution for equivalent reductions allowed.
2. Local General Plans or other local plans local plans that, at a minimum, comply with the overall target objective or the sector-based CARB Scoping Plan; have been analyzed under CEQA, and have a certified Final CEQA document; emission estimates approved by CARB or SCAQMD; include a GHG inventory; tracking mechanism; enforcement; and a commitment to remedy the excess emissions if commitments are not met.

of all pending projects, which means that 90 percent of all projects would have to implement GHG reduction measures.

If a project is less than 900 MT/year CO2eq or can mitigate to less than 900 MT/year CO2eq, it would be considered insignificant for GHGs. Projects larger than 900 MT/year CO2eq would move to tier 3.

- Tier 3 Decision Tree Options – consists of four decision tree options to demonstrate that a project is not significant for GHG emissions. The four compliance options are as follows.

  Compliance Option 1 – the lead agency would calculate GHG emissions for a project using a business-as-usual (BAU) methodology. Once GHG emissions are calculated, the project proponent would have to incorporate design features into the project and/or implement GHG mitigation measures to demonstrate a 40 percent reduction from BAU. A 40 percent reduction below BAU was selected for the following reason. To comply with the AB 32 requirement of reducing GHG emissions to 1990 levels, an approximately 30 percent reduction from current BAU is necessary.

  Since CEQA is not applicable to all GHG emission sources, i.e., existing projects that are not undergoing expansion or modifications, staff chose a 40 percent reduction below BAU requirement, which goes beyond the target GHG reduction objective of AB 32, but is still a potentially feasible GHG reduction for a variety of different projects.

  Compliance Option 2 – this option is the same as the early compliance with AB 32 option in the third tier of the initial staff proposal.

  Compliance Option 3 – this option is similar to the fourth tier of the initial staff proposal where GHG emissions would be reduced through offsite GHG reduction projects and/or use of offsets. This compliance option, however, would require offsetting GHG emissions by the same target objective as compliance option 1, that is, 40 percent below BAU instead of reducing GHG emissions to less than the de minimis or screening level.

  Compliance Option 4 – this option is the same as the consistency with the greenhouse gas reduction plan component in the second tier of the initial staff proposal.

  If the lead agency or project proponent cannot implement any of the compliance options in Tier 3, GHG emissions would be considered significant.

WORKING GROUP MEETING #4 (JULY 30, 2008)

Subsequent to Working Group meeting #3, SCAQMD staff received feedback on the revised staff proposal #1. Issues and concerns raised by the stakeholders on the initial

staff proposal were addressed at the third Working Group meeting and are summarized in the following bullet points.

- Compliance with a GHG reduction plan should not be a compliance option in Tier 3, but should be its own tier, earlier in the tiering process.

- There is a large disconnect between screening level and remaining emissions under the Tier 4 compliance options. For example, large projects that can reduce GHG emissions by the target objective of 40 percent would do so, which means GHG emissions would not be significant, could have substantially higher emissions than projects with GHG emissions less than the screening level.

- Compliance with a target objective should not be through offsets alone. Because of the uncertainties regarding the validity of offsets, preferred mitigation should consist of actual GHG emission reductions.

- The Tier 3 compliance option 1, GHG emissions reductions from BAU, is not the proper metric for determining significance. How can a lead agency be sure that the projected BAU emissions for a project are not artificially inflated to make it easier to achieve the required target objective?

- The Tier 3 compliance option 1, reducing GHG emission reductions from BAU, could penalize projects in environmentally progressive areas where BAU may be much lower than in other areas, thus, making it more difficult to achieve the target objectives.

Based on Working Group feedback and internal discussions, staff presented revised staff proposal #2, which further refined the previous tiered decision tree approach. The components of revised staff proposal #2 are described in the following bullet points and shown graphically in Figure B-3. As shown in Figure B-3, some of the tier components of the revised staff proposal are similar to those in the initial staff proposal.

- **Tier 1 –** no change from the initial proposal.

- **Tier 2 –** compliance option 4 in Tier 3 has been moved back a stand-alone tier.

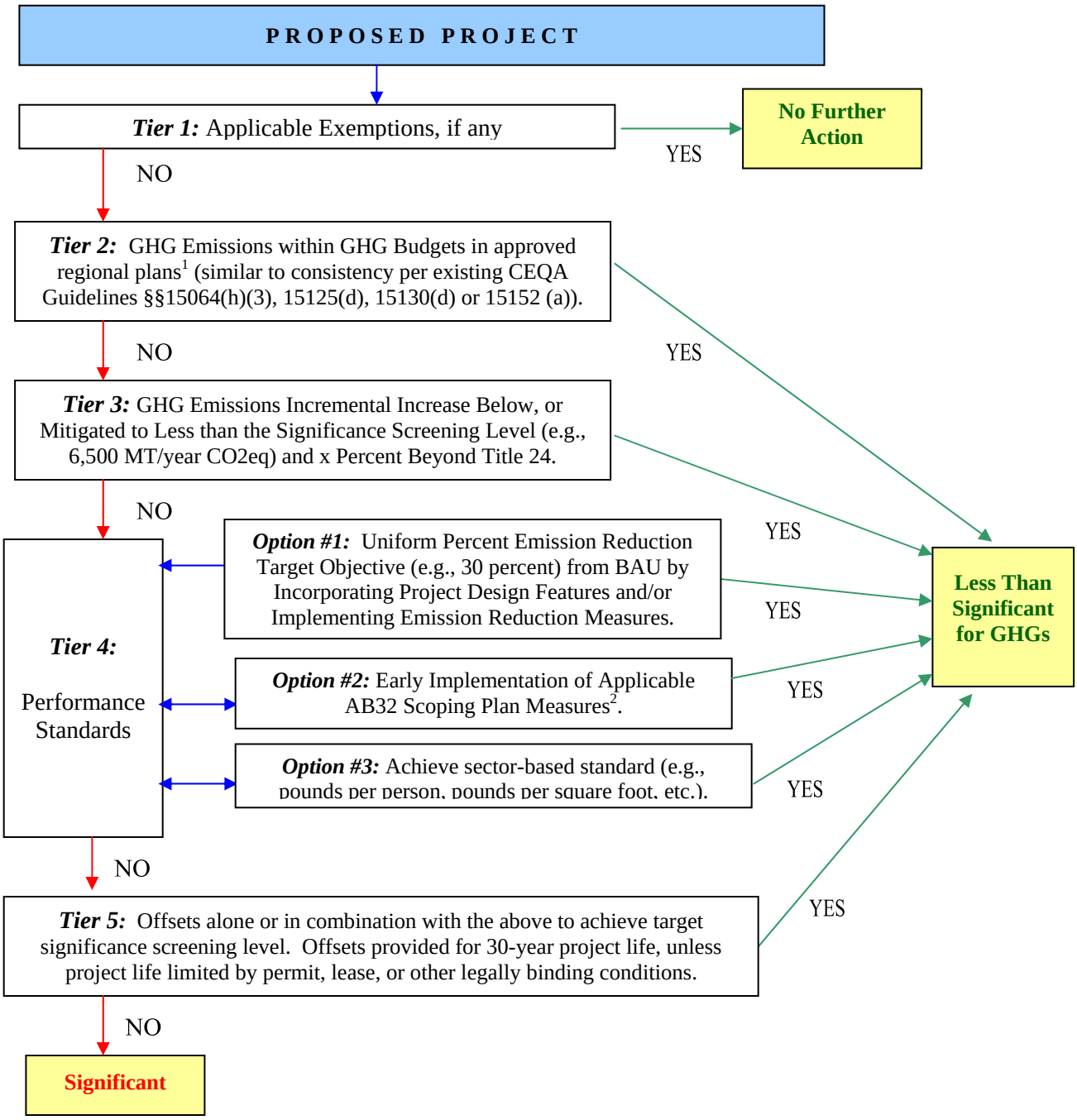
- **Tier 3 –** the screening level that was previously Tier 2 has been moved to Tier 3. In response to feedback from the Working Group, the screening level has been increased to 6,500 MT/year CO2eq. The new screening level was derived using the SCAQMD's existing NOx operational threshold as a basis. The daily NOx operational significance threshold, 55 pounds per day was annualized, which results in 10 tons of NOx per year. Using the URBEMIS2007 model, staff initially modeled a mixed-use project that emits just under 10 tons per year to determine what the equivalent CO2 emissions would be. Resulting CO2 emissions from the mixed use project were approximately 6,500 MT/year CO2. To further corroborate the 6,500 MT/year CO2 staff performed 19 modeling runs on a variety of projects including residential, commercial, industrial, and various combinations of land uses. In addition, since the analysis was an annual

analysis, a weighted trip rate was derived for each land use category to obtain a more accurate estimate of trip rates throughout the week. Although the results from the 19 modeling runs were approximately 16 percent higher than staff's original estimate of 6,500 MT/year CO2, 7,304 to 7,723 MT/year CO2, staff continued to recommend the 6,500 MT/year CO2 provides a margin of safety when deriving CO2 emissions based on the annualized NOx level of 10 tons per year and when evaluating different types of land use projects.

Projects with GHG emissions less than the screening level are considered to be small projects, that is, they would not likely be considered cumulatively considerable. However, because of the magnitude of increasing global temperatures from current and future GHG emissions, staff recommended that all projects must implement some measure or measures to contribute to reducing GHG emissions. Therefore, Tier 3 includes a requirement that all projects with GHG emissions less than the screening level must include efficiency components that reduce to a certain percentage beyond the requirements of Title 24 (Part 6, California Code of Regulations), California's energy efficiency standards for residential and nonresidential buildings.

- Tier 4 Performance Standards – Tier 3 from the revised staff proposal #1 has been moved to Tier 4 and renamed.

Figure B-3
Proposed Tiered Decision Tree Approach – July 30, 2008
Significance Determination of Cumulative Impacts from GHG Emissions:



1. Local General Plans or other local plans local plans that, at a minimum, comply with the overall target objective or the sector-based CARB Scoping Plan; have been analyzed under CEQA, and have a certified Final CEQA document; emission estimates approved by CARB or SCAQMD; include a GHG inventory; tracking mechanism; enforcement; and a commitment to remedy the excess emissions if commitments are not met.
2. Substitution for equivalent reductions allowed.

Compliance Option 1 – is essentially the same as the previously recommended, except that the target objective has been changed from reducing GHG emissions 40 percent below BAU to 30 percent below BAU to be more consistent with AB 32 target objectives.

Compliance Option 2 - – no change from the previous proposal.

Compliance Option 3 – this is a new compliance option and consists of establishing sector-based performance standards. For example, it may be possible to use the 1990 inventory required under AB32 to establish an efficiency standard such as pounds per person, pounds per worker, pounds per square feet, pounds per item manufactured, etc. When calculating GHGs from a project, if they are less than the established efficiency standard the project would not be significant relative to GHG emissions, while projects exceeding the efficiency standard would be significant.

Projects that cannot comply with any of the compliance options in Tier 4 would then move on to Tier 5.

- **Tier 5 –** consists generally of the Tier 3 compliance option 3 from the previous staff proposal. The only difference is that the project proponent would be required to provide offsets for the life of the project, which is defined as 30 years. If the project proponent is unable to obtain sufficient offsets, incorporate design features, or implement GHG reduction mitigation measures, then GHG emissions from the project would be considered significant.

WORKING GROUP MEETING #5 (AUGUST 27, 2008)

Subsequent to Working Group meeting #3, SCAQMD staff received feedback on the revised staff proposal #2. Issues and concerns raised by the stakeholders on the initial staff proposal were addressed at the third Working Group meeting and are summarized in the following bullet points.

- A recommendation was made to modify the target objective of Tier 5 to be consistent with the target objective of Tier 4 compliance option 1, that is require emissions to be offset 30 percent from BAU rather than offset down to the screening level.

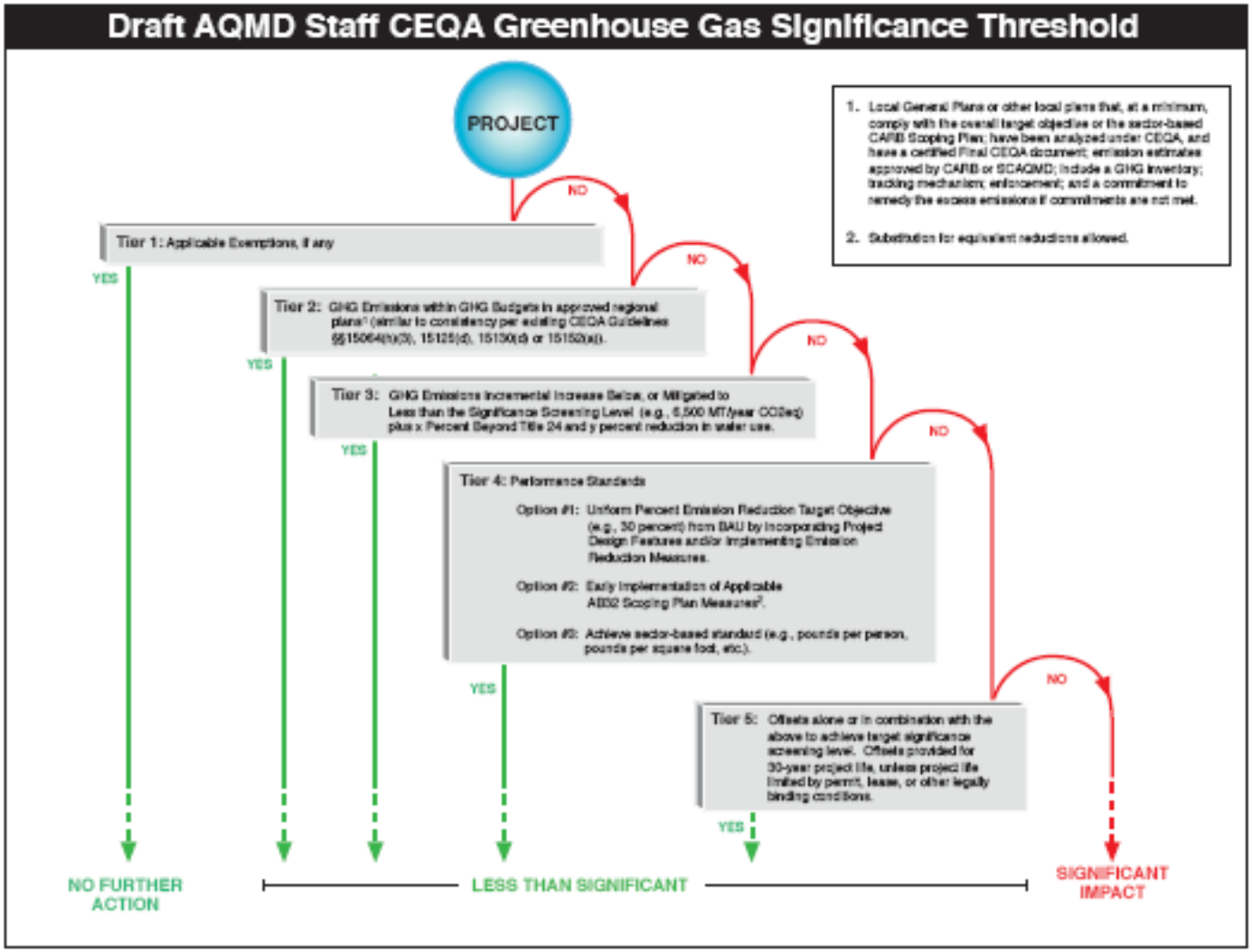
- A Working Group member asked for clarification on the early implementation of applicable AB 32 Scoping Plan measures in Tier 4-Option 2. In addition, a question was asked regarding whether or not this compliance option was applicable after the requirements of AB 32 have become effective.

At Working Group meeting #5, staff presented revised staff proposal #3, which consisted primarily of minor refinements to the previous tiered decision tree approach

in revised staff proposal #2. The components of revised staff proposal #3 are shown graphically in Figure B-4.

Aside from changing the graphic layout of the staff proposal to make it easier to understand, revised staff proposal #3 has only one minor modification. A second energy efficiency requirement has been added to the screening level in Tier 3. In addition to requiring projects to go a certain percentage beyond Title 24, projects would also have to reduce by a specified percentage electricity demand from water use, primarily electricity used for water conveyance.

Figure B-4
Revised Staff Proposal #3 Tiered Decision Tree Approach – August 27, 2008



The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 40

Overview of the Rental Assistance Demonstration (RAD) Program

June 2014

Summary

Challenge:

The Public Housing program has remained underfunded for more than 30 years, leading to ~$26 billion capital backlog

The nation's Public Housing stock is struggling, and has significant capital repair needs

New Tool:

Conversion to the project-based Section 8 programs provides an opportunity to invest billions into the public housing stock

The **Rental Assistance Demonstration** (RAD) allows PHAs to undertake this conversion for some units

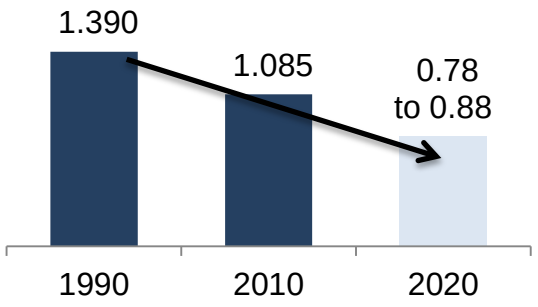
HUD has achieved its goal of standing up this new tool, attracting many PHAs to participate

Only 60,000 units are currently able to convert; lifting cap will make the RAD tool available to all PHAs who want to use it

Many challenges with the public housing stock

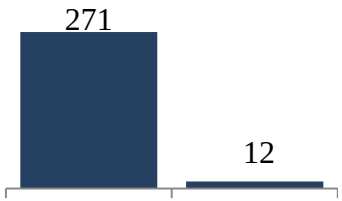
Losing affordable units – National

Public housing stock
Millions of units

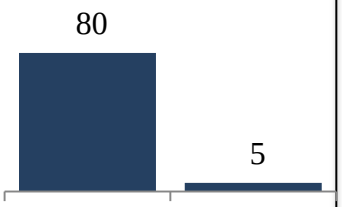


Unpredictable and insufficient funds – Examples

San Francisco
$ M, 2012



El Paso
$ M, 2014



Challenging living conditions – El Paso example

Machuca: 49 out of 122 units (40%) offline

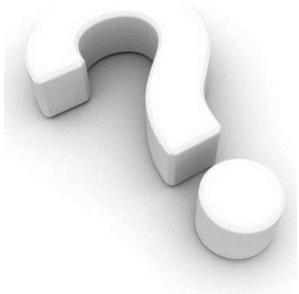
Tays: 11 out of 359 units offline due to structural damage and asbestos

- Average age of public housing stock is 43 years
- The inability to invest means worsening living conditions for tenants
- Funding levels of operating and capital funds are unpredictable
- Chronic underfunding over more than 30 years has only gotten worse
- ~$26 billion of capital investment is necessary to meet current needs

Source: *Capital Needs in the Public Housing Program*, Abt Associates Inc., 2010; Housing Authority of El Paso; San Francisco Housing Authority

RAD is one of several options available to PHAs

Options for the public housing stock



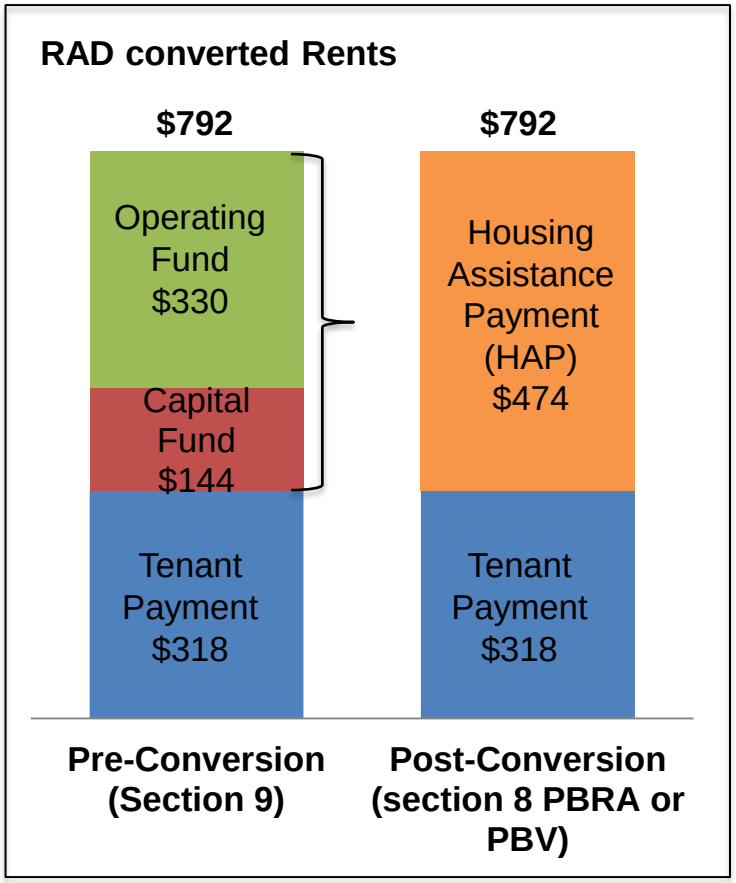
RAD	***Allows conversion to project-based section 8 programs (PBRA/PBV)[1]***
Mixed Finance	*Allows properties to leverage private capital, but remain under section 9[1] funding platform*
Section 22	*Voluntary conversion to section 8 through housing voucher programs[2]*
Section 18	*Demolition and disposition program, conversion through tenant protection vouchers (TPVs)[1]*
Hope VI/Choice Neighborhoods	*Major revitalization program with funding*
Maintain current status	*Sustainability relies on increases in Operating Fund and Capital Fund appropriations*

1. See Appendix for definitions
2. Allows PHAs to convert if costs under section 8 are cheaper; limited by how many vouchers are available across entire program in any given year

Source: HUD

Why conversion to project-based section 8?

RAD allows a change in funding platform[1]



Numerous benefits to conversion

1. Allows preservation of affordable housing units as opposed to vouchering out tenants and/or demolition

2. PBRA and PBV are well established programs
   a. PBRA alone has 17,400 contracts in operation
   b. Established industry of lenders, owners and stakeholders
   c. More than $30 billion of private capital already deployed

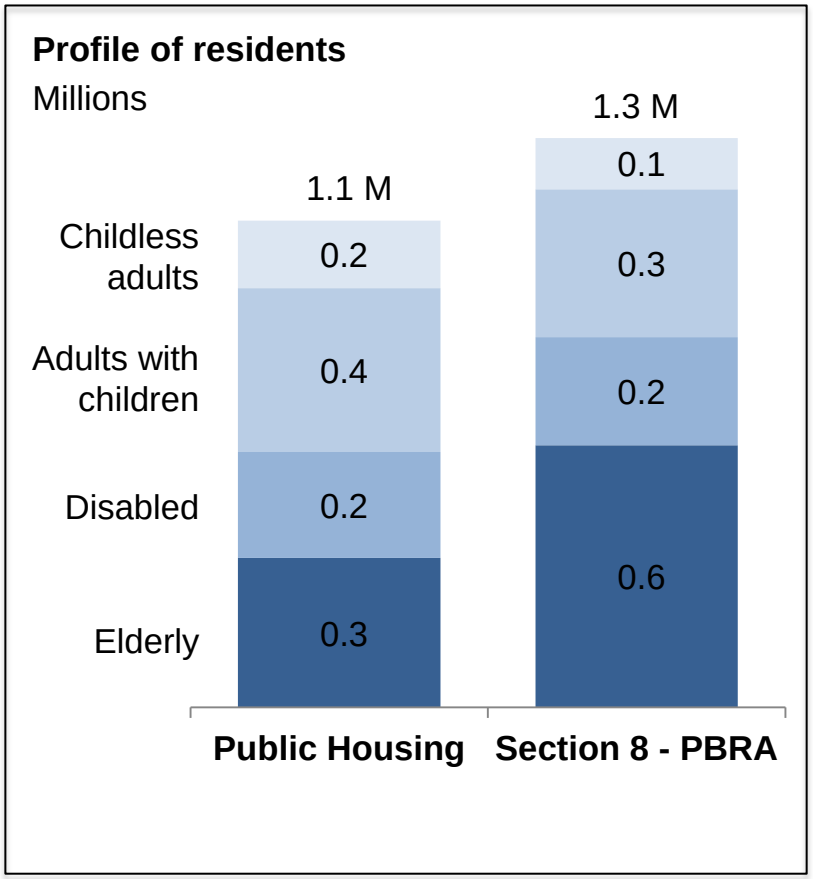
3. Greater funding certainty and access to private capital

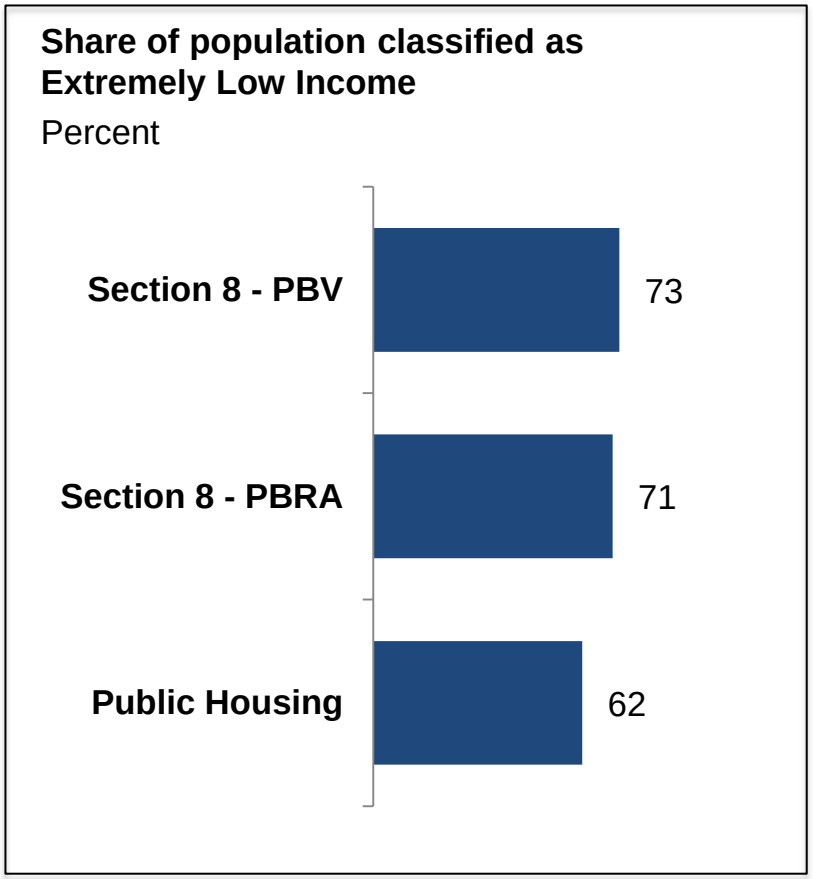
4. Greater operational flexibility to empower PHAs to serve communities

1. Section 9 (current Public Housing funding platform) funds properties through the Operating Fund and Capital Fund; when converted to project-based Section 8, those funds are transferred into a Housing Assistance Payment (HAP) contract (see Appendix for further detail)

Source: HUD

Section 8 residents are very similar to section 9 (public housing) residents





Source: Center on Budget and Policy Priorities; HUD

The potential impact of conversion to project-based section 8 via RAD for existing applicants[1]

$6 B	Infusion of capital investment into the public housing stock[1]
$25,000	Average investment per unit (per family)
120,000	Jobs created across communities nationwide[2]
180,000	Families and elderly citizens in better housing
0	In additional federal funding

1. Based on RAD applications submitted covering 180,000 units
2. Multiplier of 20 jobs for every $1 million of capital investment

Source: HUD

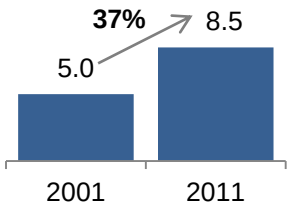
RAD is one part of HUD's aggressive agenda to tackle the affordable rental housing crisis

Neighborhood revitalization:
- Promise Zones
- Choice Neighborhoods

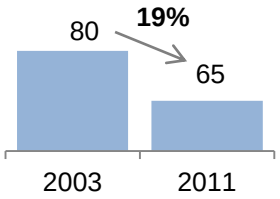
Attracting private capital:
- RAD
- Energy Performance contracts
- FHA Tax Credit pilot

Crisis in affordable rental housing

Growth in worst case housing needs
Millions renters



Shrinking supply of affordable units
Rental units per 100 renter households[1]



Increased federal funding:
- Increased funding for vouchers
- Requests for more Capital and Operating Funds

Modernizing Programs:
- Moving-to-Work
- MF Transformation
- NGMS/technology investment

1. Renter households defined is very low income renters

Source: 2011 Worst Case Housing Needs Report to Congress; HUD

RAD was designed to test a few things

1	Will RAD conversions lead to real improvements in the public housing stock?
2	Will RAD attract the diversity of PHAs and communities that make up the public housing portfolio?
3	Can the public housing stock attract the needed capital investment?
4	Can the program be designed in a way that gives a voice to tenants and protects their rights and services?
5	How will RAD protect public interest in what is currently a public asset?
6	Can HUD effectively manage the RAD program and the volume of conversions?

1 Will the conversions lead to real improvements in the public housing stock?

Examples

Liberty Gardens

- Rome, New York
- Constructed in 1952
- 52 units reconfigured into 46 units and 3 duplexes, containing six units
- Substantial rehab; $200K per unit
- Tax credits combined with loan commitment from State of New York CPHM program

APPROVED

Landsman Gardens

- Las Vegas, Nevada
- 100 units, constructed in 1971
- FHA Financing and tax credits
- $125K investment per unit
- Major rehab; asbestos and lead removal; accessibility measures; sewer lines

APPROVED

Yakima scattered site

- Yakima, Washington
- Built in 1979, 150 units
- 9% LIHTC, no debt
- $63K per unit investment; substantial rehab of all 150 units
- Resident in-place rehab
- Green/energy efficiency

APPROVED

Page Homes

- Trenton, New Jersey
- Has been boarded up for a decade
- To demolish and rebuild
- Tax credit combined with Hurricane Sandy-related funding and local economic development funding

ON HOLD

36 applications closed covering ~3,400 units as of May 2014 representing **$150 million of new investment**

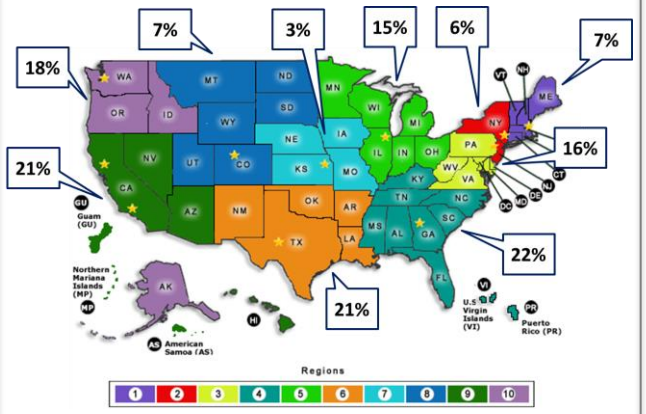
Profile of applications and potential impact

- 20% of units are for demolition and new construction
- Average hard costs of repairs for major rehab is $45,000 per unit

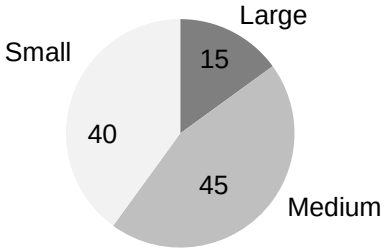
2 Will RAD attract the diversity of PHAs and communities that make up Public Housing?

PHAs representing 15% of the public housing stock have applied for RAD

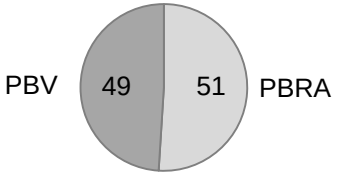
Geographic mix



PHA mix by size, Percent



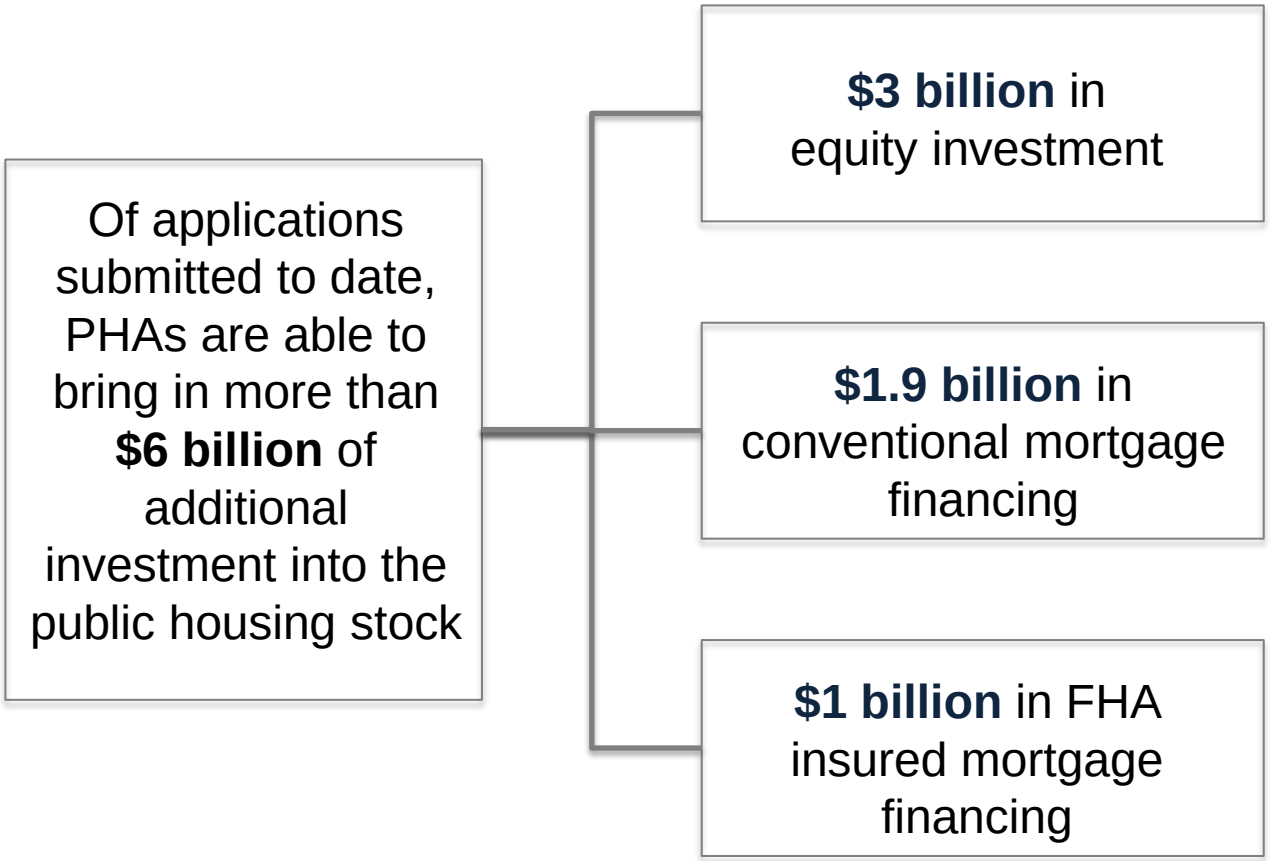
Type of conversion, share of projects



20% of units are for demolition and new construction

Large portfolio conversions (e.g., San Francisco, Chicago, El Paso) which include complex mix of funding vehicles (e.g., state, local, other federal)

3 Can the public housing stock attract the needed capital investment?



Source: HUD; Abt Associates 2010 study, "Capital Needs in the Public Housing Program"

4 Can RAD be designed in a way that gives voice to tenants and protects their services?

Tenant rights

- Current residents have **right to occupy the completed RAD project without rescreening**
- If residents are relocated, **must be provided with relocation assistance** and **option to return to the completed RAD project**
- Maintain **Right to Appeal** Terminations and **form tenant organization** from Public Housing program
- **PHAs must notify, consult and engage residents** throughout RAD conversion through public hearing process
- **Choice-mobility newly available** to tenants (e.g., PBV tenants can move after 1 year, PBRA after 2 years)

Tenant services

- **Resident participation funds remain available** to support tenant organization and resident services
- **Family Self Sufficiency** and **Resident Opportunities and Self Sufficiency** program will **remain available** to current participants
- **Service Coordinators in section 8 programs** may be available to tenants in converted properties

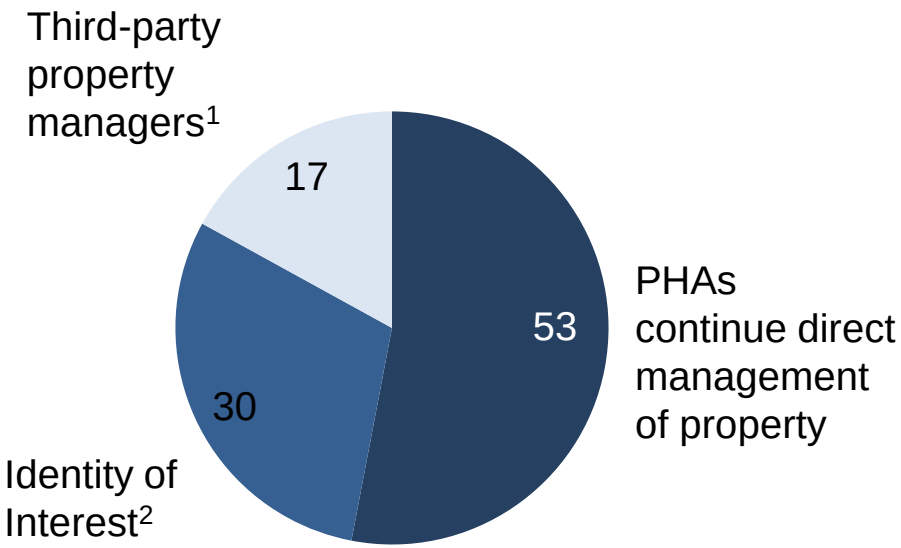
5 How will RAD protect public interest in what is currently a public asset?

Several important **protections** have been put in place to **preserve public interest** in converted housing units

- RAD is a **voluntary program** – PHAs, in consultation with their local community and tenants, have the choice to participate or not
- The RAD statute **requires public or non-profit ownership** or control
- The RAD statute **allows for ownership by a tax credit partnership** but **ONLY if the PHA preserves its interest in the property**
- Owners of converted properties are **required to renew their contracts and cannot opt out when contracts expire**
- The RAD Use Agreement **ensures long-term affordability**

5 How will RAD protect public interest in what is currently a public asset?

Post-conversion property management
Percent of closed RAD conversions; as of May 2014



For those limited number of PHA's using third-party property management, HUD encourages actively supporting employees that may get impacted. E.g.,

- Working with local municipalities to create opportunities
- Developing labor agreements with project developers
- Creating opportunities in Section 8 program management

1. Property management contracted out to an independent third-party property management company; Already a very common practice both in Public Housing and Section 8
2. Property managed by a property management company co-owned by the PHA

Source: HUD

6 Can HUD effectively manage the RAD program and the volume of conversions?

Lessons learned (examples)

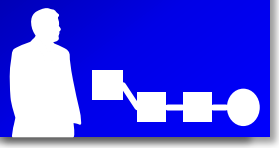
1. External confusion about status of applications; PHAs struggling with complex application process
2. Internal roadblocks and stumbles among HUD silos
3. Lack of transparency into process and capacity needs
4. Policy issues leading to low uptake of RAD; slow processing of applications due to unresolved internal conflicts on policy issues

Changes made (examples)

Supporting PHAs

- RAD Toolkit developed to help PHAs navigate application process
- Provide "expeditor" support to PHAs struggling with their applications
- Publication of approved applications on HUD website

Process



- Developed complete process map of each step of RAD processing
- Developed standard guides and procedures for all staff roles
- Building fast-track lanes for certain types of applications (e.g., Tax Credits)
- Consolidated processing activity under one division (OAHP/MFH)

Dashboards and internal routines

- Automated dashboard to track status of each application
- Detailed analysis of productivity and capacity requirements for each stage of the process
- Weekly RAD Approval Committee meetings; weekly cross-department RAD leadership meetings

Policies and program

- Eliminating 1,000 unit limit on number of units that PHA can convert
- Clarifying relocation policies and procedures
- Clarifying internal procedures for release of Declaration of Trust
- Allowing portfolio applications and multi-phase development projects

Source: HUD

6 Can HUD effectively manage the RAD program and the volume of conversions?

HUD has spent the past 18 months putting in place a robust process to manage RAD

Application for HAP Commitment (CHAP)

- Two resident consultations
- Board approval
- Financing Letters of Interest

CHAP issuance

Application for RAD conversion (RCC)

- At least one additional resident meeting
- Significant Amendment to Annual Plan
- Physical Conditions Assessment (PCA)
- Application for Firm Commitments
- Financing Plan

RCC issuance

Closing process

- All closing documents reviewed for compliance

- 70 applications have gone through CHAP and RCC issuance
- 36 applications have been closed as of May 2014

Closing

Post-closing quality control

- Tenant relocation compliance
- HAP payment processing
- Asset management oversight

Source: HUD

Why lifting the 60K cap is a necessity

1. $3 billion of tax credits and other funding sources at risk of expiring or being re-allocated to other priorities
2. Forgoing opportunity to invest an additional $3 billion in public housing and the creation of ~66,000 jobs
3. Continued deterioration of public housing units with no other viable options on the horizon
4. Current cap limits access to just the few PHAs that are under the cap and creates unequal playing field for the other 3,000+ PHAs
5. Lack of certainty creates a disincentive for financial institutions and private capital to participate in program

Not lifting cap means forgoing billions of investments in many communities across country

Estimated potential investment, $B		**Potential Jobs created**[1]
Below 60K cap	2.7	54,000
Above 60K cap	3.3	66,000
Total received applications	6.0	120,000

Sample of communities on wait list

- Tampa (~2,100 units)
- Mobile (~1,800 units)
- County of Los Angeles (1,800 units)
- Indianapolis (~1,500 units)
- Philadelphia (~500 units)
- San Bernardino (~550 units)
- New York City (~1,400 units)
- Portland (~575 units)
- Durham (~440 units)
- Cincinnati (~970 units)
- Columbus (450 units)

1. Multiplier of 20 jobs for every $1 million of capital investment

Appendix

Glossary (1 of 2)

Choice Neighborhoods: The Choice Neighborhoods program supports locally driven strategies to address struggling neighborhoods with distressed public or HUD-assisted housing through a comprehensive approach to neighborhood transformation. Local leaders, residents, and stakeholders come together to create and implement a plan that transforms distressed HUD housing and addresses the challenges in the surrounding neighborhood. The program is intended to catalyze critical improvements in neighborhood assets, including vacant property, housing, services and schools.

CHAP: Commitment to enter into a Housing Assistance Payment (HAP) Contract. Document, provided to the PHA or owner for projects that have been approved for RAD conversion, that describes the terms under which HUD will enter into a HAP contract with the project owner.

HOPE VI: The HOPE VI Program was developed as a result of recommendations by the National Commission on Severely Distressed Public Housing, which was charged with proposing a National Action Plan to eradicate severely distressed public housing. HOPE VI provides grant funding to public housing agencies that have severely distressed public housing units in their inventory. The grants fund projects including: capital costs of major rehabilitation, new construction and other physical improvements; demolition of severely distressed public housing; acquisition of sites for off-site construction; and community and supportive service programs for residents.

Housing Assistance Payment (HAP): The payment made by the Contract Administrator to the owner of an assisted unit as provided in the HAP contract. Where the unit is leased to an eligible household, the payment is the difference between the contract rent for a particular assisted unit and the HUD-required rental contribution from eligible residents.

Low Income Housing Tax Credits (LIHTC): The LIHTC Program was enacted by Congress in 1986 to provide the private market with an incentive to invest in affordable rental housing. Federal housing tax credits are awarded to owners/ developers. Developers then sell these credits to investors to raise capital (or equity) for their projects, which reduces the debt that the developer would otherwise have to borrow. Because the debt is lower, a tax credit property can in turn offer lower, more affordable rents. Provided the property maintains compliance with the program requirements, investors can receive a dollar-for-dollar credit against their Federal tax liability each year over a period of 10 years.

Glossary (2 of 2)

Project-Based Rental Assistance (PBRA): Rental assistance provided by HUD to owners according to the terms of a HAP contract for the provision of housing to eligible tenants. The PBRA program is administered by HUD.

Project-Based Vouchers (PBV): A component of a PHA's Housing Choice Voucher program, wherein a PHA can attach voucher assistance to specific housing units through a HAP contract with an owner.

Tenant Protection Vouchers (TPVs): Vouchers issued to eligible tenants of certain properties when an event at the property would otherwise expose tenants to a loss of rental assistance, resulting in an increase in their housing costs. HUD provides funding for TPVs to a voucher agency that has jurisdiction over the area in which the property is located.

Public Housing Agency (PHA): An agency created by local government to administer public housing.

RCC: RAD Conversion Commitment. Contract executed by HUD and the PHA or owner, following HUD approval of the submitted Financing Plan, that describes the terms and conditions of the conversion.

Section 8: Section 8 of the Housing Act of 1937, as amended, authorizes the payment of rental housing assistance to private landlords on behalf of low-income households. The largest part of the section is the Housing Choice Voucher program which assists very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market. Housing choice vouchers are administered locally by public housing agencies (PHAs). The PHAs receive federal funds from HUD to administer the voucher program.

Section 9: Section 9 Public Housing was established to provide decent and safe rental housing for eligible low-income families, the elderly, and persons with disabilities. HUD administers Federal aid to local housing agencies that manage the housing for low-income residents at rents they can afford.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 41

SUPERIOR COURT OF CALIFORNIA,
COUNTY OF SAN DIEGO

MINUTE ORDER

DATE: 12/24/2018 TIME: 01:51:00 PM DEPT:

JUDICIAL OFFICER PRESIDING: Timothy Taylor
CLERK: Kelly Breckenridge
REPORTER/ERM: Not Reported
BAILIFF/COURT ATTENDANT:

CASE NO: **37-2018-00013324-CU-TT-CTL** CASE INIT.DATE: 03/15/2018
CASE TITLE: **Golden Door Properties LLC vs County of San Diego [E-FILE]**
CASE CATEGORY: Civil - Unlimited CASE TYPE: Toxic Tort/Environmental

APPEARANCES

The Court, having taken the above-entitled matter under submission on 12/21/18 and having fully considered the arguments of all parties, both written and oral, as well as the evidence presented, now rules as follows:

Rulings on Petitions for Writs of Mandate (CEQA)

Sierra Club v. County of San Diego, Case No. 2012-101054

Sierra Club v. County of San Diego, Case No. 2018-14081

Golden Door Properties v. County of San Diego, Case No. 2018-13324

Argued and submitted: December 21, 2018, Dept. 72

1. <u>Overview and Procedural Posture</u>.

In late 2012 and early 2013, the court was required to address, in two CEQA cases, the controversial topics of greenhouse gases and global climate change. The first was *Cleveland National Forest Foundation v. SANDAG*, SDSC Case No. 2011-00101593; that case was the ultimately the subject of three appellate opinions: 180 Cal.Rptr.3d 548 (2014); 3 Cal.5th 497 (2017); and 17 Cal.App.5th 413 (2017).

The second was (and still is) *Sierra Club v. County of San Diego*, Case No. 2012-101054. The Sierra Club contended that the County of San Diego's June 20, 2012 "Climate Action Plan" (CAP), was insufficient and violated CEQA in several respects: it did not comply with mitigation measures spelled out in the County's 2011 Program EIR (PEIR), adopted in connection with the 2011 General Plan Update (GPU); it failed to satisfy the requirements for adopting thresholds of significance for greenhouse gas emissions (GHG); and it should have been set forth in a stand-alone environmental document rather than in an addendum to the PEIR. The County denied these claims, and asserted that the CEQA challenge was time-barred, the CAP complied with all legal requirements, the use of an addendum was

appropriate, and that all relief was barred by the Sierra Club's failure to notify the AG as required by Pub. Res. Code section 21167.7.

More than five and a half years ago, the court ruled in favor of the Sierra Club on the original petition. ROA 33. The County appealed. ROA 44. The parties thereafter stipulated to stay the case while it was on appeal. ROA 60. But before they did, the Sierra Club had filed a supplemental petition. ROA 54. The stipulated stay prevented consideration of that document. Subsequently, the parties filed a stipulation regarding the disposition of the supplemental petition, depending on the disposition of the appeal. ROA 64.

In October of 2014, the 4th DCA, Div. 1 issued its learned opinion affirming this court, ultimately published at 231 Cal.App.4th 1152 (2014). On March 11, 2015, the Supreme Court denied review. A remittitur thereafter issued. ROA 105.

The parties were before the court on April 15, 2015. Petitioner asked that the agreed-upon stay be lifted, and that the case be restored to the civil active list. These requests were granted without objection.
The Sierra Club also wanted the court to sign an order, while the County wanted the court to sign a different order. There were two problems: first, the court had not received petitioner's version of the proposed order, nor had a chance to review the County's proposed order; and second, the parties were before the court while it was in the middle of a lengthy trial with jurors arriving shortly. The court continued the matter to the regular law and motion calendar of May 1, 2015. ROA 73.

The court thereafter reviewed the parties' competing submissions. The central problem was that a dispute had arisen regarding the intent, import and meaning of the December 11, 2014 stipulation (ROA 64). The court, following several submissions and argument, resolved the dispute in May of 2015. ROA 91-92.
The Sierra Club's counsel thereafter sought an award of attorneys' fees. ROA 95-104. The amended moving papers (ROA 116, 117) made clear that the County agreed petitioner was entitled to fees; the only question was how much. Petitioner sought a lodestar of over $661,000.00 with a multiplier of two, for a total of over $1.3 million, plus fees necessary for the fee motion.

The County filed opposition. ROA 122-125. After presenting very focused argument, the County ended by making several specific "suggestions" for reducing the fee award: a combination of cutting hours, reducing rates, and denial of any multiplier. Petitioner filed reply. ROA 126-130. The court, after it had reviewed all the briefing and heard argument, granted a fee award in the amount of over $961,000.00. ROA 133. Judgment was thereafter entered in this amount, plus additional costs not challenged by the County. ROA 135. This occurred in September of 2015; at this point, the court (perhaps naively) considered the case to have been essentially concluded. Neither side sought further appellate review of the attorneys' fee ruling or the May 2015 ruling.

In early 2016 and again the following summer, the County filed returns on the supplemental writ. ROA 137, 138. Both sides changed counsel. ROA 136, 147.

The Sierra Club filed its second amended petition on September 26, 2016. ROA 140. The County demurred to it on two grounds, including non-justiciability (ripeness). ROA 142. Following briefing and argument, the court overruled the demurrer on January 6, 2017. ROA 160. The County thereafter answered. ROA 161-162.

Also at the January 6, 2017 hearing, the court allowed the parties' stipulation whereby a more recently

filed case, *Golden Door Properties LLC v. County of San Diego*, Case No. 2016-0037402, would be transferred to Dept. 72 and heard with the *Sierra Club* 2012 case. ROA 160. Both the then-current iteration of the *Sierra Club* 2012 case and the *Golden Door* 2016 case challenged the County's 2016 Climate Change Analysis Guidance Recommended Content and Format for Climate Change Analysis Reports in Support of CEQA Documents (2016 Guidance Document or 2016 Significance Document) prepared by the County's Department of Planning & Development Services.

Following extensive briefing (ROA 169-190) and the publication of a tentative ruling (ROA 191), the court rendered its decision on April 28, 2017. ROA 193. A judgment on the second supplemental petition was thereafter entered. ROA 194. The County appealed (ROA 198-199). On September 28, 2018, the Fourth District Court of Appeal, Div. 1, handed down its learned decision in Consolidated Case Nos. D072406 and D072433, affirming this court in full (27 Cal. App.5th 892). Of this more below; the cases were set for a status conference on December 21, 2018 to spread the mandate of the Court of Appeal.

In early 2018, with the County's appeal pending, the County filed a sixth and seventh return on the supplemental writ. ROA 220, 221. The latter came as the result of the Board of Supervisors certifying the EIR for the 2018 CAP, and was the subject of objections by the Sierra Club. ROA 224. Sierra Club filed a new petition (Case No. 2018-14081) challenging the 2018 CAP. In addition, the Sierra Club filed its third supplemental petition for writ of mandate in the 2012 case. ROA 226, 231.

In a nutshell, the County contends that certification of the EIR for the 2018 CAP, and the related actions, comply with the requirements of the second paragraph of the supplemental writ in the 2012 case, and demonstrate compliance with CEQA as required by the third paragraph of the supplemental writ. The County wanted the court to discharge the supplemental writ and deny the new petition. The Sierra Club contends that the County's 2018 actions violate "CEQA as an informational document, as a substantive document of environmental protection, and as a document of public accountability."

Golden Door, which filed its own case challenging the 2018 CAP (No. 2018-13324), also sought leave to intervene in the 2012 case pursuant to Code of Civil Procedure section 387, subdivisions (a) (permissive intervention) or (b) (mandatory intervention). Following full briefing, the court granted the motion (ROA 276, 285), and the complaint in intervention was filed. ROA 277.

The County filed a motion to discharge the May 4, 2015 Supplemental Writ of Mandate. ROA 271-274. The Sierra Club and Golden Door filed separate opposition. ROA 282-284, 286. The court reviewed the papers, and on July 20, 2018, granted the County's motion in part and denied it in part in light of the then-pending appeal and Code of Civil Procedure section 916. ROA 297.

At the continued CMC, the court ordered the administrative record for the ongoing challenges to the 2018 CAP filed by August 3, 2018, and set a merits hearing for November 30, 2018. ROA 25. Golden Door lodged the proposed administrative record on August 3, 2018. ROA 48. The County challenged the adequacy of the proposed record and sought a substantial delay in the merits hearing (in a motion misleadingly phrased as one merely seeking "clarification"). ROA 50-54. The County contended the proposed record does not "comply with Rule of Court 3.2205 or Public Resources Code § 21167.6." Golden Door filed opposition. ROA 59-63. The County filed reply. ROA 64-66. The court reviewed the papers, published a tentative ruling (ROA 67), and on August 31, 2018, made its ruling. ROA 75. The merits hearing was continued to December 21, 2018 at the County's insistence and over petitioners' objections. ROA 69. Golden Door lodged an electronic copy of the administrative record on a 500 GB portable drive on September 7, 2018. ROA 51. Golden Door also lodged an electronic copy of the administrative record on a flash drive on October 17, 2018. ROA 49. The administrative record is

approximately 70,000 pages.

Petitioners sought a stay or preliminary injunction whereby the County will be precluded, during the pendency of these proceedings, from utilizing Mitigation Measure M-GHG-1 in connection with any pending project approvals requiring a General Plan amendment. ROA 84-91. Golden Door's motion submits the M-GHG-1's utilization violates the General Plan's requirements to reduce GHG emissions within the County and violates CEQA because M-GHG-1 would allow in-process and future General Plan amendment projects to increase GHG emissions within the County, in exchange for the purchase of carbon offset credits applicable to another location in California, the United States, or the world, without considering the requirements of the General Plan, even as amended, or undertaking the appropriate analysis to understand the effect of this program. Sierra Club filed its own, similar motion, also requesting that the County's 2018 Threshold of Significance be stayed or enjoined. ROA 303-304.

On September 14, 2018, the court granted a limited version of the stay/preliminary injunction. ROA 107. A little more than a week later, petitioners appeared *ex parte* asking the court to set an OSC re contempt against the County for its actions in the wake of the September 14 order. ROA 112-115. The court declined to do so, finding that a contempt hearing would delay resolution of the merits of the petitions,* and that the allegedly contemptuous behavior had not even occurred yet. ROA 120. The following day, the County Board of Supervisors voted 4-0 to approve the project (a decision which petitioners claim was premised on a violation of the September 14, 2018 stay/injunction).

Several other cases have since been filed challenging individual development approvals. The parties have disputed whether these cases are "related" to the current cases. See ROA 73. So far as this court is aware, no party has teed these disputes up for resolution (for example, by making a motion to transfer or a motion to consolidate)

Petitioners filed their merits briefing on October 19, 2018. ROA 44, 53. The County filed its answering briefing on December 7, 2018. ROA 81. Petitioners jointly replied on December 14, 2018. ROA 84. The court reviewed the briefing and the certified administrative record. The court published a detailed tentative ruling on December 20 in which it thanked the parties for their thorough and comprehensive presentations.

The answering brief "incorporates by reference" substantial material from the County's answers to the petitions for writ of mandate (ROA 81, opposition brief, p. 7:24-26), evidently in an attempt to evade the agreed-upon and court-ordered page limitations (ROA 47). Petitioners point this out but do not request that the court strike or disregard the unauthorized extra pages (ROA 84, reply brief, p. 8:25-27). The court considered the unauthorized extra pages.

Petitioners both contend the 2018 CAP is inconsistent with the County's General Plan. ROA 44, Sierra Club's opening brief at p. 21*ff*; ROA 53, Golden Door's opening brief at pp. 8-10. And both petitioners contend, with somewhat different analysis, that the County violated CEQA by allowing out of county GHGs offsets without legally sufficient analysis. ROA 44, Sierra Club's opening brief at pp. 8-20; ROA 53, Golden Door's opening brief at pp. 10-18.

In view of the importance of the issues presented, the court set aside the entire afternoon calendar on December 21 for this matter. The parties presented lengthy and thoughtful argument. PowerPoint or similar presentations were encouraged by the court and were used at the oral argument by both sides; paper copies of these outlines were appended to the minutes of the court. The case was then submitted for decision.

2. Applicable Standards.

A. "Under the law-of-the-case doctrine, the determination *by an appellate court* of an issue of law is conclusive in subsequent proceedings in the same case. [Citation.] The doctrine applies only if the issue was actually presented to and determined *by the appellate court*. [Citation.] The doctrine is one of procedure that prevents parties from seeking reconsideration of an issue already decided absent some significant change in circumstances." *People v. Yokely* (2010) 183 Cal.App.4th 1264, 1273 (*Yokely*), italics added. Furthermore, "the law-of-the-case doctrine governs only the *principles of law* laid down by an appellate court, as applicable to a retrial of fact . . . ." *People v. Boyer* (2006) 38 Cal.4th 412, 442. "[T]he doctrine applies only to *an appellate court's decision on a question of law*; it does not apply to questions of fact." *People v. Barragan* (2004) 32 Cal.4th 236, 246, italics added. The doctrine applies only to rulings by appellate courts and not trial courts. *Yokely*, at p. 1273; *Boyer*, at p. 442; *Barragan*, at p. 246.

The doctrine of "law of the case" deals with the effect of the *first appellate decision* on the subsequent *retrial or appeal*: The decision of an appellate court, stating a rule of law necessary to the decision of the case, conclusively establishes that rule and makes it determinative of the rights of the same parties in any subsequent retrial or appeal in the same case. *Morohoshi v. Pacific Home* (2004) 34 Cal.4th 482, 491. "Generally, the doctrine of law of the case does not extend to points of law which might have been but were not presented and determined in the prior appeal. [Citation.] As an exception to the general rule, the doctrine is . . . held applicable to questions not expressly decided but implicitly decided because they were essential to the decision on the prior appeal." *Estate of Horman* (1971) 5 Cal.3d 62, 73.

B. The Court's Role in CEQA Cases.

In *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 486 (*Mira Mar Mobile Community*), the court explained that "[i]n a mandate proceeding to review an agency's decision for compliance with CEQA, [courts] review the administrative record *de novo* [citation], focusing on the adequacy and completeness of the EIR and whether it reflects a good faith effort at full disclosure. [Citation.] [The court's] role is to determine whether the challenged EIR is sufficient as an information document, not whether its ultimate conclusions are correct. [Citation.]" An EIR is presumed adequate. Pub. Resources Code § 21167.3(a).

Courts review an agency's action under CEQA for a prejudicial abuse of discretion. Pub. Res. Code § 21168.5. "Abuse of discretion is established if the agency has not proceeded in a manner required by law or if the determination or decision is not supported by substantial evidence." *Id.;* see *Mira Mar Mobile Community*, *supra*, 119 Cal.App.4th at 486; *County of San Diego v. Grossmont-Cuyamaca Community College Dist*. (*Grossmont*) (2006) 141 Cal.App.4th 86, 96 (same).

In defining the term "substantial evidence," the CEQA Guidelines state: " 'Substantial evidence' ... means enough relevant information and reasonable inferences from this information that a fair argument can be made to support a conclusion, even though other conclusions might also be reached. Whether a fair argument can be made ... is to be determined by examining the whole record before the lead agency. Argument, speculation, unsubstantiated opinion[,] narrative [or] evidence which is clearly erroneous or inaccurate ... does not constitute substantial evidence." CEQA Guidelines, § 15384(a). "In applying the substantial evidence standard, [courts] resolve all reasonable doubts in favor of the administrative finding and decision. [Citation.]" *Mira Mar Mobile Community*, *supra*, 119 Cal.App.4th at 486; *Grossmont, supra*, 141 Cal.App.4th at 96.

Although the lead agency's factual determinations are subject to the foregoing deferential rules of review, questions of interpretation or application of the requirements of CEQA are matters of law. While

judges may not substitute their judgment for that of the decision makers, they must ensure strict compliance with the procedures and mandates of the statute. *Grossmont, supra*, 141 Cal.App.4th at 96.

C. The Three Steps of CEQA.

CEQA establishes "a three-tiered process to ensure that public agencies inform their decisions with environmental considerations." *Banker's Hill, et al v. City of San Diego* (2006) 139 Cal.App.4th 249, 257 (*Banker's Hill*); *see also* CEQA Guidelines, § 15002(k) (describing three-step process).

First Step in the CEQA Process.

The first step "is jurisdictional, requiring that an agency conduct a preliminary review in order to determine whether CEQA applies to a proposed activity." *Banker's Hill, supra,* 139 Cal.App.4th at 257; *see also* CEQA Guidelines, § 15060. The Guidelines give the agency 30 days to conduct this preliminary review. CEQA Guidelines, § 15060. The agency must first determine if the activity in question amounts to a "project." *Muzzy Ranch Co. v. Solano County Airport Land Use Com.* (2007) 41 Cal.4th 372, 380. "A CEQA ...project falls into one of three categories of activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment (§ 21065.)" *Sunset Sky Ranch Pilots Assn. v. County of Sacramento* (2009) 47 Cal.4th 902, 907.

As part of the preliminary review, the public agency must also determine the application of any statutory exemptions or categorical exemptions that would exempt the proposed project from further review under CEQA. *See* CEQA Guidelines, § 15282 (listing statutory exemptions); CEQA Guidelines, §§ 15300–15333 (listing 33 classes of categorical exemptions). The categorical exemptions are contained in the CEQA Guidelines and are formulated by the Secretary under authority conferred by CEQA section 21084(a). If, as a result of preliminary review, "the agency finds the project is exempt from CEQA under any of the stated exemptions, no further environmental review is necessary. The agency may prepare and file a notice of exemption, citing the relevant section of the Guidelines and including a brief 'statement of reasons to support the finding.'" *Banker's Hill*, *supra*, 139 Cal.App.4th at 258, citing CEQA Guidelines, §§ 15061(d), 15062(a)(3).

Second Step in the CEQA Process.

If the project does not fall within an exemption, the agency proceeds to the second step of the process and conducts an initial study to determine if the project *may* have a significant effect on the environment. CEQA Guidelines, § 15063. If, based on the initial study, the public agency determines that "there is substantial evidence, in light of the whole record ... that the project may have a significant effect on the environment, an environmental impact report [(EIR)] shall be prepared." Pub. Resources Code § 21080(d). On the other hand, if the initial study demonstrates that the project "would not have a significant effect on the environment," either because "[t]here is no substantial evidence, in light of whole record" to that effect or the revisions to the project would avoid such an effect, the agency makes a "negative declaration," briefly describing the basis for its conclusion. Pub. Resources Code§ 21080(c)(1); *see* CEQA Guidelines, § 15063(b)(2); *Banker's Hill*, *supra*, 139 Cal.App.4th at 259.

The Guidelines and case law further define the standard that an agency uses to determine whether to issue a negative declaration. "[I]f a lead agency is presented with a *fair argument* that a project may have a significant effect on the environment, the lead agency shall prepare an EIR even though it may also be presented with other substantial evidence that the project will not have a significant effect." CEQA Guidelines, § 15064(f)(1), italics added. This formulation of the standard for determining whether

to issue a negative declaration is often referred to as the "fair argument" standard. *See Laurel Heights Improvement Assn. v. Regents of University of California,* (1993) 6 Cal.4th 1112, 1134-1135. Under the fair argument standard, a project "may" have a significant effect whenever there is a "reasonable possibility" that a significant effect will occur. *No Oil v. City of Los Angeles* (1974) 13 Cal.3d 68, 83-84. Substantial evidence, for purposes of the fair argument standard, includes "fact, a reasonable assumption predicated upon fact, or expert opinion supported by fact." § 21080(e)(1). Substantial evidence is not argument, speculation, unsubstantiated opinion or narrative, evidence that is clearly inaccurate or erroneous, or evidence of social or economic impacts unrelated to physical impacts on the environment. Pub. Resources Code § 21080(e)(2).

If the initial study reveals no substantial evidence that the project may have a significant environmental effect, the agency may adopt a negative declaration. Pub. Resources Code § 21080(c)(2); CEQA Guidelines, § 15070(b); *Grand Terrace for Responsible and Open Government v. City of Grant Terrace* (2008) 160 Cal.App.4th 1323, 1331 (*Grand Terrace*); *Save the Plastic Bag Coalition v. City of Manhattan Beach* (2011) 52 Cal.4th 155, 175 (holding common sense is part of the substantial evidence analysis). "Alternatively, if there is no substantial evidence of any net significant environmental effect in light of revisions in the project that would mitigate any potentially significant effects, the agency may adopt [an MND]. [Citation.] [An MND] is one in which '(1) the proposed conditions "avoid the effects or mitigate the effects to a point where *clearly* no significant effect on the environment would occur, *and* (2) there is *no substantial evidence* in light of the whole record before the public agency that the project, as revised, may have a significant effect on the environment." (§ 21064.5 . . . .)' [Citations.]" *Grand Terrace, supra,* at 1331-1332. The MND allows the project to go forward subject to the mitigating measures. Pub. Resources Code §§ 21064.5, 21080(c); *see Grand Terrace*, *supra,* 160 Cal.App.4th at 1331.

Third Step in the CEQA Process.

If no negative declaration is issued (or if, as here, it was held to be unlawful), the preparation of an EIR is the third and final step in the CEQA process. *Banker's Hill, supra*, 139 Cal.App.4th at 259; Guidelines, §§ 15063(b)(1), 15080; CEQA, §§ 21100, 21151.

D. <u>The Environmental Impact Report</u>.

Central to CEQA is the EIR, which has as its purpose informing the public and government officials of the environmental consequences of decisions before they are made. [Citation.] "An EIR must be prepared on any 'project' a local agency intends to approve or carry out which 'may have a significant effect on the environment.' Pub. Res. Code §§ 21100, 21151; Guidelines, § 15002(f)(1). The term 'project' is broadly defined and includes any activities which have a potential for resulting in a physical change in the environment, directly or ultimately. Pub Res. Code § 21065; Guidelines, §§ 15002(d), 15378(a); [Citation].) The definition encompasses a wide spectrum, ranging from the adoption of a general plan, which is by its nature tentative and subject to change, to activities with a more immediate impact, such as the issuance of a conditional use permit for a site-specific development proposal." *CREED v. City of San Diego* (2005) 134 Cal.App.4th 598, 604 (*CREED*).

"To accommodate this diversity, the Guidelines describe several types of EIR's, which may be tailored to different situations. The most common is the project EIR, which examines the environmental impacts of a specific development project. (Guidelines, § 15161.) A quite different type is the program EIR, which 'may be prepared on a series of actions that can be characterized as one large project and are related either: (1) Geographically, (2) As logical parts in the chain of contemplated actions, (3) In connection with issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program, or (4) As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which can be mitigated in similar ways.'" CEQA Guidelines, § 15168(a); *CREED, supra*, 134 Cal.App.4th at 605. As the court held in *CREED*, a program EIR may serve as the EIR for a subsequently proposed project only to the extent it

contemplates and adequately analyzes the potential environmental impacts of the project. *CREED, supra,* 134 Cal.App.4th at 615. The EIR at issue in this case is of the latter variety, a program EIR.

E. Standards of Review.

Under CEQA, an EIR is presumed adequate (Pub. Resources Code, § 21167.3), and the plaintiff in a CEQA action has the burden of proving otherwise. *Preserve Wild Santee v. City of Santee* (2012) 210 Cal.App.4th 260, 275, internal quotation marks omitted, quoting *Concerned Citizens of South Central L.A. v. Los Angeles Unified School Dist.* (1994) 24 Cal.App.4th 826, 836. Courts review an agency's determinations and decisions for abuse of discretion. An agency abuses its discretion when it fails to proceed in a manner required by law or there is not substantial evidence to support its determination or decision. Pub. Resources Code §§ 21168, 21168.5; *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 426-427 (2007) (*Vineyard*). "Judicial review of these two types of error differs significantly: While [courts] determine de novo whether the agency has employed the correct procedures, 'scrupulously enforc[ing] all legislatively mandated CEQA requirements' [citation], [courts] accord greater deference to the agency's substantive factual conclusions." *Vineyard*, *supra*, 40 Cal.4th at 435.

Consequently, in reviewing an EIR for CEQA compliance, courts adjust "scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts." *Vineyard*, *supra*, 40 Cal.4th at 435. For example, where a petitioner claims an agency failed to include required information in its environmental analysis, the court's task is to determine whether the agency failed to proceed in the manner prescribed by CEQA. Conversely, where a petitioner challenges an agency's conclusion that a project's adverse environmental effects are adequately mitigated, courts review the agency's conclusion for substantial evidence. *Vineyard*, *supra*, 40 Cal.4th at 435.

Here, the parties dispute even the proper analytical framework guiding this court's review of the SEIR. The County claims all of petitioners' claims are subject to deferential "abuse of discretion" review. ROA 81, page 11. Petitioners note that the County "conflates three separate standards of review that are applicable in this case," and go on to discuss all three. ROA 84, page 11. The court concludes that petitioners' formulation is the correct one, and in resolving this matter, has attempted to utilize the scrutiny appropriate to several questions presented. So, with respect to general plan consistency, the court has required petitioners "to show why, based on all of the evidence in the record, the determination was unreasonable." *San Diego Citizenry Group v. County of San Diego*, 219 Cal. App. 4th 1, 26 (2013). With regard to analysis of the SEIR, the court has adjusted its scrutiny to the nature of the alleged defect, depending on whether the claim is predominantly one of improper procedure or a dispute over the facts. *Vineyard*, *supra*, 40 Cal.4th at 435.

F. Further Requirements of CEQA.

In addition to the foregoing public process/decision maker information steps, the Legislature in enacting CEQA also intended to "provide certain substantive measures for protection of the environment. [Citations.] In particular, one court noted [Public Resources Code] section 21002 requires public agencies 'to deny approval of a project with significant adverse effects when feasible alternatives or feasible mitigation measures can substantially lessen such effects.' [Citation.]" *Quail Botanical Gardens Foundation, Inc. v. City of Encinitas* (1994) 29 Cal.App.4th 1597, 1601-1602, and *Laurel Heights Improvement Assn. v. Regents of University of Californi*a (1993) 6 Cal.4th 1112, 1123. The Legislature declared its intention in enacting CEQA "that all public agencies responsible for regulating activities affecting the environment give prime consideration to preventing environmental damage when carrying out their duties. [Citations.] CEQA is to be interpreted 'to afford the fullest possible protection to the environment within the reasonable scope of the statutory language.' " *Mountain Lion Foundation v. Fish & Game Com*. (1997) 16 Cal.4th 105, 112.

G. Exhaustion.

The exhaustion of administrative remedies is a jurisdictional prerequisite to seeking judicial relief.

(*Abelleira v. Dist. of Ct. of Appeal* (1941) 17 Cal.2d 280, 292.) The failure to exhaust is a jurisdictional defect. (*Coalition for Student Action v. City of Fullerton* (1984) 153 Cal.App.3d 1194, 1197.) It is based upon the notion that a public agency must be given an opportunity to receive and respond to articulated factual issues and legal theories before its actions are subjected to judicial review. (*Id.* at p. 1198.) Even claims of constitutional infirmities (*McAllister v. County of Monterey* (2007) 147 Cal.App.4th 253, 276) and challenges to the validity of any governing regulation (*Woods v. Super. Ct.* (1981) 28 Cal.3d 668, 680) must be presented in the first instance to the administrative agency. This requirement permits the agency to apply its expertise, resolve factual issues, apply statutorily delegated remedies, and mitigate damages. (*Rojo v. Kliger* (1990) 52 Cal.3d 65, 86.) Petitioner has the burden to prove that an issue was exhausted and timely and properly raised in the administrative process. *CREED v. City of San Diego* (2011) 196 Cal.App.4th 515, 527. Proper exhaustion of administrative remedies is a jurisdictional prerequisite to maintain a CEQA challenge. *CREED, supra,* 196 Cal. App.4th at 527. Under the *CREED* case, a generalized, vague reference to environmental concerns will not preserve a challenge against a failure to exhaust claim. *Id*. at 527.

3. Requests for Judicial Notice.

The Sierra Club seeks (ROA 45-46) judicial notice of five items not included in the administrative record: (1) regulations issued by the California Air Resources Board (CARB) to regulate "Cap-and-Trade" (Exhibit 1); (2) a declaration filed on August 22, 2018 (ROA 89) in Case No. 2018-37-13324 (Exhibit 2); and (3) portions of draft EIRs on projects that have not been approved by the County Board of Supervisors (Exhibits 3-5). In response, the County filed evidentiary objections (ROA 79) to Exhibits 2-5 in the Sierra Club's request for judicial notice.

The County seeks (ROA 82) seeks judicial notice of six items not included in the administrative record: (1) regulations issued by CARB in 2012 to regulate "Cap-and-Trade" (Exhibit 1): (2) a 2015 San Diego Superior Court ruling in Case No. 2015-07420 (Exhibit 2); (3) County Code of Administrative Ordinance section 375.19 (Exhibit 3); (4) Board Policy I-63; and (5) the County's answers to Sierra Club's and Golden Door's writ of mandate petitions (Exhibits 5-6). In response, the Sierra Club and Golden Door filed evidentiary objections (ROA 85) to Exhibits 2, 5, and 6 in the County's request for judicial notice.

Courts of appeal review a trial court's ruling on a request for judicial notice pursuant to the abuse of discretion standard of review. *In re Social Services Payment Cases* (2008) 166 Cal.App.4th 1249, 1271. Evidence Code section 453 provides that a trial court must take judicial notice of any matter specified in Evidence Code section 452, upon a party's proper request.

In *People v. Harbolt* (1997) 61 Cal.App.4th 123, 126-127, the court discussed the limited purposes for which a court may take judicial notice of a court record:

"Evidence Code sections 452 and 453 permit the trial court to 'take judicial notice of the *existence* of judicial opinions and court documents, along with the truth of the results reached-in the documents such as orders, statements of decision, and judgments-but cannot take judicial notice of the truth of hearsay statements in decisions or court files, including pleadings, affidavits, testimony, or statements of fact.' [Citations.]"

Turning to the other materials: the administrative record may only be augmented where the proponent makes the showing under Code of Civil Procedure section 1094.5(e): (1) that the proposed evidence could not have been produced at the administrative hearing through the exercise of reasonable diligence; or (2) that the proposed evidence was improperly excluded at the administrative hearing. Situations in which such "extra-record" evidence should be admitted by a court are relatively rare. *Western States Petroleum Assn. v. Superior Court* (1995) 9 Cal.4th 559, 578; *City of Fairfield v. Superior*

Court (1976) 14 Cal.3d 768, 776; *Toyota of Visalia v. New Motor Vehicle Bd*. (1987) 188 Cal.App.3d 872, 881. Determination of the question of whether one of the exceptions (to the general rule of non-admissibility) applies is within the discretion of the trial court, and "will not be disturbed unless it is manifestly abused." *Pomona Valley Med. Ctr. v. Superior Court* (1997) 55 Cal.App.4th 93, 102. Generally speaking, the rule in CEQA cases is: "take great care to prepare a complete record; second, if it is not in the record, it did not happen; and third, when in doubt, refer back to rules one and two." *Protect Our Water v. County of Merced* (2003) 110 Cal.App.4th 362, 364. Said another way: "If it is not in the administrative record, it does not exist." *See Sierra Club v. California Coastal Com.* (2005) 35 Cal.4th 839, 863; Code of Civil Procedure § 1094.5; *Western States Petroleum Assn. v. Superior Court, supra,* 9 Cal.4th at 565.
Although the *existence* of a document may be judicially noticeable, the truth of statements contained in the document and its *proper interpretation are not subject to judicial notice* if those matters are reasonably disputable.' " *Unruh-Hazton v. Regents of University of California* (2008) 162 Cal.App.4th 343, 364-365; accord, *StorMedia Inc. v. Superior Court* (1999) 20 Cal.4th 449, 457, fn. 9 ("When judicial notice is taken of a document . . . the truthfulness and proper interpretation of the document are disputable").

Trial court rulings are not binding precedent. *E.g*., *Schachter v. Citigroup,* Inc. (2005) 126 Cal.App.4th 726, 738. Rulings in other cases are irrelevant absent some additional showing like the elements of claim or issue preclusion. *Drummond v. Desmarais* (2009) 176 Cal.App.4th 439, 448.

Judicial notice is granted as to the Sierra Club's Exhibit 1 and the County's Exhibits 1, 3, and 4. No objection was received to these Exhibits. Judicial notice is denied as to the Sierra Club's Exhibits 2-5; the County's evidentiary objections are sustained to Exhibits 2-5. The Sierra Club's Exhibits 2-5 are extra record evidence. Judicial notice is denied as to the County's Exhibit 2; the evidentiary objections are sustained to Exhibit 2. Exhibit 2 is irrelevant. It pertains to a solar project and a case that underwent judicial review in 2015, before the County's approval of the 2018 CAP. Judicial notice is granted as to the County's Exhibits 5-6 subject to the limitations on the doctrine stated above; the evidentiary objections to Exhibits 5-6 are overruled. In other words, the court takes judicial notice of the fact that the answers were filed, but does not accept the truth of any of the contentions expressed therein.

Needless to say, the court takes judicial notice of its own previous decisions and those of the Court of Appeal in *Sierra Club v. County of San Diego* (2014) 231 Cal.App.4th 1152 (*Sierra Club*), and *Golden Door v. County of San Diego* (2018) 27 Cal.App.5th 892 (*Golden Door*).

4. Discussion and Rulings.

The petitions are granted, and the County is ordered to set aside its February 14, 2018 approval of the 2018 CAP and the Supplemental EIR (SEIR) on which the 2018 CAP is based.

A. The County Persists in Failing to Carry Out its Legal Obligations With Regard to Greenhouse Gas Reduction.
The court knows full well that, when it decides to do so, the County knows how to prepare a lawful and valid EIR. *See San Diego Citizenry Group v. County of San Diego*, *supra*, 219 Cal.App.4th 1 (boutique winery case; this court's judgment finding the County's EIR valid affirmed on appeal); *see also Backcountry Against Dumps v. County of San Diego* (2015) 2015 WL 5451508 (wind turbine case; this court's judgment finding the County's EIR valid affirmed on appeal). In finding that the County did not do so when it approved the 2018 CAP, the court does not write on a clean slate. The County's efforts to comply with the statewide GHG/global warming requirements summarized in part IIA of the Court of

Appeal's September 28, 2018 opinion in Consolidated Case Nos. D072406 and D072433 have given rise to several decisions by the court, and two by the Court of Appeal. Virtually every decision has found the County's efforts wanting; this is particularly true in connection with the County's penchant for proceeding in the absence of substantial evidence and without adequate analysis. Although it does some things well, the 2018 SEIR fails as an informational document and as a document of public accountability in material ways, and the court finds the County has once again failed to proceed according to CEQA.

In *Sierra Club*, the Court of Appeal affirmed this court and held the 2012 CAP failed to comply with the County's general plan update mitigation measure CC-1.2 requiring detailed GHG emissions reduction targets; that the County's adoption of the 2012 CAP was a separate project requiring a separate determination of environmental impact; and that the CAP required a supplemental EIR. 231 Cal.App.4th 1152, 1167-69, 1174-76 (2014). The Court noted the County had failed to consider the use of the CAP and the Thresholds "as a plan-level program," *Ibid*. at 1172, that the Sierra Club had proposed "feasible mitigation measures, that the County "rejected these mitigation measures without substantial evidence for doing so," and that the CAP did "not fulfill the County's commitment under CEQA and Mitigation Measure CC-1.2, to provide detailed deadlines and enforceable measures to ensure GHG emissions will be reduced." *Ibid*. at 1176.

More recently, in *Golden Door*, the Court of Appeal affirmed this court and held the 2016 Guidance Document violated CEQA and that the threshold of significance was not supported by substantial evidence. 27 Cal.App.5th 892, 894-95; 238 Cal.Rptr.3d 559, 561-562 (2018). Justice Huffman, who notably concurred only in the result of Justice Nares' opinion in *Sierra Club*, held that the County had failed "to address adequately the core concern raised by plaintiffs in the court below, which is reliance on statewide data without evidence supporting its relationship to countywide reductions," and that this "fails to meet the substantial evidence standard." 27 Cal.App.5th at 904; 238 Cal.Rptr.3d at 569.

B. <u>Petitioners Complied with the Exhaustion Requirements</u>.

In its opposition brief, the County contends that petitioners failed to exhaust the administrative exhaustion requirements for several claims. ROA 81, opposition brief, p. 12:19-28. The County fails to set forth any law, facts, or analysis in support of its failure to exhaust contentions, other than referencing the County's answers to the Sierra Club's and Golden Door's writ of mandate petitions. In this context, "exhaustion" requires that prior to the close of the public hearing, some member of the public "fairly apprised" the County of the issue. *See* Pub. Resources Code § 21177(a); *see also Santa Clarita Organization for Planning the Environment v. City of Santa Clarita* (2011) 197 Cal.App.4th 1042, 1052. Here, public testimony did not close until about mid-day February 14, 2018. *See* AR 79:28681.

The issue of whether in-process GPAs would affect meeting 2020 GHG reduction targets (ROA 81, opposition brief, p. 15:2-6) was exhausted. *See*, e.g., AR 22:18416, AR 22:28418, and AR 22:18422 (lack of vehicle miles travelled (VMT) analysis creates uncertainty regarding emissions targets), AR 22:18424 (the County may lack ability to meet SB 375 goals), AR 22:18429 (the County must demonstrate it will comply with reductions previously agreed to in the 2011 GPU), AR 22:18433 (the County not on track to meet emissions targets), AR 22:18449 ("no open lands should be annexed or rezoned for greater development until there is an adequate CAP that actually achieves the 2020 emission reduction goals the County agreed to in its 2011 General Plan update"), AR 22:18628 (must better evaluate amendments to meet goals).

The issue of inconsistent geographic areas for analysis (ROA 81, opposition brief, p. 23:27-28) was exhausted. *See*, *e.g.*, AR 16-15349 ("concerned about the CAP's mitigation measure for cumulative GHG impacts caused by General Plan Amendment projects"); AR 22:18424, AR 22: 19604-05; AR 38:24174.

The issue of M-GHG-1 as a separate CEQA project (ROA 81, opposition brief, p. 26:11-14) was exhausted. *See*, *e.g.*, AR 22:19592-93. The case relied upon by the County, *CREED v. City of San*

Diego (2011) 196 Cal.App.4th 515, 527-28, is inapposite. The issues presented by petitioners and other interested persons to the County were not "general, unelaborated objections." The issues raised by petitioners and other interested persons were fairly presented to the County in comment letters with clearly organized headings.

Therefore, the County's exhaustion contentions fail. It is noteworthy that the December 21 argument consumed several hours, yet exhaustion was not raised.

C. The 2018 CAP is Inconsistent with the County's General Plan.

The California Planning and Zoning Law, commencing with Gov. Code section 65000, requires that cities and counties have a General Plan (Gov. Code § 65300), consisting of specified required elements (Gov. Code § 65302), which is intended to be "a constitution for all future developments." *See Concerned Citizens of Calaveras County v. Calaveras Board of Supervisors* (1985) 166 Cal.App.3d 90, 94, 97. The Planning and Zoning Law provides that any land use approval to be consistent with the General Plan. *See Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 570-71. A project fails for general plan inconsistency if it conflicts with a general plan policy that is fundamental, mandatory and clear. *Spring Valley Lake Assn. v. City of Victorville,* 248 Cal. App. 4th 91, 100 (2016).

Here, the County incorporated a fundamental, mandatory and clear policy into both the 2011 and the 2018 iterations of the General Plan: that GHG emission reductions be local. In 2011, the County explicitly used the words "**local** GHG emissions." in COS-20. See AR25:21559; see also AR 33843 (Excerpts tab 34 at 5-38). This did not change in the 2018 amendment. The County's 2018 reiteration stated, again in COS-20, that the CAP should achieve GHG emissions from the "unincorporated County" and from "County operations." *See* AR 16:13165 (italics added; strikeouts and additions omitted):

"GPU Goal COS 20 (Governance and Administration)

Reduction of *community-wide (i.e., unincorporated County) and County operations greenhouse gas emissions* contributing to climate change that meet or exceed requirements of the Global Warming Solutions Act of 2006, as amended by Senate Bill 32 (as amended, Pavley. Global Warming Solutions Act of 2006: emissions limit.)

GPU Policy COS 20.1 (Climate Action Plan)

Prepare, maintain, and implement a Climate Action Plan for the *reduction of community-wide (i.e., unincorporated County) and County operations greenhouse gas emissions* consistent with the California Environmental Quality Act (CEQA) Guidelines Section 15183.5."

Thus, the County's General Plan has consistently, for 7 years, stated that it required in-County GHG reductions. However, M-GHG-1, which is expressly incorporated into the 2018 CAP (*see e.g.*, AR 1340:58761 that states the 2018 CAP expressly incorporates M-GHG-1) allows essentially unlimited increases in GHG within the County. In this respect, applicants proposing projects in the County can meet their GHG mitigation requirements by purchasing offsets from anywhere in the world, in the discretion of the Director of a County department.

See AR 38:22771, AR 38-23054 ("The County will consider to the satisfaction of the Director of Planning & Development Services (PDS) the following geographic priorities for GHG reduction features and GHG reduction projects and programs: 1) project design features onsite reduction measures; 2) off-site within the unincorporated areas of the County of San Diego; 3) off-site within the County of San Diego; 4 off-site within the State of California; 5) off-site within the United States; and 6) off-site internationally".)

The fact that a single Supervisor opined rather ambiguously at a single hearing that COS-20 was not intended to restrict GHG reductions to local operations or actions does not change the court's view. If this had been the intention of all the Supervisors, it would have been a simple matter to include a sentence in COS-20 making this crystal clear.

In essence, the County would freely allow the use of offsets purchased anywhere on the planet, with no limit on geographic scope or duration (and no temporal or cumulative limit), in order for project applicants within the County to meet their GHG mitigation requirements. All that is required is the "satisfaction" of the Planning Director. No standards or criteria are stated for achieving the "satisfaction"

of the Planning Director. As such, the County violated its General Plan and the Planning and Zoning Law by allowing the free use of out-of-county GHG offsets for projects within the County. This standard-free granting of unfettered discretion to an unelected official is antithetical to the public participation foundation of CEQA – particularly when it concerns the signal environmental issue of our times.

To the extent the County contends that M-GHG-1's "geographic priorities for GHG reduction features" requires offsets to result in GHG reductions within the County, this requirement is illusory. The County even conceded this point in the SEIR, explaining that only one project (a reforestation project) within the County is included on the approved registries for offset projects, but offsets from this project are not available. AR 38:23111. The court has no trouble concluding that future project applicants are unlikely to regard the "geographic priorities" as binding on them in any sense. Certainly the County was unable to articulate, during the December 21 hearing, anything binding or enforceable about the "geographic priorities," other than the order of their listing.

The County committed in 2011 and again in 2018 to achieving GHG reductions within the County. The Administrative Record does not support a major deviation from that commitment, particularly when essentially all seven of the intervening years have been marked by the litigation summarized above. The 2018 CAP appears to the court to be an attempt to address GHG reduction with a window-dressing pronouncement of policy suggesting aggressive action, but the devil is in the details. And here, the details allow the bold policy pronouncement to be emasculated by the unfettered access to out of region credit purchases. The people of the County have a right to expect more from their elected officials, and the Planning and Zoning Law, the General Plan, and CEQA all require that they provide more.

D. <u>The County Violated CEQA by Allowing the Purchase of Out-of-County GHG Offsets Without Legally Sufficient Analysis</u>.

Initially, the County fails to show in the Administrative Record that out-of-county offsets will be enforceable, verifiable, and of sufficient duration. The County contends that the SEIR's references to a requirement that carbon credits be purchased from "CARB-approved registries" (*see, e.g.*, AR 16:13892; 16 AR: 15418) suggests that the M-GHG-1 program has CARB approval. However, the M-GHG-1 program is not remotely similar to the CARB program. Under California's Cap-and-Trade program, a registry offset credit must "[r]epresent a GHG emission reduction ... that is real, additional, quantifiable, permanent, verifiable, and enforceable." 17 CCR § 95970. The Cap-and-Trade program has strict monitoring, reporting, and record retention requirements for offset projects. 17 CCR § 95976. The offsets are generally limited to the geographic boundaries of the United States and United States territories. 17 CCR § 95972(c). Offset credits can only be used to meet up to 8% of participants' annual compliance obligations. 17 CCR § 95854. By contrast, the County's proposed program has no limitation on a participant's annual compliance obligations. Also, it does not set time limits on the offsets it authorizes, nor does it limit the geographic scope. Further, the offsets require the "satisfaction" of the Planning Director, but no standards are provided for obtaining this "satisfaction." The County fails to show that out-of-county offsets will be enforceable, verifiable, and of sufficient duration. The County also failed to adequately analyze the infeasibility of requiring offset credits to be limited to within the County, or at least to the Southern California region.

Second, the SEIR failed to adequately analyze the impact of the 2018 CAP on the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) prepared by SANDAG to carry out the mandate of SB 375 that transportation planning and funding should be used to reduce GHG emissions, in part by changing land use patterns to require less driving. *Cleveland National Forest Foundation v. SANDAG* (2017) 3 Cal.5th 497, 506.

CEQA Guidelines, section 15125(d) requires that an "EIR shall discuss any inconsistencies between the proposed project and applicable . . . regional plans. Such regional plans include, but are not limited to . . . regional transportation plans." In this matter, the SEIR does not directly address such inconsistencies with SANDAG's plan. The SEIR replied to comments "express[ing] concern that the proposed GHG

reduction measures within the CAP would not meet the VMT [vehicle miles traveled, i.e., driving] reduction targets established" in the SANDAG RTP/SCS (AR 16:13853) by asserting "it is the responsibility of SANDAG to ensure that the region is demonstrating consistency with SB 375." AR 16:13854. Nonetheless, stating SANDAG's responsibilities under SB 375 does not satisfy the County's duty under CEQA Guidelines section 15125(d), which requires an EIR to examine and discuss any inconsistencies between the 2018 CAP and the SANDAG plan.

Also, the SEIR states the County provided accurate land use planning data to SANDAG for use in preparing the regional plan. AR 16:13854. Nevertheless, while that land use information was accurate at the time it was provided, and while the 2018 CAP itself does not change any land use, the SEIR admits the GHG emissions data used in the 2018 CAP are different from the data the County provided to SANDAG. AR 16:13855. In this respect, the SEIR indicates the 2018 CAP's inventory includes emissions from General Plan Amendments (GPAs) approved after the County provided its land use information to SANDAG, data whose impact on the SANDAG plan has not been evaluated by the County. *Ibid*. However, there is no discussion in the SEIR of the impact that the GHG emissions from the GPAs approved after the County submitted its data to SANDAG, or from reasonably foreseeable future GPAs, may have on the regional plan's VMT or GHG reduction goals. As such, the County's approach does not properly address VMT impacts. In essence, the County failed to adequately analyze the VMT impacts and resulting implications for the San Diego's area SB 375 Planning and Goals.

Third, the SEIR failed to adequate analyze M-GHG-1 impacts. The M-GHG-1 allows applicants to meet their GHG mitigation requirements by purchasing offsets from anywhere in the world. AR 38:22771, AR 38-23054. The M-GHG-1 allows practically unlimited increases in GHG emissions within the County, subject only to the discretion of a single Director. *Ibid*. However, the SEIR failed to adequately analyze M-GHG-1 impacts. It failed to analyze the potential VMT impacts from the known and/or in process GPAs that would necessarily rely on it. And by failing to include information about the potential VMT impacts of known and/or in progress GPAs, the County deprived the public of adequate information regarding, among other things, SANDAG's ability to meet State mandated VMT reduction requirements (SB 375).

Fourth, the SEIR failed to analyze cumulative GHG impacts. In this respect, the County failed to define a geographic scope for analyzing cumulative GHGs, as required by CEQA Guidelines, section 15130(b), which requires agencies to define a consistent geographic scope for their cumulative impacts analyses. Instead, the County used a geographic scope that was inconsistent and alternated between a "Countywide" geographic scope of cumulative GHGs and a "global" geographic scope. *See, e.g*., AR 38-22749 ("cumulative impact analysis . . . was identified as the entire unincorporated County"]; *see also*, *e.g*., AR 38: 22769 ("global climate change is inherently a cumulative issue").) This inconsistency violates CEQA Guidelines section 15130(b).

Fifth, the County improperly delegated and deferred feasibility findings. M-GHG-1 delegates to the Planning Director deferred findings of feasibility for mitigation measures for in-process and future GPAs. *See* AR 38-23054-55. In particular, it delegates to the Planning Directory the determination of "geographic priorities" for the offset program and when an applicant may be exempted from obtaining "local" offsets due to "financial feasibility." *Ibid*. It also delegates to the Planning Director the determination of when non-standard offsets may be used, *i.e*., whether a registry is sufficiently "reputable" to substitute for the expressly defined offset registries. *Ibid*. Additionally, there is no requirement that any offset contract be made directly enforceable by the County of San Diego. Moreover, the language of M-GHG-1 indicates such feasibility determinations would occur after project approval and outside of public review and hearing. *Ibid*.

Essentially, M-GHG-1, a deferred mitigation measure, violates CEQA. It lacks adequate performance standards. It relies on standardless delegation to County staff. *See, e.g*., *Communities for a Better Environment v. City of Richmond* (2010) 184 Cal.App.4th 70, 94 (list of potential methods of mitigation for later selection without "specific and mandatory performance standards" is improper deferral]; *see*

also, e.g., *California Clean Energy Commission v. City of San Jose* (2013) 220 Cal.App.4th 1325, 1340 ("delegation to a nonelected nondecisionmaking body, the planning commission," improper under CEQA.) As such, the County improperly delegated and deferred feasibility findings under M-GHG-1.

Sixth, the SEIR failed to address impacts to energy and environmental justice. It failed to analyze potential energy impacts that may result from GPAs and strategies to reduce energy impacts on such project sites. Also, it is undisputed that the County failed to evaluate the reasonably foreseeable impacts on energy usage in allowing increased VMTs in exchange for GHG reduction through offsets. Moreover, the SEIR made no attempt to disclose the increased health damage that could occur to the more vulnerable County residents (children, the ill, and disadvantaged communities), from the project "increasing nonattainment criteria pollutants" (AR 16: 13401), or from not requiring GHG offsets to be obtained in-County. *See* CEQA Guidelines, § 15126.2 (EIR shall identify and analyze all foreseeable significant harm of the project.

Seventh, the SEIR failed to evaluate smart growth mitigation or alternatives for GPAs. "The EIR is the heart of CEQA, and the mitigation and alternatives discussion forms the core of the EIR." *In re Bay-Delta etc*. (2008) 43 Cal.4th 1143, 1162. Case law emphasizes the importance of analyzing a "smart growth" mitigation measure or alternative. *Cleveland National Forest Foundation v. SANDAG* (2017) 3 Cal.5th 497, 506 ("The reductions mandated by Senate Bill 375 may be achieved through a variety of means, including 'smart growth' planning ...."); *Cleveland National Forest Foundation v. SANDAG* (2017) 17 Cal.App.5th 413, 433-34 (error to fail to address smart growth in mitigation and alternatives).

In essence, the petitioners asked for an alternative land use plan to reduce VMT. None of the alternatives in the SEIR addressed VMT or transportation-related emissions. Instead, the SEIR alternative analysis looked at waste and renewable energy. *See*, *e.g*., AR 38:22392-95. Without an alternative aimed at reducing land-use-derived VMT, the analysis in the SEIR lacked "those alternatives necessary to permit a reasoned choice." CEQA Guidelines, § 15126.6(f)

Eighth, the County failed to adequately respond to comments, thereby violating CEQA. "Comments are an integral part of the EIR and should be relied upon by the decisionmakers." *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 735. Responses to comments must be in good faith and rely on factual information; "'[c]onclusory statements unsupported by factual information"' do not satisfy CEQA. *Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 475.

For example, Sempra commented that only 13% of CAP GHG reductions would come from a transportation sector that emits 45% of County GHGs and advocated decreasing VMT through the County's comprehensive planning powers. AR 16:15041-42. The County's "response" was that it will explore increasing the use of electric vehicles, which was nonresponsive. AR 16:15040-42. Master Response 9 admits that transportation sector reductions are proportionally low, but does not explain why transportation reductions were not included in the alternatives analysis. AR 38:23098-100. Master Responses 2 and 5 are likewise nonresponsive and rely on data that does not include VMT generated by GPAs under consideration and the ones that are likely to be submitted for County review. AR 38: 23072-75, AR 38: 23084-87. These are not adequate responses under CEQA.

As a second example, the Sierra Club suggested that the County "install a car parking system that gives its employees more choice over how they spend their wage" by unbundling free or subsidized parking from employee benefits. AR 16:15048-49. In response, the County stated the suggestion "would be infeasible" and set forth conclusions and argument. *Ibid*. CEQA requires the County to set forth substantial evidence to support its conclusions and argument that mitigation measures are infeasible. The County has failed to do so.

By way of further example, SANDAG commented on the draft CAP to encourage the CAP to embrace smart growth policies. AR 38-23133. SANDAG asked the County to take into account smart growth policies. *Ibid*. However, the County's responses in the SEIR do not say anything about the impact of M-GHG-1's contribution to increased VMT. AR 38:24144-46, AR 38:24578-79. The SEIR's failure to

address M-GHG-1's contribution to increased VMT is a CEQA impact that was required to be addressed prior to CAP approval. The responses to comments are inadequate.
In light of the foregoing, the petitions for writ of mandate are granted.
The court believes it has resolved the petitions on all material grounds. To the extent any party disagrees, the court declines to address the other contentions of the parties. *See PDK Labs. Inc. v. DEA* (D.C. Cir. 2004) 362 F.3d 786, 799 (Roberts, J., concurring in part and concurring in the judgment) (noting "the cardinal principle of judicial restraint" that "if it is not necessary to decide more, it is necessary not to decide more"); *Compare Natter v. Palm Desert Rent Review Comm'n.* (1987) 190 Cal.App.3d 994, 1001 (reversal on stated grounds made it unnecessary to resolve other contentions challenging constitutionality); *Young v. Three for One Oil Royalties* (1934) 1 Cal.2d 639, 647-648 (court declined to rule on matters unnecessary to resolving the case before the court, as to do so would be to provide "dictum pure and simple").

E. Remedy.

Let a writ of mandate issue forthwith, directing respondent the County of San Diego to set aside its February 14, 2018 approvals of the CAP and the SEIR [specifically items 1-8 in the County's February 14, 2018 Minute Order (AR 80-28788-89)]. During the December 21 hearing, the County offered a severance argument based on the highlighted portions of Public Resources Code section 21168.9:
(a) If a court finds, as a result of a trial, hearing, or remand from an appellate court, that any determination, finding, or decision of a public agency has been made without compliance with this division, the court shall enter an order that includes one or more of the following:
(1) A mandate that the determination, finding, or decision be voided by the public agency, in whole or in part.
(2) If the court finds that a specific project activity or activities will prejudice the consideration or implementation of particular mitigation measures or alternatives to the project, a mandate that the public agency and any real parties in interest suspend any or all specific project activity or activities, pursuant to the determination, finding, or decision, that could result in an adverse change or alteration to the physical environment, until the public agency has taken any actions that may be necessary to bring the determination, finding, or decision into compliance with this division.
(3) A mandate that the public agency take specific action as may be necessary to bring the determination, finding, or decision into compliance with this division.
(b) Any order pursuant to subdivision (a) shall include only those mandates which are necessary to achieve compliance with this division and only those specific project activities in noncompliance with this division. The order shall be made by the issuance of a peremptory writ of mandate specifying what action by the public agency is necessary to comply with this division. **However, the order shall be limited to that portion of a determination, finding, or decision or the specific project activity or activities found to be in noncompliance only if a court finds that (1) the portion or specific project activity or activities are severable, (2) severance will not prejudice complete and full compliance with this division, and (3) the court has not found the remainder of the project to be in noncompliance with this division.** The trial court shall retain jurisdiction over the public agency's proceedings by way of a return to the peremptory writ until the court has determined that the public agency has complied with this division.
(c) Nothing in this section authorizes a court to direct any public agency to exercise its discretion in any particular way. Except as expressly provided in this section, nothing in this section is intended to limit the equitable powers of the court.

The court finds that M-GHG-1, which allows essentially unlimited increases in GHG within the County by allowing developers to purchase offsets from anywhere in the world, is an essential element (if not the

centerpiece) of the 2018 CAP (*see e.g.*, AR 1340:58761 that states the 2018 CAP expressly incorporates M-GHG-1). The court therefore finds that the offset purchase element to be not severable from other project activities, and declines to adopt the County's severance proposal.

A permanent injunction is also issued essentially in accordance with the preliminary injunction granted on September 14, 2018 (ROA 323 in 2012 case). The injunction does not prohibit all development projects in the County; it affects only those projects reliant on the use of the legally inadequate program set forth in M-GHG-1. While the injunction is in place, the County may consider any project that does not depend on the use of the legally insufficient M-GHG-1 program. The bonds previously imposed to support the preliminary injunction are exonerated.

As they did last September, petitioners asked the court to extend the injunctive relief to reach projects in which the development approvals used mitigation measures they perceive to be "substantially similar" to M-GHG-1. This the court declined (and declines) to do. The first reason is philosophical: the power to grant injunctions is an important and significant one, and if it is to remain so, it is important that injunctions be granted judiciously and carefully. Second, the court has been and remains concerned that any injunction not violate the due process rights of project applicants not before the court.

Petitioners expressed frustration that other tribunals will now have to adjudicate whether the County has, in adopting mitigation measures in individual development projects, essentially used the legally insufficient M-GHG-1 program but called it something else. The court understands this frustration. Certainly it would be more efficient to simply bar the any out of county carbon credit mechanism, regardless of moniker. But efficiency must yield to due process, and the court has complete confidence in the judges to whom the individual cases have been assigned to sort out, with the participation of the affected project proponent, whether the GHG mitigation measure in any individual instance was a wolf in sheep's clothing.

The court has signed peremptory writs of mandate and permanent injunction orders consistent with the foregoing.

To the extent it is not obvious from the foregoing, the County's request to discharge the remaining elements of the May 4, 2015 Supplemental Writ of Mandate in the 2012 *Sierra Club* case is now denied, inasmuch as the court has now determined that the 2018 CAP does not comply with CEQA.

Finally, the County must file a return to comply with the mandate of the Court of Appeal in Case No. 2016-00037402 not later than January 10, 2019. A status conference is hereby set in that case for February 1, 2019 so that the court may monitor the timeliness and adequacy of that return.

IT IS SO ORDERED this 24th day of December, 2018.

_____
Timothy B. Taylor, Judge of the Superior Court

_____

*Concern for delay in the resolution of these matters at the trial court level also informed the court's decision to deny the AG's tardy application for leave to file *amicus* briefing. ROA 62. As the court has observed, it is particularly true in CEQA cases that because the trial courts are not final, it is important that they be prompt.

_____
Judge Timothy Taylor

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 42

WILSON GEOSCIENCES INC.

Engineering and Environmental Geology

May 26, 2020

Robert P. Silverstein, Esq.
The Silverstein Law Firm, APC
215 N. Marengo Avenue, 3rd Floor
Pasadena, CA 91101

SUBJECT: Review and Analysis of the Hollywood Center (HC) Draft Environmental Impact Report (DEIR) and Appended/Referenced Documents Related to Active Faulting Associated with the Alquist-Priolo Earthquake Fault Zone (APEFZ) within the Hollywood 7.5-Minute Topographic Quadrangle; DEIR Dated April 16, 2020 by Environmental Sciences Associates, Inc. (ESA)

Dear Mr. Silverstein:

INTRODUCTION, QUALIFICATIONS AND REPORT ORGANIZATION

This firm was retained by your office to review the Hollywood Center (HC) Draft Environmental Impact Report (DEIR) and appended/referenced documents related to active faulting associated with the Alquist-Priolo Earthquake Fault Zone (APEFZ) within the Hollywood 7.5-Minute Topographic Quadrangle. The DEIR, dated April 16, 2020, was prepared by Environmental Sciences Associates, Inc. (ESA). Our review focused on the IV-D Geology and Soils section, and those associated appendices and reports utilized to determine the activity and/or location of faults within or adjacent to the proposed HC development area. In general, the previous studies for Millennium Hollywood (MH) are assumed to be included under the HC reference. Listed under the subsection titles used in this letter, the other primary referenced documents reviewed are a part of the DEIR referenced materials and can be found within the DEIR (City of Los Angeles, 2020; https://planning.lacity.org/development-services/eir/hollywood-center-project-1), or by an internet search. The primary references within three categories include:

The Draft Environmental Impact Report (DEIR) for the Hollywood Center Project (2020)

1) DEIR Appendix G-1 - 2015 Fault Activity Investigation (which, as made available by the City to the public during the majority of the public comment period, contained substantial amounts of unreadable text and numbers on all of the Plates and Figures);
2) Appendix G-2 – Surface Fault Rupture Hazard Evaluation Report;
3) Appendix G-3 – Geotechnical Investigation;

California Geological Survey Reports

4) California Geological Survey (CGS), 2018, Revised Special Publication 42, Earthquake Fault Zones, A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California, Revised 2018;
5) California Geological Survey, 2018a, Earthquake Zones of Required Investigation Maps (EZRIMs), http://gmw.conservation.ca.gov/shp/EZRIM/Maps/);

6) California Geological Survey, 2014, Fault Evaluation Report FER 253 Supplement No. 1, The Hollywood Fault in the Hollywood 7.5' Quadrangle, Los Angeles County, California by Hernandez, J., November 5, 2014;

Previous Hollywood Center Project Site and Nearby Fault Evaluation Reports

7) Surface Fault Rupture Evaluation Report, Central Hollywood Tract, No. 2, Lots 1, 2, 3 and 5, 1718 Vine Street, Los Angeles, California, July 28, 2016 by Group Delta Consultants, Inc. (GDC);

8) Fault Investigation Report, Tract No. 26206, Lot 1 [APN 5546-003-015 & 016] and Hollywood Tract, Block 22, Lots 4.2, 5, 6, and 7 and Lots 9, 10, and 11 [APN 5546-003-003, -004, -009, -010, 019, -020] 6305 Yucca Street Los Angeles, California by Group Delta Consultants, Inc. (GDC);

9) Fault Activity Investigation 6230 Yucca Street SW Corner of Yucca Street and Argyle Avenue Hollywood Area, City of Los Angeles, California GDC Project No. LA-1161A by Group Delta Consultants, Inc. (GDC);

10) Catchings, R. D., Hernandez, J., Goldman, M. R., Chan, J. H., Sickler, R. R., Olson, B., and Criley, C. J., May 2020, 2018 U.S. Geological Survey–California Geological Survey Fault-imaging Surveys across the Hollywood and Santa Monica Faults, Los Angeles County, California: U.S. Geological Survey Open-File Report 2020–1049, 42 p., https://doi.org/10.3133/ofr20201049 (**Exhibit C**); and,

11) Ninyo and Moore, 2015, Supplemental Fault Rupture Hazard Evaluation, Hollywood Courthouse, Los Angeles, California, Project No. 402132007, June 15, 2015 (**Exhibit D**).

The undersigned has been a licensed Professional Geologist and Certified Engineering Geologist in the State of California since 1974. His resume is attached as **Exhibit A**.

This letter report includes: 1) a brief description of the proposed project as we understand it from the April 2020 DEIR; 2) a statement of the purpose of this report; 3) a discussion/evaluation of, and comments on, the DEIR as related to Project Site fault rupture potential, which is a specific issue called out in the CEQA Appendix G Guidelines for environmental impact studies; and 4) a summary and conclusions. The report **Figures** (see **Exhibit B**), a 2020 United States Geological Survey (USGS) technical report (**Exhibit C**), and a 2015 Ninyo & Moore report (**Exhibit D**) are attached. A list of **Exhibit B** figures is provided after the **References Cited** and **Figures 1** through **5** are noted in this report in bold text (e.g., **Figure 1**).

HOLLYWOOD CENTER PROJECT DESCRIPTION

The Hollywood Center Project is a proposed mixed-use development on an approximately 4.46-acre site, generally bounded by Yucca Street on the north, Ivar Avenue on the west, Argyle Avenue on the east, adjacent development and Hollywood Boulevard on the south, and bifurcated by Vine Street (see DEIR Section II, Figure II-5). The portion of the Project Site located between Ivar Avenue and Vine Street is identified as the "West Site", and the portion located between Vine Street and Argyle Avenue is identified as the "East Site". The Project Site

would be redeveloped with up to 1,005 residential units and up to 30,176 square feet of commercial uses within four new mixed-use buildings (West Building, East Building, West Senior Building, East Senior Building) with proposed heights of 35, 46, 11, and 11 stories, respectively. Overall, the Project would contain up to 1,287,150 square feet of floor area. This represents the largest option by square feet as described in the DEIR Notice of Completion and Availability. Also, there would be up to 1,521 vehicle parking spaces within five- and six-level subterranean parking garages and enclosed at-grade parking.

PURPOSE OF THIS REVIEW

The Hollywood Center (HC; formerly Millennium Hollywood) project has generated years of investigations and technical studies related to geologic/earthquake faulting at the proposed Project Site (Site). In this author's consideration of these thousands of pages of studies, this Draft Environmental Impact Report (DEIR) review is focused on the following three questions you proposed that we address. The answers to these questions govern the suitability of the Site with respect to the earthquake hazard of ground displacement due to a probable earthquake on the Hollywood Fault segment of the Santa Monica-Hollywood-Raymond Fault System, or due to a larger earthquake encompassing the entire (~125-mile long) fault system. The three questions are:

1. Are there faults within the HC Project Site?
2. Where are the faults located within the HC Project Site based on the evidence available?
3. What is the activity level (Holocene or pre-Holocene) of the faults?

This review has utilized the key reports addressing faulting at the Site, some reports not included as part of the DEIR, including a very significant May 2020 report from the United States Geological Survey. The reader is encouraged to look at these reports, particularly the pages, figures, plates, and tables specifically referenced herein. Where emphasis is needed or some expansion is required, new **Figures 1** through **5** are provided with this report. **Figure 1** from the DEIR is the Site map prepared by the developer's geologist, Group Delta Consultants (GDC), showing previous exploration (Cone Penetration Test [CPTs], borings, and trenches) within the East and West divisions of the proposed development. The base map for **Figures 1**, **2** and **3** is faulty due to missing words, letters, and numbers as are all Portable Document Format (PDF) Plates and Figures from the DEIR's Appendix G-1, as circulated and published by the City, preventing the reader from determining the content of the data provided.

DISCUSSION AND EVALUATION OF HC PROJECT SITE FAULTING, AND THE ACTIVITY OF FAULTS WITHIN AND NEAR THE PROJECT SITE

Question 1: Are there Faults within the HC Project Site?

The DEIR begins (page 2, Table IV.D-1) by claiming, numerous times, that prior geotechnical investigations found no Holocene-active faults on either the East or the West Sites. Further Site-specific references to active faulting are found starting on DEIR page IV.D-17 (further referred

to as simply 17). The statements are as follows with the corresponding DEIR abbreviated page numbers:

17 – "The nearest significant active fault to the Project Site is the Hollywood Fault."
18 – "Figure IV.D-2 showing earthquake fault zones and active fault traces."
20 – ". . . the 2015 and 2019 Fault Studies for the Project Site, which are informed by specific investigations of and on the Project Site, indicate that no Holocene-active faulting occurs beneath or extends toward the Project Site, including the Hollywood Fault."
22 – "Within the Hollywood Fault Zone, there is evidence of Holocene-activity, and, therefore, the zone is considered active." And, "The 2015 and 2019 Fault Studies conducted for the Project Site, along with fault investigations conducted for projects in the surrounding areas, including sites north and west of the Project Site, indicate there is no active faulting beneath or extending toward the Project Site."
23 – "This continuous pre-Holocene stratigraphy precludes the possibility of active faulting underlying these (sic) the Project Site."
32 – "As discussed above in the Existing Conditions section, the site-specific 2015 and 2019 Fault Studies included a soil profile horizons evaluation and other investigations that concluded that there is no active faulting beneath the Project Site or extending toward the Project Site." And, "Therefore, because the 2015 and 2019 Fault Studies concluded there is no active faulting beneath the Project Site, development of the Project or the Project with the East Site Hotel Option would not directly or indirectly cause substantial adverse effects, including risk of loss, injury, or death involving fault rupture, and, as such, the impact relative to fault rupture would be less than significant."
33 – "As discussed above, the 2015 and 2019 Fault Studies and Geotechnical Investigations, which also reference various fault investigation studies conducted near the Project Site (see Subsection IV.D.1, Introduction, above), have concluded that there is no active faulting beneath the Project Site or extending toward the Project Site."

Despite the repeated claims of "no active faulting", the following discussion demonstrates the important first fact that GDC has agreed that faults do underlie the site including a continuous fault nearly coincident with the "southern strand", "southern trace", or "southern fault" (or some combination of these terms as generally synonymously used by the CGS) as shown and discussed by the California Geological Survey (CGS, 2014) in its Alquist-Priolo Earthquake Fault Zone (APEFZ) evaluation FER-253 Supplement No. 1 (pages 26 and 27).

In a May 17, 2015 response to a March 17, 2015 letter from the City of Los Angeles (City), GDC responds to California Geological Survey (CGS) comments presenting the CGS conclusions regarding fault features discovered based on the Cone Penetration Test (CPT) soundings used in preparation of GDC cross-sections M-M', N-N', O-O', and P-P' within the HC East and West sites (**Figure 2**; black dotted line). The CGS showed not only more numerous faults on the cross-sections than GDC, but also fault offsets in younger deposits than the GDC showed. Other implications of the CGS conclusions are discussed below, however as related to this question the GDC response states "Our own analysis indicates the potential presence of an inferred inactive fault near CPT-20. This inferred inactive fault was found on other CPT transects O-O' and P-P' on the West Millennium Site. Therefore, its interpretation has both vertical and lateral

correlation across the explorations of both the East and West Millennium Sites." This verifies that GDC accepts that a continuous fault passes near CPT 20 on cross-section M-M' adjacent to Argyle Avenue and extends across the Project Site to at least cross-section O-O' near Ivar Avenue.

The stated purpose of the 2015 and 2019 GDC Fault Studies was to evaluate the Project Site for Holocene-age faulting, as discussed for Question 2 below. The 2019 GDC Fault Study at the southeast corner of Ivar Avenue and Yucca Street confirms the presence of numerous faults crossing the West Senior Building site, with what appears to be the most significant fault F10 **(Figure 3, Inset 3a)** trending nearly east-west through the West Building Second Floor Amenity Deck as it approaches 2015 cross-section O-O' (shown as OE-OE' for the 2019 study).

Accordingly, as to Question 1, there are faults agreed to be across and within the HC Project Site, and the DEIR and Appendix G-1 clearly accept that there are such faults, although consistently claiming there is "no active faulting" or that such faults are "inferred". Faults exist at or near the locations noted by GDC in its May 17, 2015 response letter to the City (black dotted line) and the CGS analysis/conclusions regarding cross-sections M-M', P-P', and O-O' indicate other such young faults exist within the Project Site (see Question 3 below).

Question 2: Where are the Faults Located within the HC Project Site Based on the Evidence Available?

The CGS Alquist-Priolo Fault Evaluation Report (FER) 253 Supplement No. 1 (2014) Figure 7 (page 11) shows a compilation of the Hollywood Fault locations (somewhat approximate on this small map scale) with the origins of each fault section noted as S- and a number, referring to a study location referenced in the FER-253 Supplement No. 1. CGS shows the previous FER fault locations that were removed with X's. The southern red dashed line is the "southern fault" referred to by GDC (2015, pages 15 and 16) and fits the red dashed line for the Yucca Street Strand shown on the CGS's FER-253 Supplement No. 1 Figure 7.

As noted in the previous subsection, in their May 17, 2015 response to the City of Los Angeles, GDC responds to California Geological Survey (CGS) comments presenting the CGS analysis/conclusions regarding fault features. The CGS geologists observed additional fault features based on the Cone Penetration Test (CPT) soundings used in GDC's 2015 preparation of cross-sections M-M' (Plate 7, CPT C-20), N-N', P-P' (Plate 8, CPT C-104), and O-O' (Plate 9, boring B-4) within the HC East and West Sites (**Figure 1**). Given the evidence described in the GDC May 17, 2015 letter discussed above, faults exist beneath the Project Site and in particular three fault locations are linked from cross-section M-M' at the east edge of the East Site to cross-section O-O' in the western half of the West Site (DEIR, Appendix G-1, Figure 8). GDC (2015, Plate 1; **Figures 1 and 2**) shows the fault as a black dotted line crossing the East and West Sites. Planning for the GDC East Trench (DEIR, Appendix G-1, Figure 8) did not allow for it to extend far enough south to intercept the "southern fault" shown by the CGS in FER-253 (see CGS Figure 7 gold-colored trench location lines and **Figure 2**).

GDC (2019) maps faults that they show as continuous across the northwest corner of the West Site at Ivar Avenue with fault F10 showing approximately 30-feet of up-on-the-north reverse fault movement (GDC 2019, Appendix G-2, page 11 and Figure 9.1; **Figure 3**). GDC recognizes and acknowledges the 2019 GDC fault investigation at the southeast corner of Ivar Avenue and Yucca Streets shows numerous faults in trenches that are shown as trending northeast to southwest and east-northeast to west-southwest (Figures 9.1 and 9.2). The fault trenches do not extend far enough to the south to intercept similarly oriented faults, like fault F10, that may trend toward the main West and East Buildings.

As a part of the United States Geological Survey (USGS) mission for the advancement of scientific knowledge, the USGS recently conducted north-south oriented guided-wave and related seismic surveys (USGS, April 2020) along Argyle Avenue between Hollywood Boulevard on the south and Yucca Street on the north. This USGS report, which is directly relevant to the proposed Project Site, was published on May 8, 2020, after release of the DEIR on April 16, 2020. It is attached as **Exhibit C** hereto. The USGS report contains significant new information confirming the location and recency of activity of the main Hollywood Fault, which projects into the HC Site along Argyle Avenue just south of Carlos Avenue. The USGS-confirmed Hollywood Fault location is projected in this report (**Figure 3**) onto the East Site cross-section M-M' near CPTs 27 and 29 where CGS has analyzed/concluded Holocene (and late Pleistocene) faulting exists. This is approximately 35- to 40-feet south of CPT C-20 where CGS and GDC agreed on a fault location (black dots) and approximately 25-feet north of the CGS FER-253 Supplement 1 location of the southern fault trace (**Figure 2**). This southern main Hollywood Fault passes within 50 feet of the East Senior Building, through the center of the 46-story East Building, through the East Site Plaza Ground Floor, and through the south edge of the West Site Plaza Ground Floor.

This most recent USGS data suggests that at least four faults enter the Project Site from the east at Argyle Street (USGS, 2020, Figures 4 and 22 through 25) with the southern USGS fault coincident with the southern fault in the CGS FER-253 Supplement No 1 (their Figure 7). The other three USGS faults at stations (STA) 117, 151, and 191 (**Figure 3**) with an expected similar orientation to the southern fault would pass through the East Senior Building and the north edge of the 46-story East Building, within 10- to 20-feet of the 35-story West Building, through the West Site Plaza Ground Floor, through the East Site Plaza Ground Floor, and through or within 50-feet of the West Building Second Floor Amenity Deck and the West Senior Building.

Question 3: What is the Activity Level (Holocene or pre-Holocene) of the Faults?

As noted above, GDC (2015 and 2019) consistently claims there is no active faulting beneath the Project Site or extending toward the Project Site. These claims are based on GDC's estimating the ages of soils and alluvial layering in trenches and CPT cross-sections. However, the CGS hand-drawn analysis/conclusions on cross-sections M-M', N-N', P-P', and O-O' that were the subject of the May 17, 2015 GDC response to the City showed faulting much higher (younger) in the alluvial layering than shown by GDC (**Figure 4**). These higher layers appear to be Holocene in age, further showing the faults are active. There was a reliance by GDC (2015, Appendix G-1) on non-quantitative, visual age estimates based on factors such a soil coloration for the

alluvial layers exposed in the East and West trenches. The DEIR and GDC age estimates (DEIR, 2020; page IV.D-12) use relative soil-profile development, variously called soil stratigraphy, soil profile horizon, and a soil development index involving visual alluvial layer descriptions.

Regarding the extrapolation of alluvial layering continuity we considered: 1) GDC logging of the 2014-2015 East and West fault trenches paralleling Argyle Avenue from near Yucca Street to Carlos Avenue and 2) bore hole and CPT logging and stratigraphic correlations by GDC along north-south cross-sections M-M', N-N', P-P', and O-O' shown on the GDC 2015 Figure 8. The GDC logging of the East and West fault trenches was conducted by GDC personnel and subcontractors. Significantly, CGS personnel were only allowed very limited access to the trenches (CGS, 2014; FER-253 Supplement, Appendix B page 35) to observe details and look for possible young faults. Subsequent to the GDC interpretations, the CGS documented their fault conclusions with hand-drawn faults on cross-sections M-M', N-N', P-P', and O-O' that were a subject of the May 17, 2015 GDC response to the City discussed above. These hand-drawn CGS conclusions show not only more numerous faults than GDC recognized, but also showed fault offsets in younger deposits, i.e., "active" faulting, where the GDC interpretations did not (GDC, 2015, PDF pages 468 through 473; one example shown on **Figure 4**).

The CGS conclusions, as part of the State's Alquist-Priolo Earthquake Fault Zone (APEFZ) map process, are stated in the 2014 FER-253 Supplement No. 1 on page 26 as follows, with the mentioned "transect" being cross-section M-M':

"The most prominent horizon in this transect, the base of the Argyle Channel, has several anomalous south-side-up steps that may be related to faulting, and several less-continuous units lower in the section appear to support corresponding disruptions. Some of the latter may correspond to the faults observed near the southern GDC Site 2 property line in the eastern trench for that site. However, the main zones of disruption, extending highest in the section, may lie between CPTs C-21 to C-22 and C-26 to C-29. The eastern trench at GDC Site 2 (and extending south into GDC Site 1) did not extend far enough south to fully explore these possible faults and their potential connection to the scarp at Carlos Avenue. Data from a boring log transect on GDC Site 1, that might cross the fault, have not been released."

The "main zones of disruption, extending highest in the section, may lie between CPTs C-21 to C-22 and C-26 to C-29" (CGS FER-253, page 26); these zones correspond to the location of the main Hollywood Fault identified by the USGS (2020; **Exhibit C**, Figures 22 through 25) guided-wave seismic study along Argyle Avenue (Profile HW2) very close to CPTs C-22 to C-24 (**Figures 4 and 5**). This USGS 2020 fault location connects to another location of the Hollywood Fault approximately 350 meters to the east at their other seismic profile line (Profile HW1; USGS Figures 7 through 14). The USGS comments *(emphasis added)* on the Hollywood Fault effects on shallow deposits and therefore the faults' recency of movement are as follows (in quotes):

"An abrupt change in shallow velocities (~400 m/s) is observed at Carlos Avenue, with higher velocities to the north at shallow depths and progressively thicker lower velocity materials southward

toward Hollywood Boulevard. *The abrupt change in shallow V_P at Carlos Avenue is similar to the change in V_P seen along Profile HW1 at the apparent Hollywood Fault (fig. 7).*"

"Thus, *both guided waves and V_P are suggestive of near-surface faulting slightly south (10–25 m) of the center of Carlos Avenue* and about 20 to 35 m south of the center of Yucca Street." (At STA 106 on **Figure 3.**)

"From the south end of Profile HW2 (at Hollywood Boulevard) to approximately Carlos Avenue, *a 7- to 10-m-thick zone of low-V_S (<300 m/s) materials is present in the near surface; this layer pinches out at Carlos Avenue* in a manner similar to that seen in the tomographic V_P model (fig. 7). Between that 7- to 10-m-thick layer and the base of the model, V_S is high relative to the north end of Profile HW2."

"*All of these models show prominent changes in shallow-depth structure near Carlos Avenue* and slightly south of Yucca Street *that are consistent with shallow faulting in those locations.*"

The reference to "pinching out" in the third comment above indicates the extent of the shallow alluvial layer ended over a rather short distance, likely due to shallow Holocene faulting. Comparing **Figure 4C** with the East Trench East Wall trench log (GDC, 2015, Plate 4a), the thickness of the Argyle sand (Qs = yellowish layer, but the symbols are not readable on the GDC PDF file from the DEIR circulated to the public) is about 15-feet, nearly identical to the dark blue plus the light blue (roughly 2.5 Vp/Vs ratio) alluvial layering in **Figure 4C** at about distance STA 115 m (meters). USGS (2020) shows a fault at station 117 m (**Figure 3**). The Qs begins to rapidly thicken at Carlos Avenue indicating uplift on the north (right) side of the Hollywood Fault cutting through/offsetting the Holocene alluvial layer. All of this indicates active faulting through the HC Site.

Similarly showing that the fault is active, located approximately 675-feet east of the USGS guided-wave survey Profile HW1 is the Hollywood Courthouse located at 5925 Hollywood Boulevard (Ninyo & Moore, 2015). The 2015 Ninyo & Moore study (formally received by the CGS as an APEFZ investigation in June 2015) found active faulting (offset Holocene alluvial layers) through the northern one-half of the two-story court building and the south side of the one-story underground parking structure. We understand that the improvements planned for this federal courthouse have been cancelled due to the presence of the active faults. These are active faults within the Hollywood Fault zone that directly align with the USGS (2020) locations of the Hollywood Fault (e.g., USGS Figures 13 and 14) confirming the linkage of active faults east of the HC Site continuously to the HC Project Site.

To the west of the HC Project Site two studies again demonstrate Holocene faulting on the Hollywood Fault, the first in line with the southern trace only 0.7- to 1.3-miles west of the HC Site. From Dolan et al. (2001) it is stated (*emphasis added*):

"The *most recent faulting* at Camino Palmero *occurred after deposition of ~9 ka sediments and prior to deposition of sediments dated as ~6 ka* (Dolan et al., 1997; 2000b). However, *a pronounced ground-water barrier* at Highland Ave, between La Brea Avenue and Cahuenga

Boulevard, *suggests that steeply north-dipping faults extend upward into late Holocene deposits* there (Lindvall et al., 2001)."

The USGS 2020 investigation (their Figure 26) also performed seismic studies in the Santa Monica Fault segment west of HC and found (*emphasis added*):

"The seismic sources for the BHGW1 seismic survey were located about 500 and 647 m southwest of the southernmost and northernmost ends of Profile BH1, respectively (fig. 27). *We chose this site (SP1)* to generate seismic sources *because it was the location of a previous coring and CPT transect, in which an active trace of the Santa Monica Fault was identified.*"

"In addition, the *BHGW2 data also are consistent with the presence of as many as three other fault traces along Lasky Drive*. Importantly, all five of these high-PGV zones can be inferred on both the BHGW1 and BHGW2 data (figs. 28, 30). *Thus, we suggest that distributed shallow-depth faulting likely is present at several locations along Lasky Drive."*

In 2013 the U. S. Geological Survey, the California Geological Survey, and the Southern California Earthquake Center published the *Uniform California Earthquake Rupture Forecast – Version 3* (referred to as UCERF3, 2013; https://pubs.usgs.gov/of/2013/1165/) with the purpose to examine the faults in California and develop a mathematically based forecast as to the frequency and magnitude of earthquake ruptures occurring on these faults. As noted in the publication, all the findings and conclusions of this study were independently reviewed by scientists and engineers from independent institutions. UCERF3 indicates that the Hollywood Fault is repeatedly active between 4,000 and 11,000 years and produced rupture earthquake magnitudes between 5.0 and about 7.0 during this portion of the Holocene. Also, the faults to the east and west of the Hollywood Fault (the Raymond Fault to the east, the Santa Monica Fault and the Malibu Coastal Fault to the west) show a likely earthquake fault participation (all four faults being the source of at least a magnitude 7.0 earthquake) about every 4,000 years. Therefore, the UCERF3 study shows that the Hollywood Fault is "active" with the highest large magnitude earthquake recurrence rate in the approximately 4,000-year cycle, along with other faults that make up this larger fault system. This larger continuous system is approximately 125 miles in length, and all of it is Holocene "active".

CONCLUSIONS

Significant evidence is presented by the California Geological Survey (CGS), the United States Geological Survey (USGS), and the reports of Group Delta Consultants, Inc. (GDC) to demonstrate conclusively that:

1) There is at least one continuous fault extending from Argyle Street on the East Site to within a few hundred feet from Ivar Street on the West Site (DEIR, Appendix G-1 [GDC, 2015], Figure 8; CGS, 2014, FER-253 Supplement Figure 7). This is agreed upon by GDC and CGS (GDC, Appendix G-1, PDF page 464 Conclusion and PDF page 466, Plate 1, black dots [**Figure 1**]).

2) The fault in item (1) above is nearly parallel to, but separate from, the southern fault slightly re-located by CGS (2014, FER-253 Supplement No. 1, Figure 7 and pages 14, 16, 21, 26, and 28; **Figure 2**) for the FER Supplement No. 1. More recent USGS (2020) data suggests that at least four other faults enter the Project Site from the east at Argyle Avenue (USGS, 2020, Figures 4 and 22 through 25: **Figure 3**) with the southernmost fault coincident with the southern fault in the FER-253 Supplement No. 1. All of these projected faults (**Figure 3**) pass through or very near the proposed 35- and 46-story skyscrapers and/or the senior buildings.
3) The CGS hand-drawn analysis/conclusions on cross-sections M-M', N-N', P-P', and O-O' that were a subject of the May 17, 2015 GDC response to the City show faulting much higher in the alluvial layering (therefore younger) than shown by GDC (**Figure 4**). These higher layers appear to be Holocene in age, further showing the faults are active. Due to GDC's lack of quantitative age dates for the key alluvial layers (e.g., Qm) exposed in the East and West trenches, the DEIR and GDC (2015) age estimates are dependent on dating by soil stratigraphy.
4) Shallow depth faulting in the area of an active Hollywood Fault trace (**Figure 5**) indicates the Santa Monica Fault west of the HC Site is Holocene active (USGS, 2020), the Hollywood Fault west of the HC Site is Holocene active (Dolan et al., 2001), and the Hollywood Fault east of the HC Site is Holocene active (Ninyo & Moore, 2015 and USGS 2020). The UCERF3 (USGS and CGS, 2013) demonstrates that the Hollywood fault is part of an approximately 125-miles long active fault system. These studies unequivocally demonstrate that the Hollywood Fault within the HC Site is Holocene active.

CLOSURE

This report has been prepared for the sole use and benefit of our client. Any errors or omissions noted by any party reviewing this report, and/or any other engineering geology/fault conditions aspect of the project, should be reported to Wilson Geosciences Inc. in a timely fashion. No subsurface investigation was authorized or performed by Wilson Geosciences Inc., and conclusions, recommendations, opinions, and other information contained in this report are based upon the evaluation of investigations, analyses, and reports prepared by others within/beneath/near where the project improvements would ultimately be made.

The analysis, results, and conclusions were prepared in general compliance with normal industry practice in the City and County of Los Angeles and meet the standard of care of our profession at this time. Final decisions on matters presented are the responsibility of the client and/or the governing agencies. Wilson Geosciences Inc. and its employees make no warranties either expressed or implied in any respect as to the engineering geology/fault conditions at the site. The Client should consider any transferring of information or other-directed use by the Client as "advice by the Client".

Thank you for the opportunity to participate in this process and to offer the above comments.

Respectfully Submitted,
Wilson Geosciences Inc.

Kenneth Wilson, Principal Geologist
Professional Geologist No. 3175
Certified Engineering Geologist No. 928

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Environmental Sciences Associates, Inc. (ESA), 2020, DEIR, Appendix G-2 – 2019 Surface Fault Rupture Hazard Evaluation Report.

Environmental Sciences Associates, Inc. (ESA), 2020, DEIR, Appendix G-3 – 2019 Geotechnical Investigation.

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Ninyo & Moore, 2015, Supplemental Fault rupture hazard evaluation, Hollywood Courthouse, Los Angeles, California, Project No. 402132007, June 15, 2015.

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Figure 1 – East and West Project Sites Showing Past Group Delta Consultants, Inc (GDC) Exploration Locations and Cross-sections

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Figure 3 – This Report's Westward Projection of May 2020 USGS Faults from Argyle Avenue (USGS Profile HW2▶) Westward to Near Ivar Avenue Showing GDC 2019 Fault F10 East of Ivar Avenue on Figure 9.1 (Note Inset 3a)

Figure 4 – California Geological Survey (CGS) Fault Location Conclusions Showing Younger Faulting After Re-examination of Group Delta Consultants, Inc. Cone Penetration Test (CPT) Interpretations on Cross-section M-M'

Figure 5 – USGS Guided-Wave Seismic Survey Figures 13 and 14 (Profile HW1) Compared to Figure 24 (Profile HW2); Hollywood Fault Location at Carlos Avenue and Argyle Avenue (Figure 2) and Disruption of Shallow Alluvial Layers

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Exhibit A – Wilson Geosciences Inc. Resume of Undersigned

Exhibit B – Figures

Exhibit C – USGS Open File Report 2020-1049, United States Geological Survey (USGS; Catchings et al., 2020)

Exhibit D - Ninyo and Moore, 2015, Supplemental Fault rupture hazard evaluation, Hollywood Courthouse, Los Angeles, California, Project No. 402132007, June 15, 2015.

EXHIBIT A

Wilson's Resume

KENNETH WILSON

Principal Engineering Geologist

EDUCATION

University of California at Riverside, B.S. Geological Sciences, 1967
University of California at Riverside, M.S. Geological Sciences, 1972

PROFESSIONAL REGISTRATIONS

Professional Geologist, California, #3175 [Issued 1-08-1974; Expires 2-28-2021]
Certified Engineering Geologist, California, #928 [Issued 1-08-1974; Expires 2-28-2021]

PROFESSIONAL SUMMARY

Kenneth Wilson is responsible for management, technical supervision and performance of engineering geology, geotechnical, environmental impact, and environmental geology projects, and is a Professional Geologist (#3175) and Certified Engineering Geologist (#928) in California. He performs and supervises environmental assessments for commercial, industrial and government projects covering the disciplines of hydrogeology, engineering geology, geology, hydrology, seismicity, tectonics, faulting, mineral resources, and waste management. Geotechnical studies include fault evaluations, ground failure assessments, slope stability and foundation materials characterization, liquefaction potential, flooding hazards and site selection. The emphasis of his work is on defining geologic and geotechnical conditions, and hazards, which may affect the feasibility and design of any type of development project. Mr. Wilson has over 30 years of technical performance and project experience in critical facilities studies, radioactive/mixed/hazardous waste management, energy plant site licensing, impacts to surface and groundwater resources, waste disposal site development, dams and reservoirs and numerous other engineered structures. Specialized experience is in engineering geology in support of geotechnical studies, site selection/evaluation, seismic safety, integration of multidisciplinary technical teams, project management, and EIRs, EAs, and EISs.

PROFESSIONAL EXPERIENCE

Wilson Geosciences, Engineering and Environmental Geology [1989-Present]: Principal Engineering Geologist

Responsible for all management, technical and marketing activities for engineering geology, environmental impact, and environmental geology projects. Performs and supervises environmental assessments for commercial, industrial and government projects covering the disciplines of hydrogeology, engineering geology, geology, hydrology, seismicity, tectonics, faulting, mineral resources, and waste management. Geotechnical studies include fault evaluations, ground failure assessments, slope stability and foundation materials characterization, liquefaction potential, flooding hazards and site selection

The Earth Technology Corporation [1974-1989]: Corporate Vice President [1987-1989]; Vice President; Director, Program Management [1985-1987]; and Vice President, Associate and Senior Manager [1974-1988]

Vice President, Associate and Senior Manager: Mr. Wilson had numerous challenging technical and management responsibilities and assignments during the period 1974-1988. There was a wide range of projects for which he had a technical role, either performance, supervisory, or management in scope. A substantial portion of the time he was Program Manager for the Missile-X (MX) ICBM, Siting and Characterization Studies in the Western and Midwestern United States: for United States Air Force, Ballistic Missile Office, and the Southern Region Geologic Project Manager (SRGPM) in Mississippi, Louisiana, Texas, Georgia, South Carolina, Virginia, Maryland for Office of Nuclear Waste Isolation (ONWI) and Office of Crystalline Repository Development (OCRD). These projects were national in scope and involved most geologic, geotechnical, geophysical, environmental, and hydrologic disciplines

Converse Consultants (formerly Converse, Davis and Associates) [1970-1974]: Staff and Project Geologist

Staff and Project Geologist: Conducted and supervised investigations in southern, central, and northern California, southern Nevada, and eastern Washington. Numerous earthquake and fault risk studies were performed for earth dams and reservoirs, high-and low-rise buildings, hospitals and schools, proposed nuclear power plant sites, water storage tanks, and large-diameter pipelines. Landslide and other slope failure studies were performed in rock and soil terrains. Offshore studies planned and conducted include coastal geophysical (seismic reflection, side scan sonar, fathometer), sampling and scuba investigations near Monterey and Dana Point, California.

PROFESSIONAL ORGANIZATIONS

Member Association of Engineering Geologists, National and Southern California Sections

REPRESENTATIVE EXPERIENCE ON CEQA/NEPA PROJECTS CONSIDERING THE GEOLOGY AND SOILS TECHNICAL ISSUE AREA: SUMMARIES OF FOUR RELEVANT PROJECTS

Fault Rupture Study Area Report for the Canoga Transportation Corridor Lassen Street/Railroad Overcrossing, Chatsworth, California, for Diaz-Yourman & Associates (2009): The Canoga Transportation Corridor Project Draft EIR identified the Fault Rupture Study Areas, an area where fault rupture potential exists, within the project area, but did not identify the underlying basic source data for the fault locations within the FRSAs. Wilson Geosciences Inc. prepared a study to identify the potential for fault rupture through the grade separation area (bridge site) within the FRSA. The study determined if there was evidence for a fault or faults within the bridge site using (a) geologic and topographic map analysis, (b) analysis of information from multiple geotechnical borings, and (c) geophysical data (seismic refraction and electrical resistivity) collected within and near the proposed bridge location. Evidence for Holocene warping of geologic features is also considered. It was determined that no evidence existed within the grade separation area for active folds or faults.

DEIR/IS Review and Fault Activity Investigation at La Loma Bridge, Pasadena, Los Angeles County, California, Diaz-Yourman & Associates (2004-2008): Wilson Geosciences Inc. (WGI) previously investigated the La Loma Bridge with Hushmand Associates, Inc. (HAI). Geologic, geotechnical, faulting, and seismic conditions at the La Loma Bridge were investigated by WGI in 2004 and in 2007-2008 with HAI. The 2004 investigations were in support of an EIR/EIS related to the bridge rehabilitation and to early design considerations. Investigations in 2007-2008 included field studies to locate the active Eagle Rock fault and to assess its ground rupture potential. Phase 1 consisted of the following tasks: Task 1 – Review of Existing Data and Geologic Maps; Task 2 – Review Seismic Refraction Survey and Results; Task 3 – Review DYA's Boring Logs; Task 4 – Test Pits; Task 5 – Phase 1 Geologic Report. Phase 2 consisted of: Task 1 - Geologic Studies; Task 2 -Seismic Fault Rupture Analysis; Task 3 – Probabilistic Seismic Hazard Assessment (Ground Motions and Fault Rupture Displacements); and Task 4 – Report and Appendices.

WGI performed an engineering geology assessment to determine the location and probable fault displacement characteristics of the Eagle Rock fault previously mapped as passing through the bridge site. Geologic mapping, detailed cut exposure logging, seismic refraction geophysics, and hollow-stem auger, rotary core, and sonic core drilling techniques were used to obtain field data. An engineering geology and fault analysis was performed, including a probabilistic fault displacement hazard assessment. A report was prepared describing the scope, investigation, and analyses completed.

Geologic and Fault Hazard Evaluation for Caltrans Modifications to Interstate 710, Long Beach, Los Angeles County, California, Diaz-Yourman & Associates (2013): WGI performed the work for this project, which resulted in a series of alignment geologic maps and text sections for the DYA preliminary design report using available data and project specific subsurface investigations. Caltrans plans a series of modifications to the I-710 freeway infrastructure from the coast at Ocean Boulevard north to Interstate 5. We evaluated geologic and fault conditions and hazards for the Southern and Central segments that pass through Long Beach. The alignment is affected by the active Newport-Inglewood fault zone (NIFZ), by underlying non-engineered artificial fill, natural low-density alluvial deposits, shallow groundwater, liquefiable soils, and settlement/expansive soils. Estimates were made of the potential movements on the NIFZ and plans include potentially performing field studies to locate the faults crossing of the alignment.

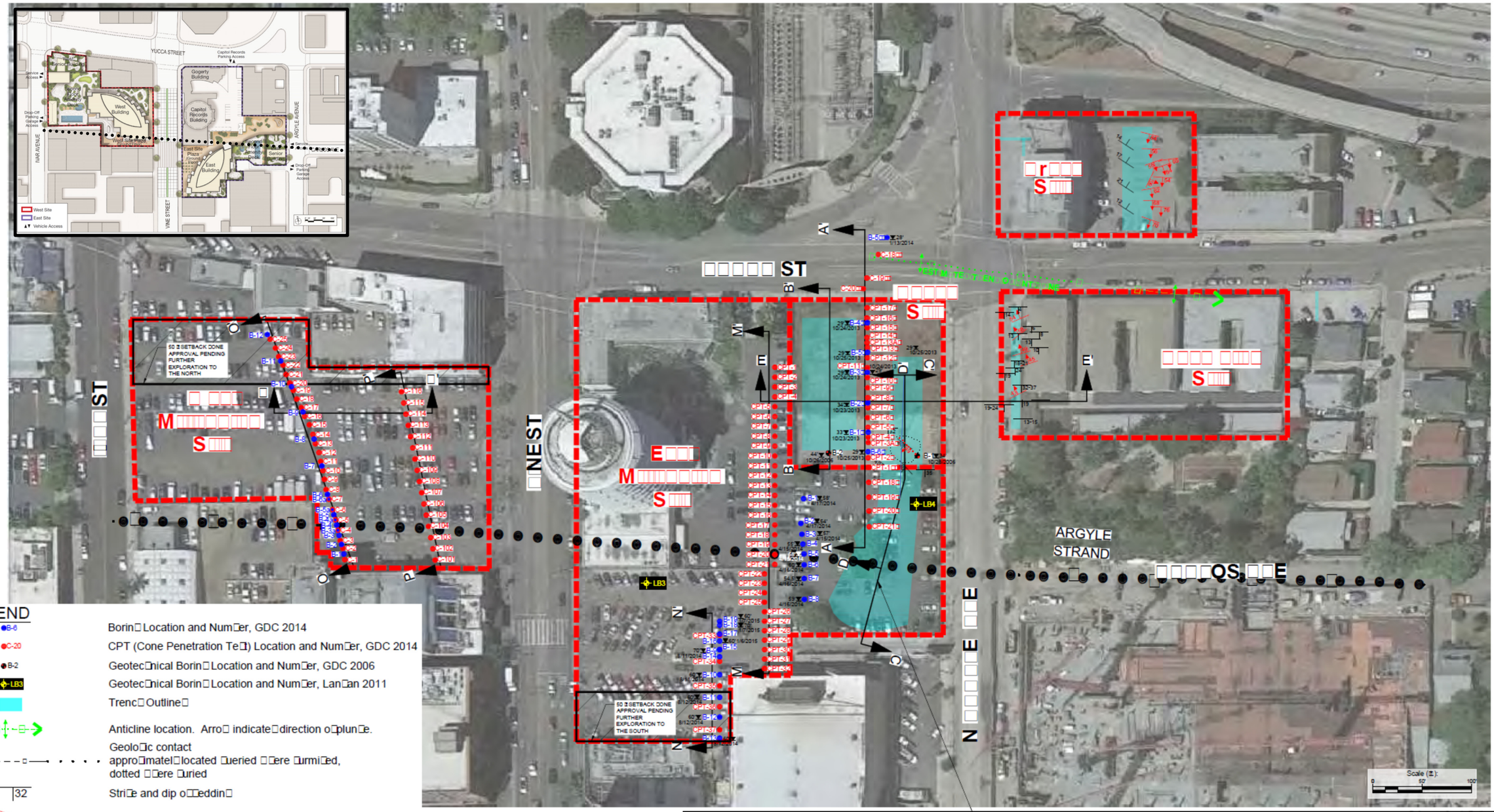
Fault Rupture Study, Lassen Street Bridge, Metropolitan Transit Authority (MTA) Orange Line, Canoga Transportation Corridor Project, Chatsworth, Los Angeles County, California, Diaz-Yourman & Associates (2009): The Canoga Transportation Corridor Project Draft EIR Section 4.10 Geology, Soils, and Seismicity identified the Fault Rupture Study Areas (FRSA) depicted in the 1996 Safety Element of the Los Angeles City General Plan as an area where fault rupture potential exists. The EIR identified one specific paper (Baldwin et al, 1998) as the data source for the earthquake potential information for the two faults that defined the FRSAs (the Northridge Hills and Chatsworth Reservoir faults), but did not identify the underlying basic source data for the fault locations within the FRSAs. The primary purpose of this study is to determine if there is evidence for a fault or faults within the bridge site using (a) geologic and topographic map analysis, (b) analysis of information from multiple geotechnical borings, and (c) geophysical data (seismic refraction and electrical resistivity) collected within and near the proposed bridge location. In addition, the goal was to determine the approximate age of geologic features in order to either "date" the last movement on any detected faults or to estimate an age on the unfaulted geologic materials. Since the Northridge Hills faults is not known to offset near surface geologic units/formations, but rather warps the units, evidence for warping of geologic features was also considered.

COURSES, SEMINARS, AND WORKSHOPS

- Seismic Interpretation for Geologists, by the Oil and Gas Consultants International, Inc., Intensive Short Course, Houston, Texas
- Engineering Geophysics Short Course, Colorado School of Mines, Office of Continuing Education, Golden, Colorado
- Fundamentals of Ground-Water Monitoring Well Design, Construction, and Development, Las Vegas, Nevada
- Field Practices for Collecting Representative Ground-Water Samples, Las Vegas, Nevada
- New Developments in Earthquake Ground Motion Estimation and Implications for Engineering Design Practice, Seminar organized by Applied Technology Council and funded by U.S. Geological Survey, Los Angeles, California
- Seismic Hazards Analysis, Course sponsored by Association of Engineering Geologists, Los Angeles, California

EXHIBIT B

Figures 1 through 5



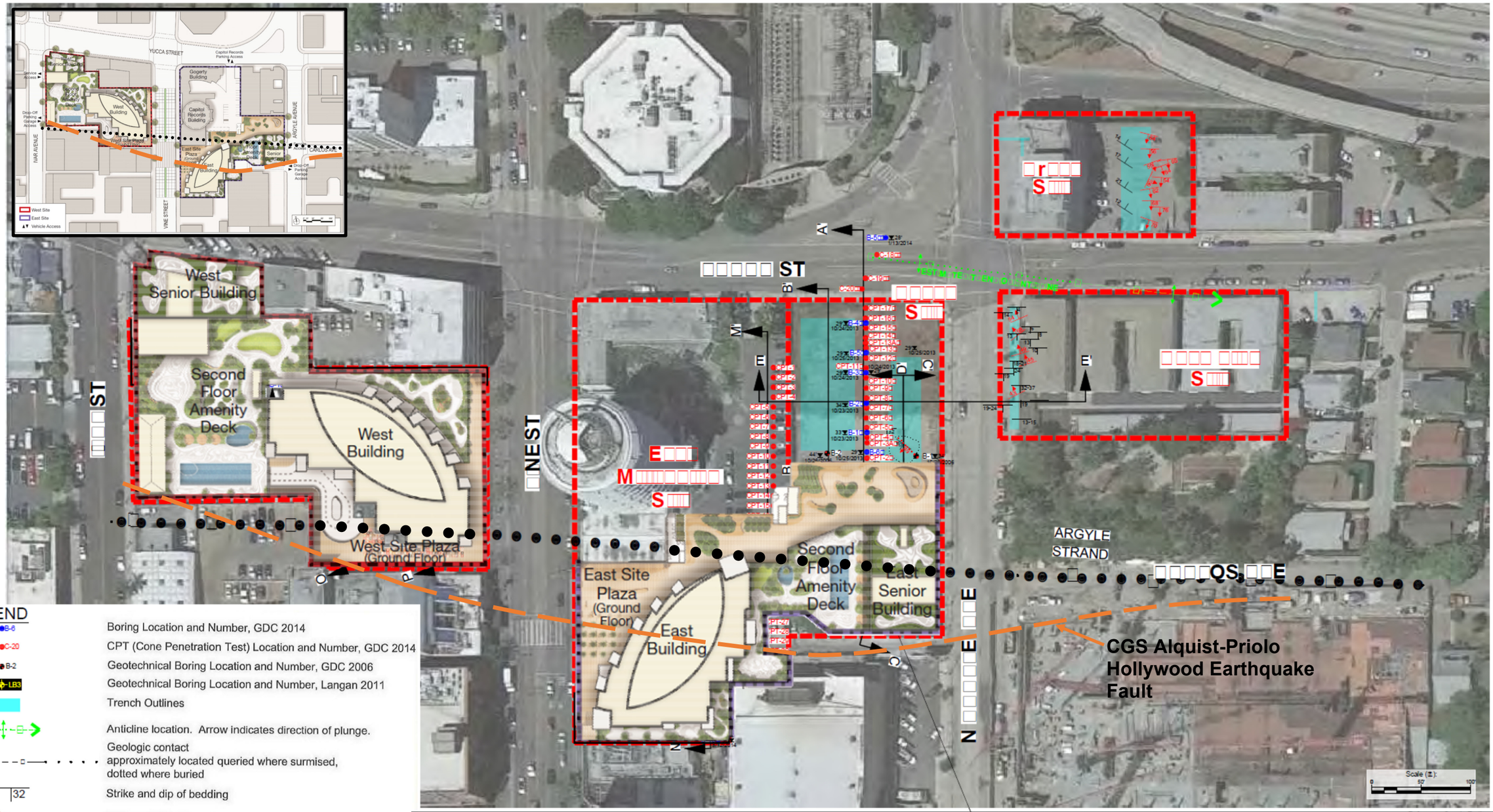
LEGEND

- B-6 — Boring Location and Number, GDC 2014
- C-20 — CPT (Cone Penetration Test) Location and Number, GDC 2014
- B-2 — Geotechnical Boring Location and Number, GDC 2006
- LB3 — Geotechnical Boring Location and Number, Langan 2011
- Trench Outline
- Anticline location. Arrow indicates direction of plunge.
- Geologic contact approximately located queried where buried, dotted where buried
- 32 — Strike and dip of bedding
- Strike and dip of fault (70 / 49)
- Strike and dip of buried fault
- Approximate Location of Inferred Fault
- 45' 1/29/2014 — Ground water level below ground surface encountered and date measured
- A A' — Cross Section
- Property Line

Explanation – This is the GDC 2015 site map (2015; GDC Plate 1) showing borings, CPTs, trenches and the location of the CGS/GDC agreed (May 17, 2015 response letter to City of Los Angeles) upon location of the continuous fault (large black-dotted line) crossing the East and West Sites (see inset upper left for proposed development layout). Refer to this field investigation site map for any text discussion referring to CTPs, borings, trenches, or cross-section.

Figure 1 – East and West Project Sites Showing Past Group Delta Consultants, Inc (GDC) Exploration Locations and Cross-sections

DATE: 8/5/2014	DRAWN BY: KM	GROUP DELTA CONSULTANTS, INC 370 Amapola Ave. Suite 212 Torrance, CA. 90501	BORING, CPT, CROSS SECTION AND TRENCH LOCATION
REVISION: 10/31/2014	APPROVED BY: MR		WEST/EAST MILLENNIUM SITES
REVISION: 2/28/2015	Modified from GDC, 2014a		PROJECT NUMBER: LA1191A SCALE: AS SHOWN PLATE NUMBER: 1



LEGEND

- Boring Location and Number, GDC 2014
- CPT (Cone Penetration Test) Location and Number, GDC 2014
- Geotechnical Boring Location and Number, GDC 2006
- Geotechnical Boring Location and Number, Langan 2011
- Trench Outlines
- Anticline location. Arrow indicates direction of plunge.
- Geologic contact approximately located queried where surmised, dotted where buried
- 32 — Strike and dip of bedding
- 70 / 49 — Strike and dip of fault
- Strike and dip of buried fault
- Approximate Location of Inferred Fault
- 45' 1/29/2014 — Ground water level below ground surface encountered and date measured
- A A' — Cross Section
- Property Line

Explanation – This is the GDC 2015 site map (Plate 1) showing the proposed development with respect to the location of the CGS/GDC agreed upon (May 17, 2015 response letter to City of Los Angeles) location of the continuous fault (large black dots) that passes through the East Senior Building, 15-feet north of the East Building tower, through the south edge of the West Site Plaza Ground Floor, and 30-feet south of the West Building tower. The APEFZ Hollywood Fault (orange) crosses within 50-feet of the East Senior Building, through the center of the East Building, and through the south edge of the West Site Plaza Ground Floor.

Figure 2 – East and West Project Sites Showing the Proposed Development, and the Verified Fault and the CGS Hollywood Fault Crossing the Project Site

DATE: 8/5/2014	DRAWN BY: KM	GROUP DELTA CONSULTANTS, INC 370 Amapola Ave. Suite 212 Torrance, CA. 90501	BORING, CPT, CROSS SECTION AND TRENCH LOCATION
REVISION: 10/31/2014	APPROVED BY: MR		WEST/EAST MILLENNIUM SITES
REVISION: 2/28/2015 Modified from GDC, 2014a			PROJECT NUMBER: LA1191A SCALE: AS SHOWN PLATE NUMBER: 1

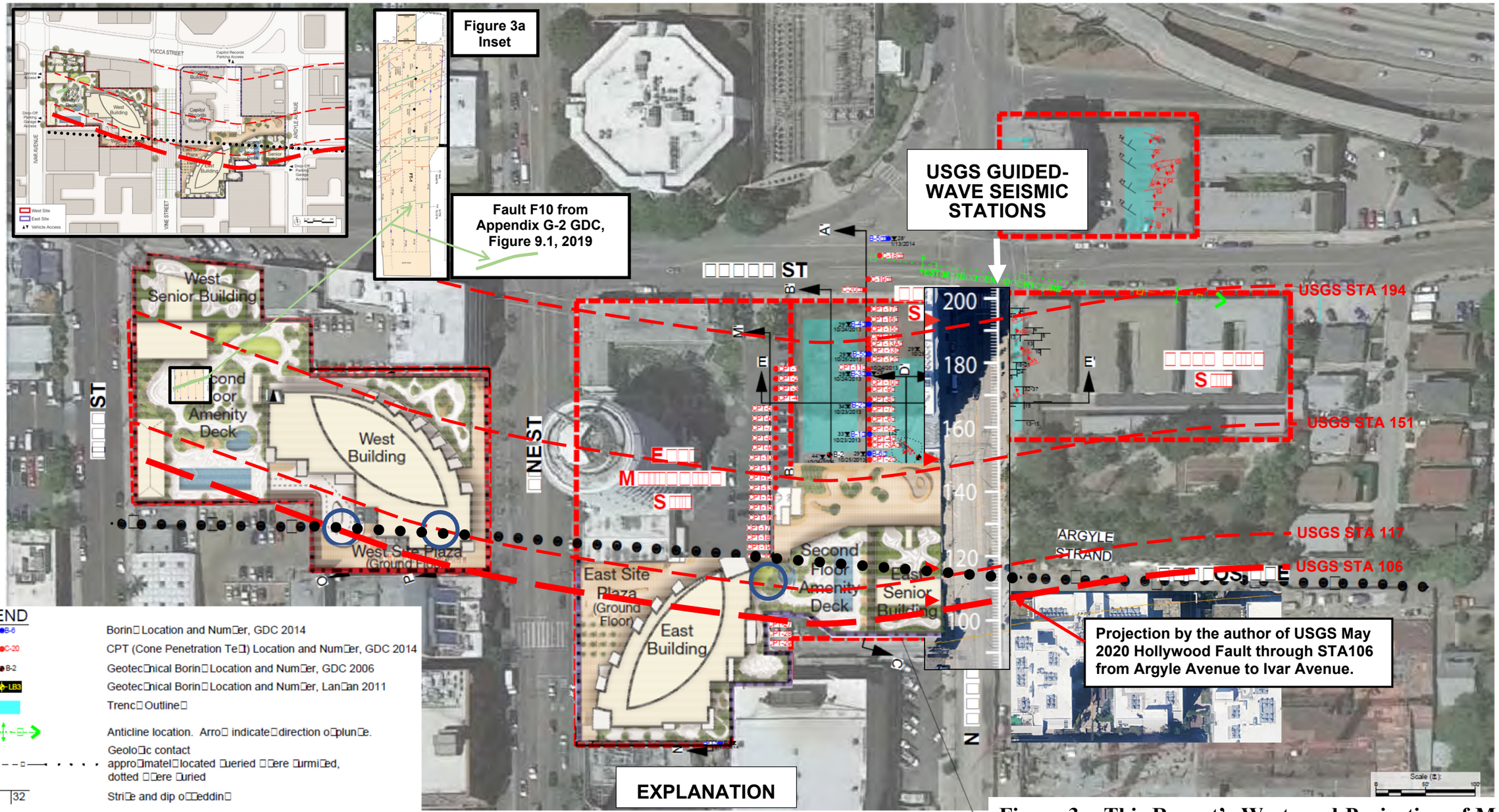


Figure 3 – This Report's Westward Projection of May 2020 USGS Faults from Argyle Avenue (USGS Profile HW2) Westward to Near Ivar Avenue Showing GDC 2019 Fault F10 East of Ivar Avenue on Figure 9.1 (Note Inset 3a)

DATE: 8/5/2014	DRAWN BY: KM	GROUP DELTA CONSULTANTS, INC 370 Amapola Ave. Suite 212 Torrance, CA. 90501	BORING, CPT, CROSS SECTION AND TRENCH LOCATION	PROJECT NUMBER: LA1191A
REVISION: 10/31/2014	APPROVED BY: MR			SCALE: AS SHOWN
REVISION: 2/28/2015	Modified from GDC, 2014a		WEST/EAST MILLENNIUM SITES	PLATE NUMBER: 1

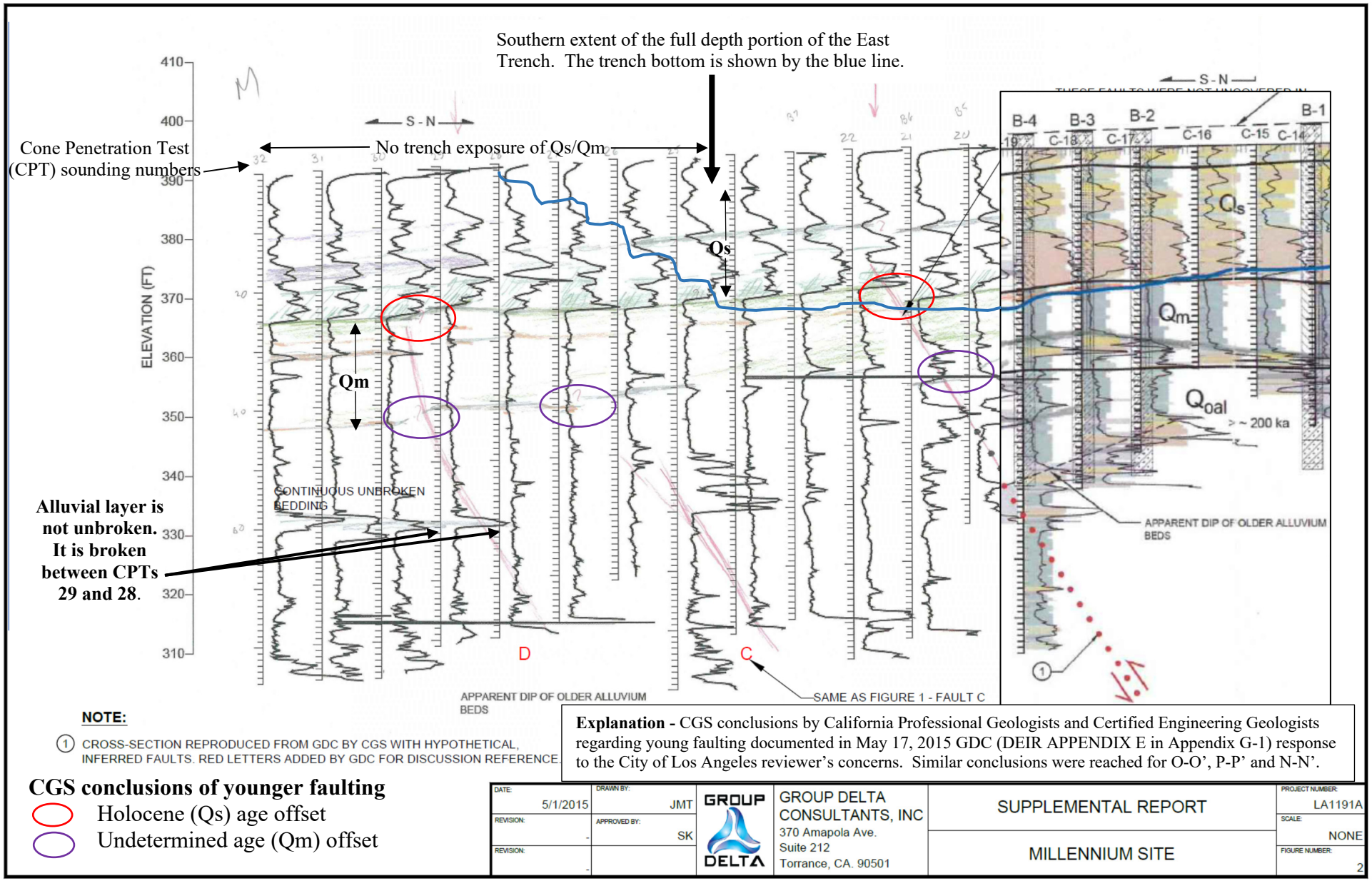
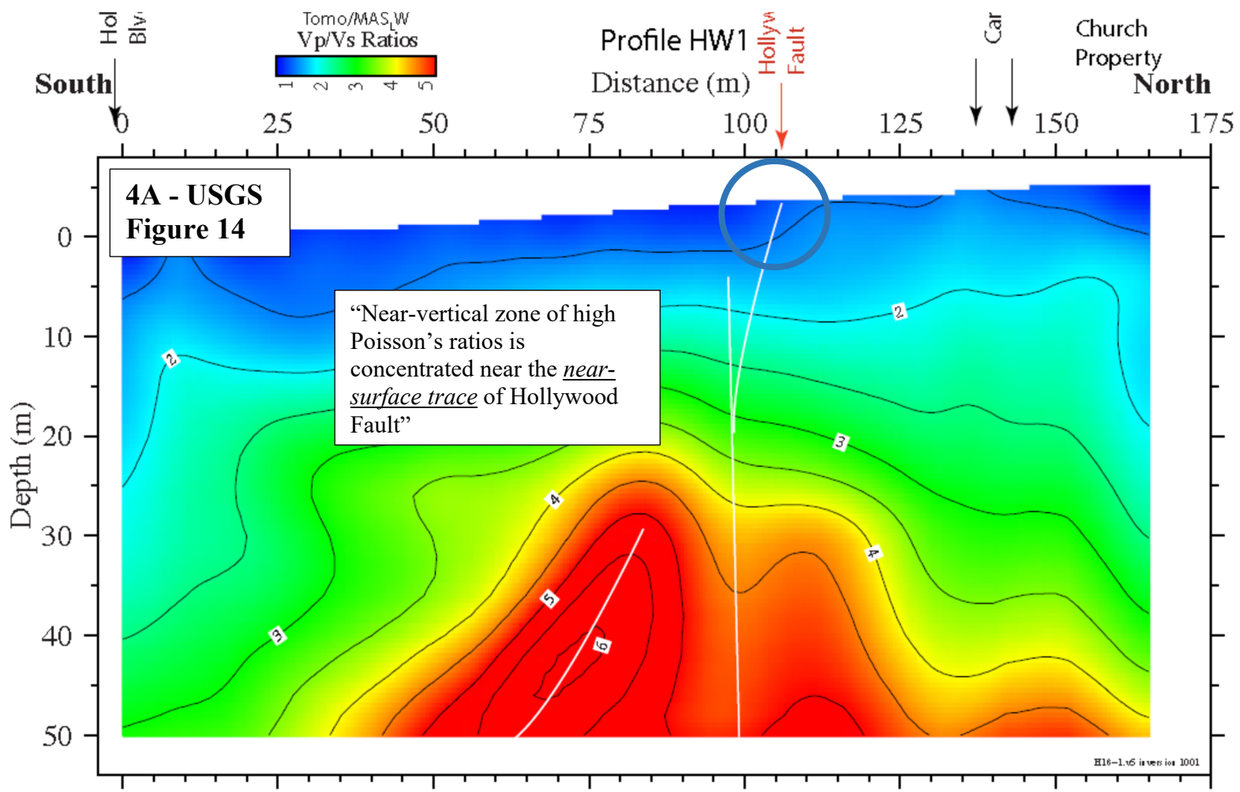
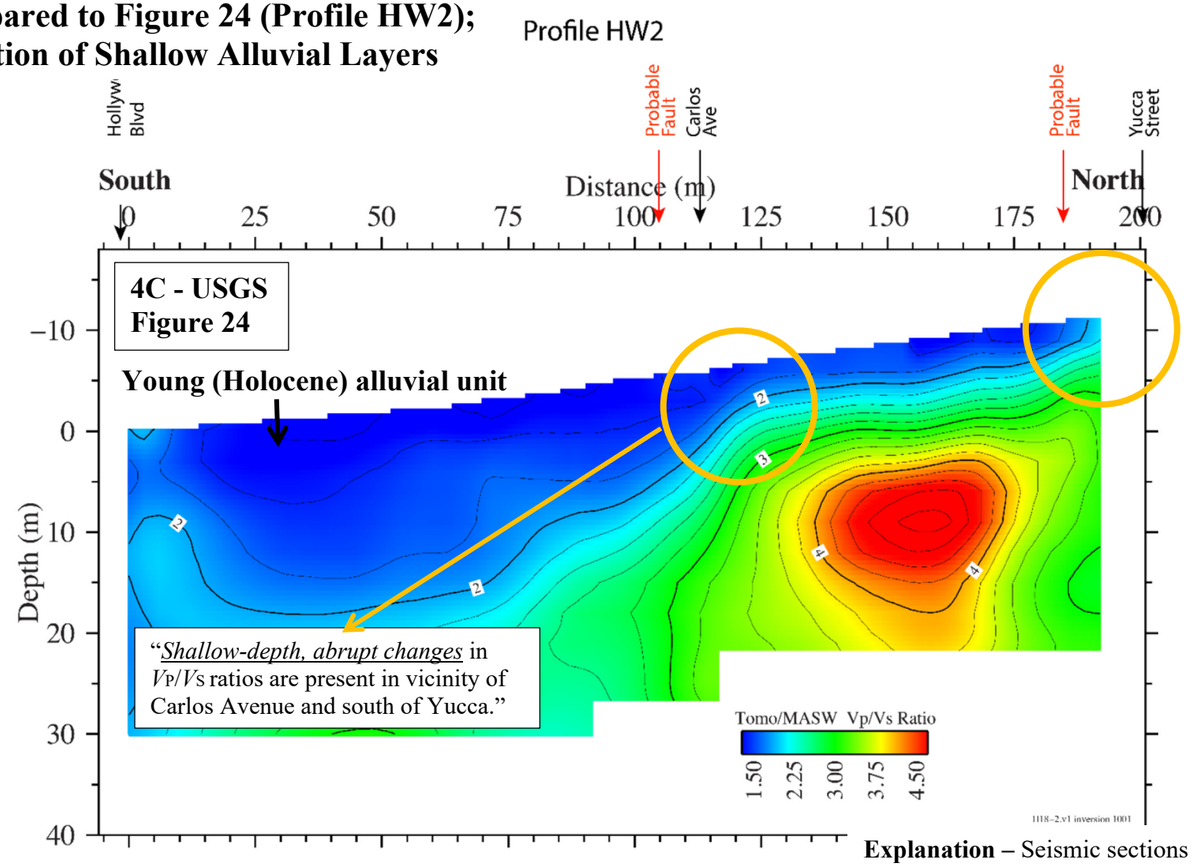
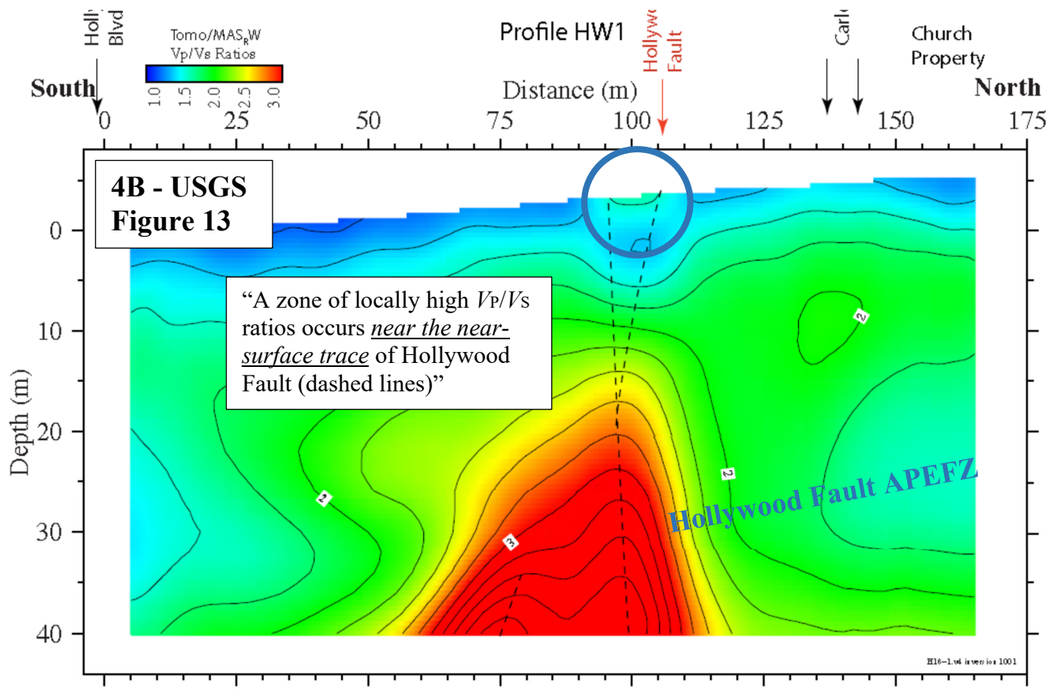


Figure 4 – California Geological Survey (CGS) Fault Location Conclusions Showing Younger Faulting After Re-examination of Group Delta Consultants, Inc. Cone Penetration Test (CPT) Interpretations on Cross-section M-M'

Figure 5 – USGS Guided-Wave Seismic Survey Figures 13 and 14 (Profile HW1) Compared to Figure 24 (Profile HW2); Hollywood Fault Location at Carlos Avenue and Argyle Avenue (Figure 2) and Disruption of Shallow Alluvial Layers







Explanation – Seismic sections 4A and 4B are from Profile HW1 shown on map 4D (USGS, May 2020). Seismic section 4C on map 4D is from Profile HW2 along Argyle adjacent to the Hollywood Center Site. The orange and blue circles on 4D show the intersection points of the HW1 and HW2 Profiles with the Hollywood Fault.

Blue circles on 4A to 4B (USGS, 2020) showing the main active Hollywood Fault within a few feet of the ground surface at HW1 (thin white and thin black lines); USGS quotes in text box, *emphasis* added. The orange circles on 4C for HW2 along Argyle Avenue shows the abrupt change in thickness of the dark blue alluvial formation (Holocene Qs; **Figure 4**) described in the USGS 2020 quote in the text box, *emphasis* added.

EXHIBIT C

USGS Open-File Report 2020-1046 (2020)

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Prepared in cooperation with California Geological Survey

2018 U.S. Geological Survey–California Geological Survey Fault-Imaging Surveys Across the Hollywood and Santa Monica Faults, Los Angeles County, California

By Rufus D. Catchings, Janis Hernandez, Mark R. Goldman, Joanne H. Chan, Robert R. Sickler, Brian Olson, and Coyn J. Criley

Open-File Report 2020–1049

U.S. Department of the Interior
U.S. Geological Survey

U.S. Department of the Interior
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U.S. Geological Survey, Reston, Virginia: 2020

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Suggested citation:
Catchings, R.D., Hernandez, J., Goldman, M.R., Chan, J.H., Sickler, R.R., Olson, B., and Criley, C.J., 2020, 2018 U.S. Geological Survey–California Geological Survey fault-imaging surveys across the Hollywood and Santa Monica Faults, Los Angeles County, California: U.S. Geological Survey Open-File Report 2020–1049, 42 p., https://doi.org/10.3133/ofr20201049.

Associated data for this publication:
Goldman, M.R., Catchings, R.D., Chan, J.H., Sickler, R.R., Criley, C.C., Hernandez, J.L., and Olson, B., 2020, Data release for the 2018 U.S. Geological Survey–California Geological Survey fault-imaging surveys across the Hollywood and Santa Monica Faults, Los Angeles County, California: U.S. Geological Survey data release, https://doi.org/10.5066/P9ENA8D4.

ISSN 2331-1258 (online)

Acknowledgments

Partial funding for this work was provided by the California Geological Survey (CGS). We thank CGS for identifying and securing the investigative fault sites. We thank Deshawn Brown, Michael DeFrisco, Erik Frost, Maxime Mareschal, Gordon Seitz, Brian Swanson, and Christopher Tran of the California Geological Survey for assistance in acquiring the data for this report. We thank the First Presbyterian Church of Hollywood, the City of Los Angeles, and the City of Beverly Hills for access. We thank Yong-Gang Li of the University of Southern California, and Walter Mooney of the U.S. Geological Survey (USGS), for reviewing the manuscript.

We thank the following USGS scientists: Kerri Gefeke, Dan Langermann, Belle Philibosian, and Ali Pickering; we also thank USGS volunteers Joseph Catchings, Shirley Imsand, Richard Philibosian, and Nathan Suits, for assistance in acquiring the data for this report. We thank Shane Detweiler, Mike Diggles, and Taryn Lindquist (all USGS) for editing and formatting and reviewing.

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Conversion Factors

International System of Units to U.S. customary units

Multiply	By	To obtain
	Length	
centimeter (cm)	0.3937	inch (in.)
millimeter (mm)	0.03937	inch (in.)
meter (m)	3.281	foot (ft)
kilometer (km)	0.6214	mile (mi)
	Flow rate	
meter per second (m/s)	3.281	foot per second (ft/s)
	Mass	
kilogram (kg)	2.205	pound avoirdupois (lb)

Abbreviations

1-D	one dimensional
2-D	two dimensional
AGC	automatic gain control
AWD	accelerated weight drop
CGS	California Geological Survey
HGW1	Hollywood guided-wave survey 1
HGW2	Hollywood guided-wave survey 2
HGW3	Hollywood guided-wave survey 3
HRR1	Hollywood refraction-reflection survey 1
HRR2	Hollywood refraction-reflection survey 2
HW1	Hollywood seismic profile 1 (P-wave survey)
HW2	Hollywood seismic profile 2 (S-wave survey)
HW3	Hollywood seismic profile 3 (P-wave survey)
Hz	hertz
MASW	multichannel analysis of surface waves
MAS_LW	MASW for Love waves
MAS_RW	MASW for Rayleigh waves
PGV	peak ground velocity
V_P	P-wave or compressional-wave velocity
V_P/V_S ratio	ratio of P-wave velocity to S-wave velocity
V_S	S-wave or shear-wave velocity
USGS	U.S. Geological Survey
UTC	coordinated universal time

2018 U.S. Geological Survey–California Geological Survey Fault-Imaging Surveys Across the Hollywood and Santa Monica Faults, Los Angeles County, California

By Rufus D. Catchings,[1] Janis Hernandez,[2] Mark R. Goldman,[1] Joanne H. Chan,[1] Robert R. Sickler,[1] Brian Olson,[2] and Coyn J. Criley[1]

Abstract

We acquired multiple types of seismic data across the Hollywood Fault in Hollywood, Calif., and the Santa Monica Fault in Beverly Hills, Calif., in May and June 2018. On the basis of our data, we infer near-surface locations of various traces of these faults.

From two separate profiles across the Hollywood Fault, we evaluated multiple seismic datasets and models, including guided-wave data, tomographic V_P data, tomographic V_S data, V_P/V_S and Poisson's ratio models derived from tomographic V_P and V_S data, Rayleigh-wave–based V_S models, Love-wave–based V_S models, V_P/Vs and Poisson's ratio models (derived from combinations of tomographic-based V_P and surface-wave–based V_S models), P-wave reflection images, and S-wave reflection images. All of these data and models can be used to delineate near-surface faulting, and the data consistently infer near-surface fault traces of the Hollywood Fault in the same locations. Importantly, the combined data indicate more than one near-surface fault trace of the Hollywood Fault. Between North Bronson and North Gower Avenues, evidence exists for a near-surface trace of the Hollywood Fault slightly south of Carlos Avenue. Farther west, along Argyle Avenue, our data contain high levels of cultural noise, but we interpret near-surface faulting slightly south of the intersection of Carlos and Argyle Avenues and between Carlos Avenue and Yucca Street.

For the Santa Monica Fault in Beverly Hills, we acquired guided-wave data only along Lasky Drive between Moreno Drive and South Santa Monica Boulevard, owing to limited access permissions. However, we used two separate source locations to generate the guided-wave data (SP1 and SP2). The data from more distant source location (relative to the recording array, SP1) were noisy, but on the basis of those data, we infer near-surface faulting at several locations along Lasky Drive, with concentrated near-surface faulting slightly south of the intersection of Lasky Drive and Charleville Boulevard. Guided-wave data generated at the closer source location (relative to recording array, SP2) more clearly show evidence for distributed near-surface faulting at several locations along Lasky Drive, with concentrated faulting near the intersection of Lasky Drive and Charleville Boulevard.

Although the seismic surveys across both faults provide strong evidence for the locations of near-surface fault traces, the seismic data provide little or no information about the rupture history of the fault traces.

Introduction

In May and June 2018, the U.S. Geological Survey (USGS) and the California Geological Survey (CGS) jointly conducted a series of seismic investigations in Los Angeles County, Calif., that

[1]U.S. Geological Survey
[2]California Geological Survey

were aimed at locating near-surface traces of the Hollywood Fault in Hollywood, Calif., and the Santa Monica Fault in Beverly Hills, Calif. (fig. 1). For the Hollywood Fault, we acquired four seismic surveys along two transects, from which we evaluated five types of seismic data, as well as multiple data combinations that can be used to evaluate near-surface faulting. We used active sources to generate body waves, surface waves, and guided waves, and from those data, we evaluated (1) P-wave velocities (V_P), S-wave velocities (V_S), and their ratios using tomography, (2) S-wave velocities (V_S) using multichannel analysis of surface waves (MASW) on Rayleigh and Love waves, (3) peak ground velocities (PGV) of guided waves, (4) reflection images, and (5) combinations of those data. For the Santa Monica Fault, we acquired two guided-wave seismic surveys along Laskey Drive, from which we evaluated PGV of guided waves. In this report, we present images, models, and interpretations for the acquired data.

Seismic Methodologies

Faulting produces physical effects in the shallow subsurface that can be observed using multiple seismic-imaging methods. Although various types of seismic data can be affected differently by near-surface faulting, those effects generally occur within the fault zone at the same locations. As a result, using multiple seismic datasets can provide greater confidence in the locations of near-surface faults.

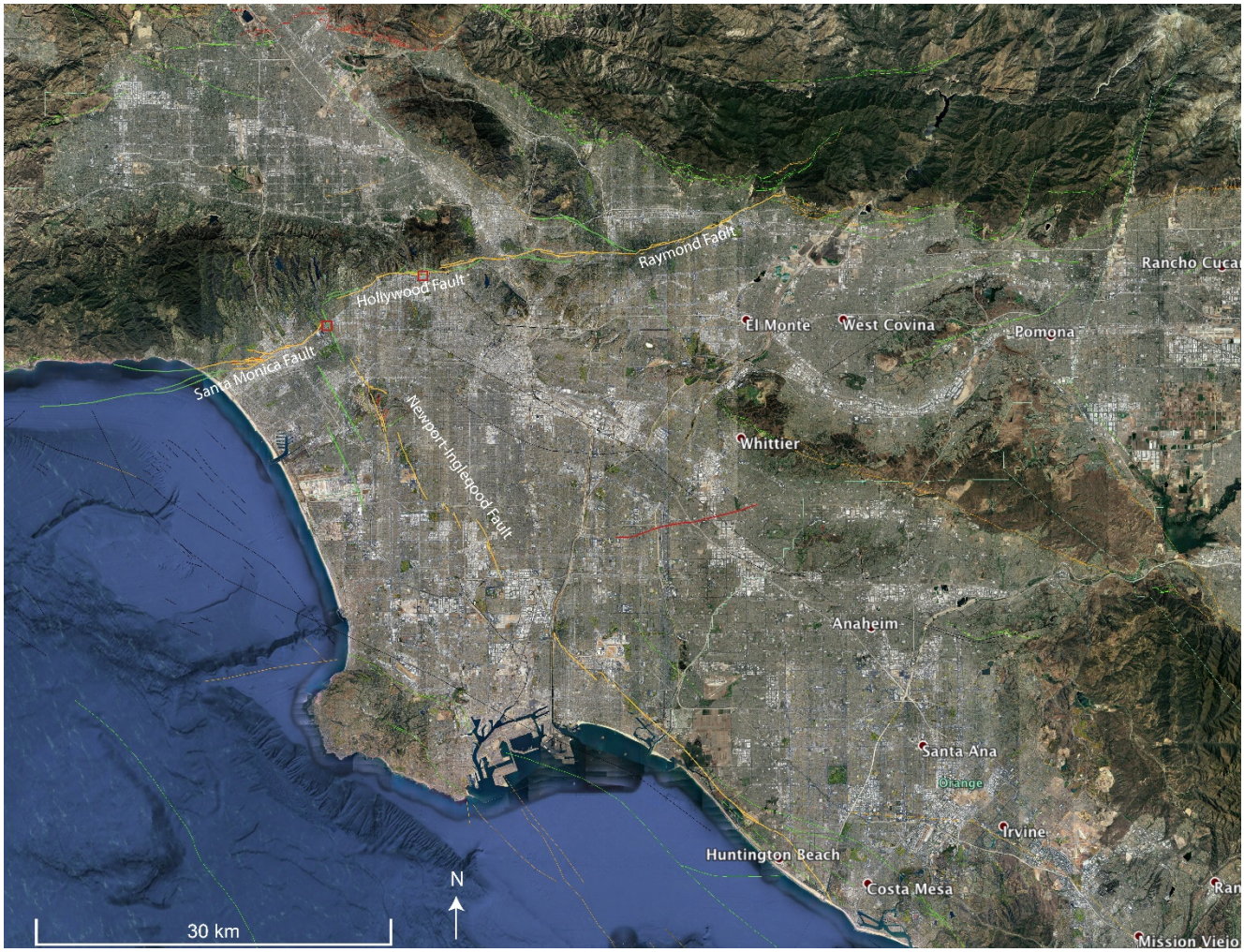

Figure 1. Mosaic of Google Earth images of the greater Los Angeles area, showing locations of the Hollywood Fault, Santa Monica Fault, and other faults. Small red rectangles indicate locations of Hollywood and Beverly Hills seismic profiles. Red lines show locations of historic faulting. Abbreviation: km, kilometer(s).

Here, we briefly describe some of these effects and how they relate to the seismic methods used in this investigation.

Shearing during the faulting process reduces the rigidity of faulted rocks and materials. As a result, both P- and S-wave velocities (V_P and V_S, respectively) decrease within fault zones relative to the surrounding rock mass. Empirical studies using laboratory data (Wang and others, 1978), active-source refraction data (Healy and Peake, 1975; Mooney and Luetgert, 1982; Mooney and Ginzburg, 1986; Jarchow and others, 1994; Catchings and others, 1998, 2002, 2008, 2009, 2014, 2016; Catchings, 1999), seismic-velocity logs (Boness and Zoback, 2004), earthquake-source data (Mayer-Rosa, 1973; Aki and Lee, 1976; Thurber, 1983; Eberhart-Phillips, 1990; Thurber and Atre, 1993; Thurber and others, 1995; Eberhart-Phillips and Michael, 1998), and guided-wave data (Leary and others, 1987; Li and Vidale, 1996; Li and others, 2000, 2007; Korneev and others, 2003; Li and others, 2014; Catchings and others, 2016) show a significant reduction (as much as 50%) in seismic velocities within fault zones.

These reductions in V_P and V_S that are due to faulting typically are seen in velocity models as near-vertical zones of low seismic velocities. However, in the shallow subsurface, low-velocity fault zones can be obscured in V_P models because of the presence of near-surface groundwater, which causes V_P in fault zones to increase, rather than decrease. In the shallow subsurface, V_S, which is strongly affected by the shear modulus, is typically more affected by faulting than V_P, which is strongly affected by the bulk modulus and the presence of groundwater. As a result, the ratios of V_P to V_S can be unusually high in fault zones, and such high ratios typically are highly diagnostic of near-surface faulting (Catchings and others, 2014).

Where present, stratigraphic layers can be vertically offset by near-surface faulting, particularly for reverse and normal faulting. Seismic-refraction tomography is a highly useful method for identifying such vertical offsets, particularly when different rock types are juxtaposed across faults. Seismic-reflection imaging is another particularly useful seismic method for identifying such vertical offsets when subhorizontally layered strata is present in the shallow subsurface. However, small vertical offsets may not be seen in the near-surface at the resolutions of many seismic-reflection surveys, particularly when faulting produces little vertical offset.

Guided waves (see below) can also be highly diagnostic of near-surface faulting when a fault trace can be identified in at least one location along its length. Collectively, these methods have been shown to be highly diagnostic of near-surface faulting.

Guided-Wave Methodology

With respect to seismic-wave propagation, low-velocity fault zones can be considered as wave guides that channel seismic energy. A number of studies have documented the wave-guide effect and the seismic energy that travels along and within the fault zones. This seismic energy is referred to as fault-zone-guided waves or fault-zone-trapped waves (Cormier and Spudich, 1984; Li and Leary, 1990; Li and others, 1990, 1997, 2000; Hough and others, 1994; Huang and others, 1995; Ben-Zion, 1998; Jahnke and others, 2002; Rovelli and others, 2002; Ben-Zion and others, 2003; Malin and others, 2006; Li and others, 2014). Fault-zone-guided waves travel exclusively within low-velocity fault zones, and once the seismic energy enters the fault zone, high-amplitude seismic energy results from coherent multiple reflections at the boundaries between low-velocity fault zones and higher velocity wall rocks (Cormier and Spudich, 1984; Leary and others, 1987; Li and Leary, 1990; Li and Vidale, 1996). Propagation of the seismic waves in fault zones is somewhat similar to optical-fiber light transmission. The amplitudes of fault-zone-guided waves are typically much larger, and the velocities are much lower, than body waves that travel outside of the fault zone (Cormier and Spudich, 1984; Spudich and Olson, 2001; Fohrmann and others, 2004; Ellsworth and Malin, 2011). Numerical studies have shown that high-amplitude guided waves are generated and propagate within fault zones only when the source is located within, or very close to, the fault zone (Li and Leary, 1990; Li and Vidale, 1996; Ben-Zion, 1998; Ingel

and others, 2002) or when the source underlies a fault zone that extends only to shallow depths (Fohrmann and others, 2004). Thus, for most crustal faults, guided waves propagate only along faults that are continuous between the seismic source and the observation point, as a discontinuous fault prevents lateral propagation of guided waves beyond the endpoint of the fault (Li and Vidale, 1996; Jahnke and others, 2002). Thus, the presence, continuity, and connectivity of faults can be inferred from the presence or absence of guided waves along faults (Catchings and others, 2016).

Guided waves have been identified in most studies on the basis of their relatively low-velocity, high-amplitude waveforms that have dispersive wavetrains, which are recorded on a series of seismographs deployed across or along a fault zone. The waveforms can be forward-modeled to estimate physical properties of the fault zone, including geometry, Q (attenuation), velocities, and temporal changes in velocity (Li and others, 2014, 2016). Furthermore, the locations of stations that record the high-amplitude waveforms and long time durations can be used to infer the overall maximum width of a fault zone, but this method is not ideal for locating individual fault traces within the overall fault zone.

In our study, we use peak amplitude (peak ground velocity [PGV]) of fault-zone-guided waves (Catchings and others, 2013, 2016) to more precisely locate individual fault traces within the overall fault zone. Because fault zones can be kilometers in width and can consist of multiple traces, evaluation of PGV is more effective in locating individual traces. For our present study, we identify guided waves as high-amplitude seismic waves that arrive later than the body waves (either V_P or V_S) and are narrowly confined to a set of stations. Guided waves can be measured on either vertical- or horizontal-component sensors (Malin and others, 1996), but in our present study, we use only data from horizontal-component sensors.

Tomography, MASW, and Reflection Methodologies

To develop seismic images, we also used seismic-refraction tomography, multichannel analysis of surface waves (MASW), and seismic-reflection processing techniques in this study. We developed P- and S-wave seismic-refraction tomography models using first-arrival travel times and the modeling code of Hole (1992). The nonlinear travel-time-tomography method by Hole (1992) uses a finite-difference algorithm to solve the eikonal equation in computing first-arrival travel times from the source to the receiver, and the model is updated in iterative steps using backprojection. Because P- and S-wave geophones and their respective shots were colocated approximately every 2 meters (m), we parameterized both our V_P and V_S models using 2-m horizontal (x) and vertical (z) intervals. For the tomographic inversions, we used 1-D starting models developed from shot-gather modeling that assumed similar but differing vertical variations in velocity. All starting models produced similar final velocity models, having velocities that generally differed by less than 5 percent at any given location in the final models. The geometrical setup of the seismic profile allowed us to use reciprocal shot and geophone (receiver) pairs to determine travel times. First arrivals were measured at nearly every geophone (~89) for each shot point (89) along the profile, totaling nearly 7,900 first arrivals for the P waves and for S waves. Although most first arrivals could be measured on most shot gathers, for some less energetic shots, we used reciprocal travel times from the more energetic shots to ensure travel-time consistency.

We developed Rayleigh- and Love-wave V_S models using a version of the MASW method (Park and others, 1999) that was developed by Hayashi and Suzuki (2004) and Hayashi (2008) and is available in the Geometrics 2D SeisImager software package. For MASW analysis, the SeisImager algorithm constructs common midpoint correlations to develop 1-D dispersion curves and 1-D V_S models for each shot point along the seismic profiles, and, by laterally combining those V_S models, a 2-D V_S model can be developed for each seismic profile. Although the MASW method can be applied to Rayleigh- and Love-wave (surface wave) data, the MASW method was originally applied to Rayleigh waves (Xia and others, 1999) and is generally referred to as the MASW method in the scientific literature. However, the

method is sometimes referred to as the MAS_RW method (Yong and other, 2013). The MASW method also has been applied to Love waves and has been referred to as the MALW method (Yuan, 2011; Xia and others, 2012; Catchings and others, 2017) or the MAS_LW method (Yong and others, 2013). In this report, we use the MAS_RW and MAS_LW descriptors to differentiate between the MASW method when applied to Rayleigh and Love waves, respectively.

In seismic-reflection data processing, we followed procedures similar to those outlined by Brouwer and Helbig (1998). Processing steps included geometry installation, independent trace editing, timing corrections, automatic gain control (AGC), band-pass filtering, surgical muting of refractions, surface waves and airwaves, velocity analysis (tomographic and 1-D velocities), elevation static corrections and normal moveout correction (using refraction-tomography velocities), stretch muting, common-depth point stacking, and poststack AGC and band-pass filtering. We attempted to stack both the P- and S-wave reflection data to look for variations in the resolution of the images.

Hollywood Fault Data Acquisition and Profiles

We acquired seismic data along profiles in Hollywood between May 23, 2018, and June 1, 2018. Data were acquired in several stages, with the data being recorded along the following two transects: (1) Profile HW1, which consisted of a 178-m-long, north-south-trending, linear profile (within a parking lot) located north of Hollywood Boulevard and about 80 m east of North Gower Street **(**fig. 2**)**, and (2) Profile HW2, a 370-m-long, north-south-trending, linear profile along North Argyle Avenue, between Hollywood Boulevard and Franklin Avenue (fig. 3).

Hollywood Fault Profile HW1

Profile HW1 originated on the north side of Hollywood Boulevard and ended in the courtyard of the First Presbyterian Church of Hollywood. We conducted several types of seismic investigations along Profile HW1. The first seismic investigation was a guided-wave survey (HGW1), whereby the recording array was perpendicularly offset from the seismic source, which was generated by a 227-kilogram (kg) (500-pound [lb]) accelerated weight drop (AWD). We used 157 individual "shots" at the same physical location (SP1), and the individual "shots" were stacked to form a single shot gather containing fault-zone-guided waves. Generally, the seismic source must be within or near a fault trace to generate guided waves, and so, accordingly, we placed SP1 within a known trace of the Hollywood Fault that had been previously investigated by core-boring and cone-penetration-testing (CPT) transects (Ninyo and Moore, 2015a, b).

The second seismic survey (HRR1) along Profile HW1 used active P-wave seismic sources (227-kg AWD shots and 3.6-kg hammer shots) that were in line with the recording array. Both seismic sources generated seismic energy when an AWD or hammer vertically struck a steel plate on the ground surface. The recording array consisted of 89 vertical-component sensors that were spaced 2 m apart. For the HRR1 seismic survey, we recorded P-wave refraction, P-wave reflection, and Rayleigh-wave data that were evaluated for evidence of faulting. In acquiring the P-wave data, we generated seismic shots at locations coincident with the 89 sensors. We used two stacked AWD shots at each of the southernmost 70 shot points, and four stacked hammer shots for each of the northernmost 19 shots, which were largely within the church courtyard.

The third seismic survey (HRR2) along Profile HW1 used active S-wave sources that were in line with the recording array. We generated the seismic sources by horizontally striking a 3.6-kg hammer against an aluminum block that was tethered to the ground surface. The recording array consisted of 89 horizontal-component sensors that were spaced 2 m apart. For the HRR2 survey, we recorded S-wave refraction, S-wave reflection, and Love-wave data that were evaluated for evidence of faulting. In acquiring the S-wave data, we generated seismic shots at 78 (of 89) shot-point locations that

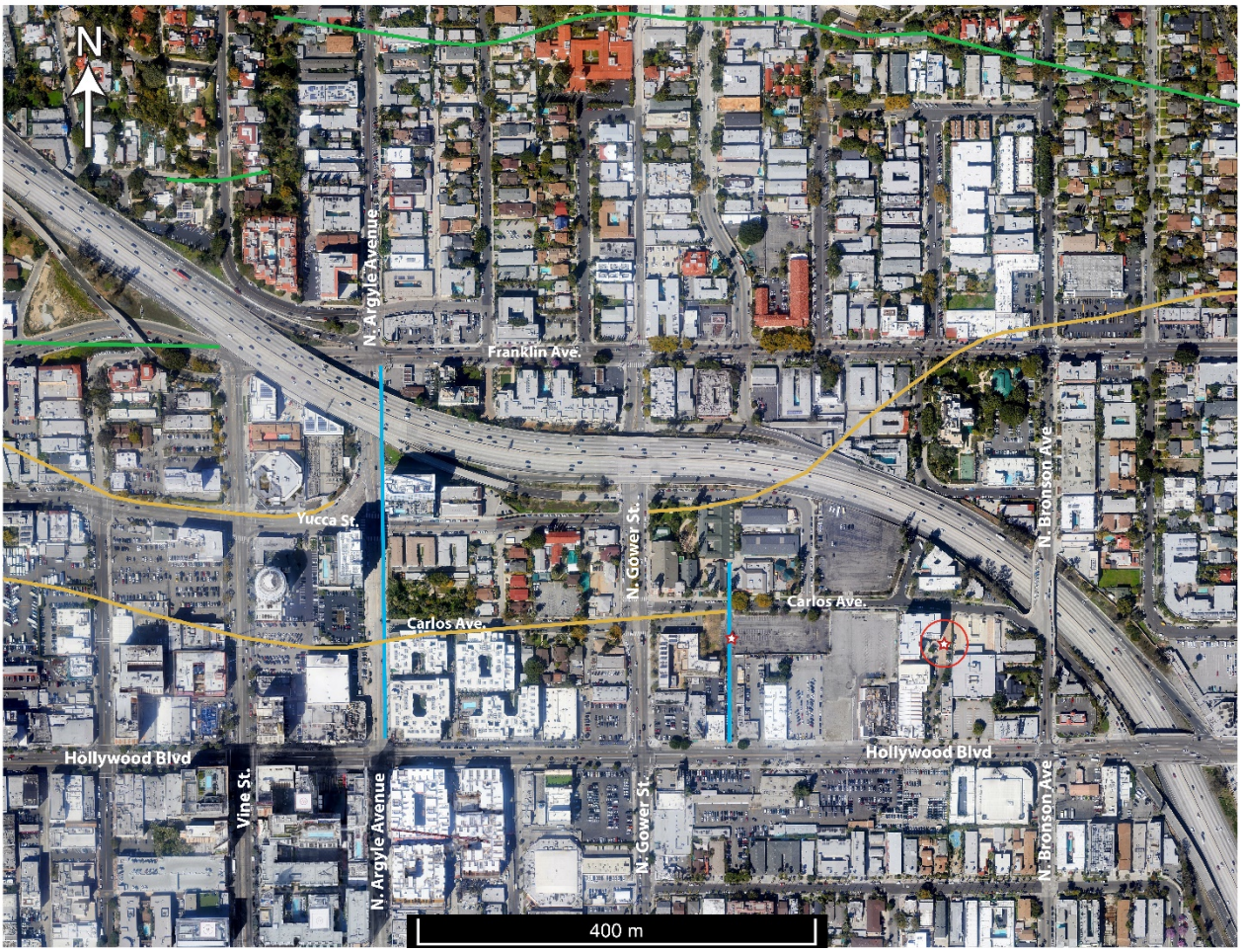

Figure 2. Google Earth image of study area along Hollywood Fault (yellow lines). Green lines show inferred location of faults of undetermined age. Blue lines show locations of seismic profiles: HW1 is shorter, eastern profile; HW2 is longer, western profile. Red stars show locations of shot points used to generate guided waves: SP2, star along profile HW1; SP1, circled star. Abbreviation: m, meter(s).

were coincident with horizontal-component sensors. Most of the unused shot-point locations were within the courtyard of the First Presbyterian Church of Hollywood, where the ground was covered with cement. To avoid damaging the cement, we chose not to have sources at sensor numbers 66, 69, and 81 to 89. We used four stacked hammer-block shots for each shot point.

We used three types of recording systems along Profile HW1. For in-line, P- and Rayleigh-wave seismic imaging, we used Mark Products 4.5-hertz (Hz), vertical-component sensors (geophones) that were attached to a refraction cable. For in-line, S- and Love-wave seismic imaging, we used Mark Products 4.5-Hz, horizontal-component sensors that were attached to the same refraction cable. For both types of sensors, the refraction cable was attached to two 60-channel Geometrics RX60 Strataview seismographs. For both the P- and S-wave surveys, we used a sampling rate of 0.5 milliseconds (ms), and data were recorded for 2 seconds (s). For guided-wave recording along Profile HW1, at each recording site, we used two stand-alone, Reftek RT-125 (Texan) seismographs that were attached to Sercel 4.5-Hz, 3-component L-28 sensors, and we used a sampling rate of 0.5 ms and a recording length of 3 s.

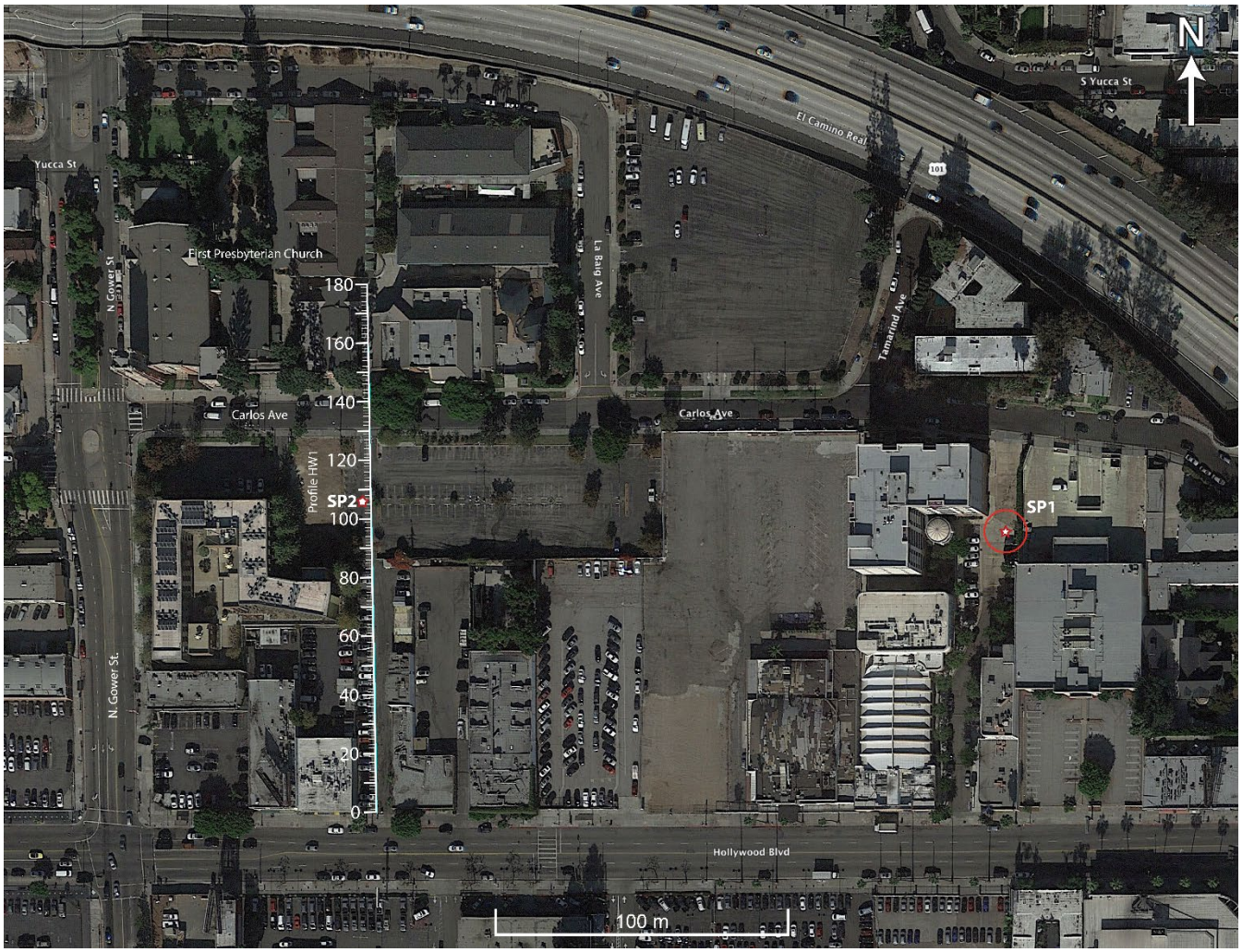

Figure 3. Google Earth image of Hollywood Fault study area near Profile HW1, showing distance scale (in meters [m]) along Profile HW1 and locations of shot points SP1 and SP2 (red stars). SP1 is located at the near-surface fault trace, as determined by a core-boring and cone-penetration-testing (CPT) transect; SP2 is located at the near-surface trace of Hollywood Fault, as indicated by peak ground velocity of guided waves.

Hollywood Fault Profile HW2

Profile HW2 extended along the east side of North Argyle Avenue from Hollywood Boulevard to Franklin Avenue, crossing Yucca Street and Highway 101 near the north end of the profile (fig. 4). As with Profile HW1, we conducted several types of seismic investigations along Profile HW2 or parts of it. The first seismic survey along Profile HW2 was a guided-wave survey (HWG2), from which guided-wave data were acquired. The second seismic survey was an in-line P-wave survey (HRR3), from which reflection, refraction, and MAS_RW (multichannel analysis of surface waves, Rayleigh waves) data were acquired. The third seismic survey was an S-wave survey (HRR4), from which we attempted to acquire reflection, refraction, and MAS_LW (multichannel analysis of surface waves, Love waves) data; however, we recorded only 13 S-wave shots for the HRR4 survey because our S-wave seismic sources were too weak to overcome the traffic noise along North Argyle Avenue. As a result, we did not process data for the third (HRR4) survey.

For the HRR3 in-line seismic survey, we deployed 66 channels, using 3-m spacing between each channel and having a total profile length of 195 m. The actively recording profile extended only from

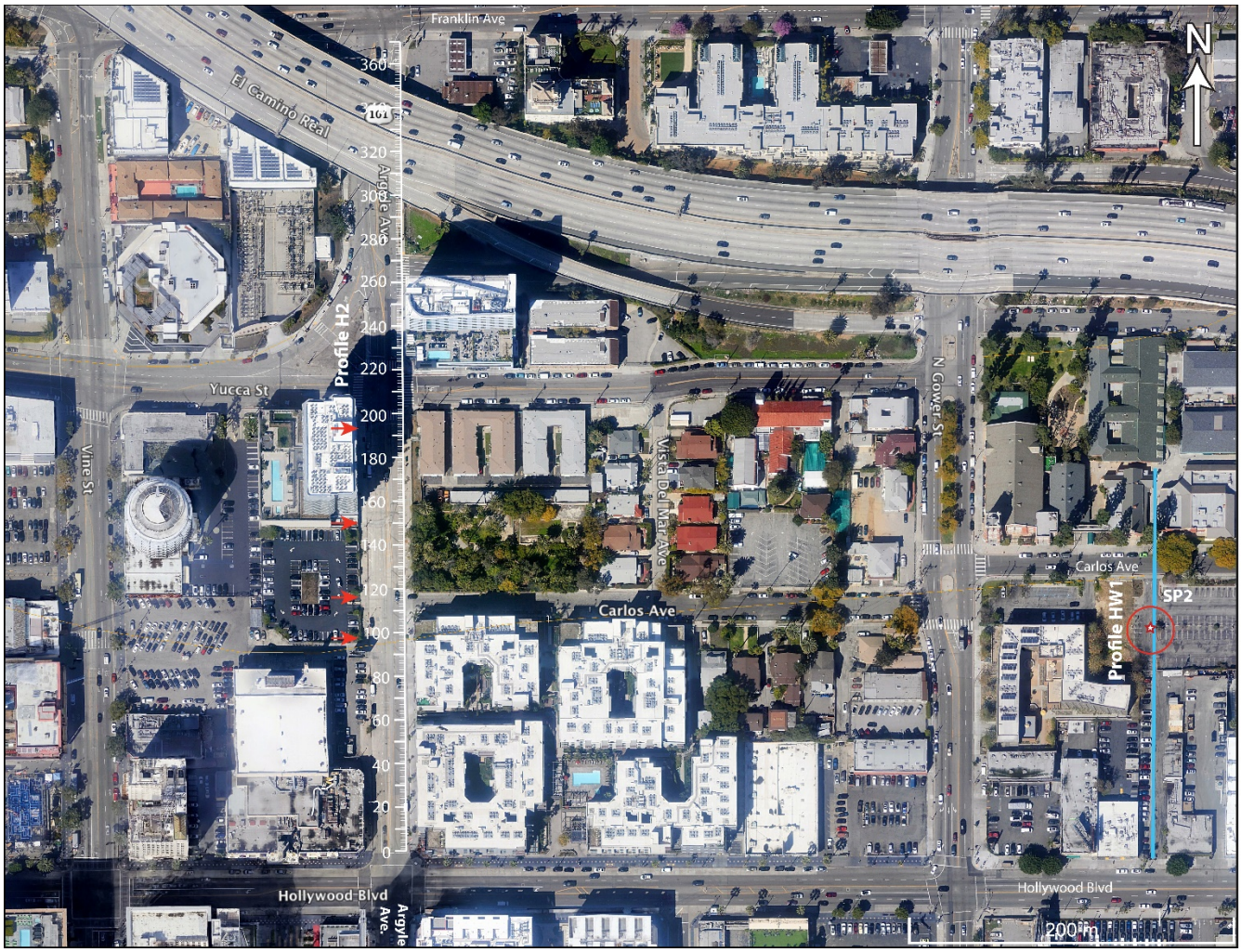

Figure 4. Google Earth image of Hollywood Fault study area near Profile HW2, showing distance scale (in meters [m]) along Profile HW2 (North Argyle Avenue) and location of SP2 (circled red star). Red arrows along North Argyle Avenue denote two zones of probable faulting, as indicated by seismic data. SP2 is located at the near-surface trace of Hollywood Fault, as indicated by peak ground velocity of guided waves.

Hollywood Boulevard to Yucca Street (fig. 4). We used a 227-kg AWD to generate P- and Rayleigh-wave seismic energy along the profile, and a shot point was colocated with every active channel except three of them that had obstructions that prevented the use of the AWD. The P- (and Rayleigh-) wave data were recorded using two Geometrics RX-60 seismographs that were attached to refraction cables and Sercel 4.5-Hz, single-component (vertical) sensors.

Guided-Waves Results for Profile HW1

The guided-wave seismic survey (HGW1) along Profile HW1 was conducted on the night of May 24, 2018. Although we deployed 89 sensors that were spaced at 2-m intervals, ten of the sensors experienced instrumental failure. The seismic source for the HGW1 survey was located about 215 m east of the recording array and approximately 100 m west of North Bronson Avenue, between Carlos Avenue to the north and Hollywood Boulevard to the south (fig. 3). To record guided waves with less cultural noise, we generated seismic sources (157 AWD shots) in the evening hours of May 24, 2018, beginning at about 18:06:11 (local time) and continuing until 18:57:40. The resulting data contained clear arrivals and strong guided-wave energy.

Guided-Wave Data Analysis for Profile HW1

Guided waves generated during the HGW1 survey were identifiable as high-amplitude arrivals following the shear-wave arrivals (figs. 5*A*, *B*). As a result, we evaluated PGV on the seismic traces only for the part of the seismic record at and following the S-wave first arrival. We correlated the PGV of the guided waves and the travel times to differentiate the guided waves from other possible strong arrivals (figs. 6*A*, *B*). The data show that the highest PGV values, which are expected at fault traces, arrived at the recording array at about 1,200 ms (1.2 s), and, because the source was approximately 215 m from the recording array, we determined that the guided waves traveled (on average) at about 180 m/s. The earliest shear waves arrived at the recording array at about 800 ms (0.8 s), suggesting an average V_S of about 270 m/s. Thus, the guided waves traveled at about 67 percent of the velocity of the shear waves, consistent with velocities expected of guided waves.

Because guided waves travel exclusively within fault zones as high-amplitude arrivals, the physical location of near-surface fault traces can be inferred from guided waves (fig. 6*A*), with the highest amplitudes occurring at the near-surface trace. Our analysis of the PGV of guided waves along Profile HW1 shows a prominent peak between channels 48 and 66 (meters 94–110) of the recording array, with the highest peak concentrated at channel 54 (meter 106) of Profile HW1. Although the highest PGV value occurs at channel 54, relatively high values also occur between channels 50 and 60 (meters 98–118), suggesting a wider fault zone at slightly greater depths. PGV values are appreciably lower to the north and south of the apparent fault zone (channels 48–66, meters 94–110), but an asymmetry is present in PGV values, whereby values to the south are higher than those to the north. We interpret this asymmetry to indicate either a near-surface southward dip of the fault zone or some additional deeper fault traces to the south of meter 106 of the seismic profile.

Our inferred fault location is also consistent with disruptions in lithology identified in previous borehole measurements (Group Delta, 2015). However, Group Delta (2015) interpreted this change in lithology as arising from a shallow-depth paleochannel at that location. We suggest, however, that a paleochannel cannot account for the presence of guided waves, the observed travel-time delay of the guided waves, or the discrete high PGV values at meter 106. As discussed below, a paleochannel also cannot account for other seismic anomalies observed at that location. Thus, we suggest that the lithology change and the high PGV values result from near-surface faulting near meter 106 of Profile HW1 .

In addition to the high PGV values at the apparent near-surface fault zone (meter 106), a zone of relatively higher PGV values is present between channels 1 and 18 (fig. 6*A*). Although this zone has high PGV values that would be expected of a deeper fault zone, the timing of the high PGV values (fig. 6*B*) suggests that they are not generated by guided waves. Instead, we suggest that this zone of high PGV values may be caused by seismic energy generated by the subway system (Metro Red Line), which is located beneath Hollywood Boulevard. With respect to guided waves, a subway system would be somewhat analogous to a fault zone, whereby high-amplitude seismic and sound waves that are generated within the subway bore by moving trains would be trapped and would propagate within the subway bore.

Tomography, MASW, and Reflection Results for Profile HW1

For the in-line active-source surveys along Profile HW1, we evaluated V_P, V_S, V_P/V_S ratios, and Poisson's ratios, using V_P derived from tomography and V_S derived from several methods. We also evaluated V_P and V_S reflection images.

Profile HW1 V_P Model

Along Profile HW1, our tomography model (fig. 7) shows that V_P ranges from about 300 m/s (at the surface) to 2,800 m/s (at ~50 m depth). In the shallow subsurface, a change in the depth of the

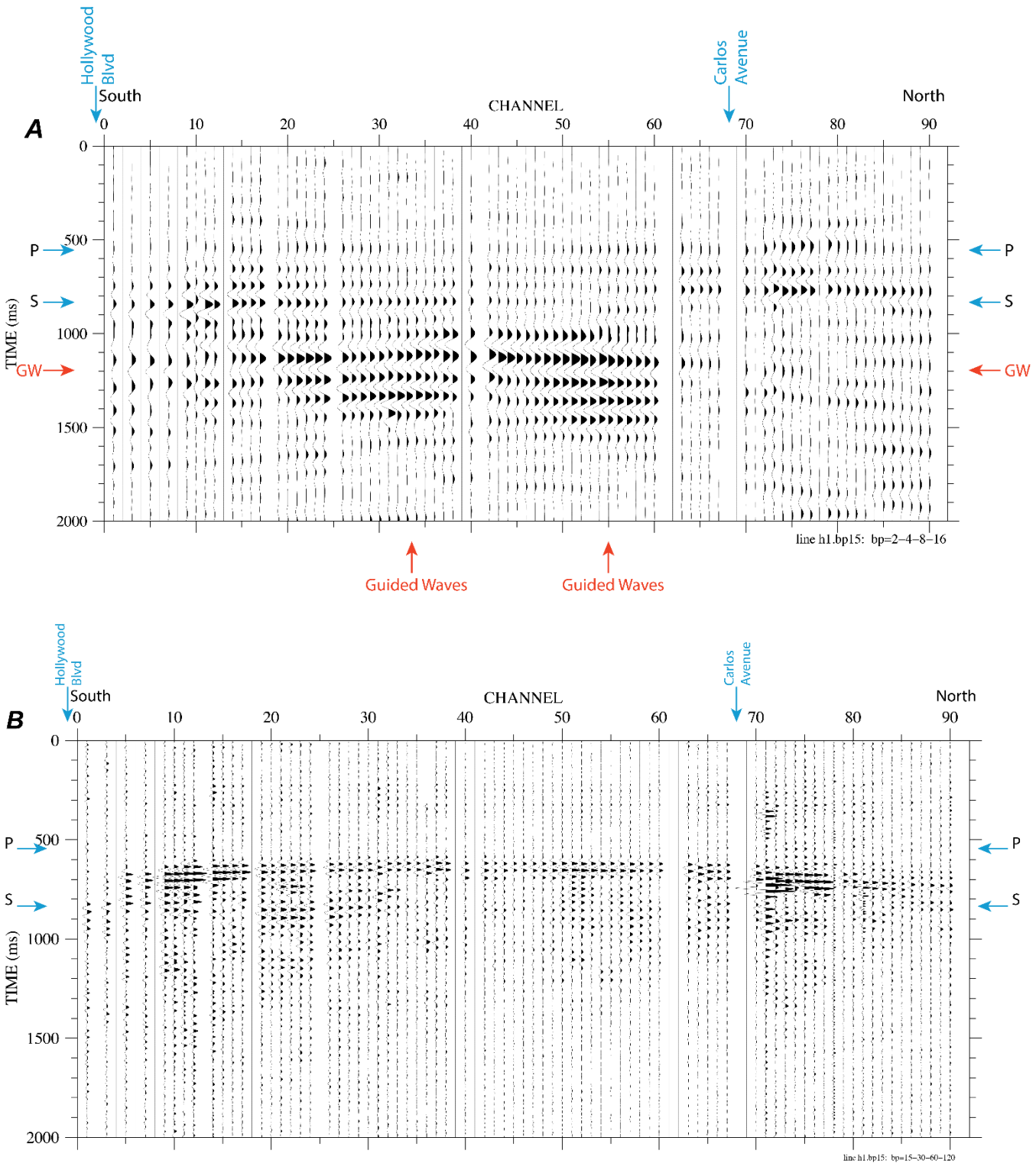

Figure 5. *A*, Stacked guided-wave shot gather for Profile HW1 (guided-wave survey HGW1). Source is located at SP1; recording array is located along Profile HW1. P waves (P), S waves (S), and guided waves (GW) are labeled on shot gather. Data were band-pass filtered between 2 and 16 Hz. *B*, Same shot gather as in *A*, but filtered between 15 and 120 Hz (note that only P-waves and partial S-waves are prominent at higher frequencies). Locations of nearby streets are shown. Other abbreviation: ms, millisecond(s).

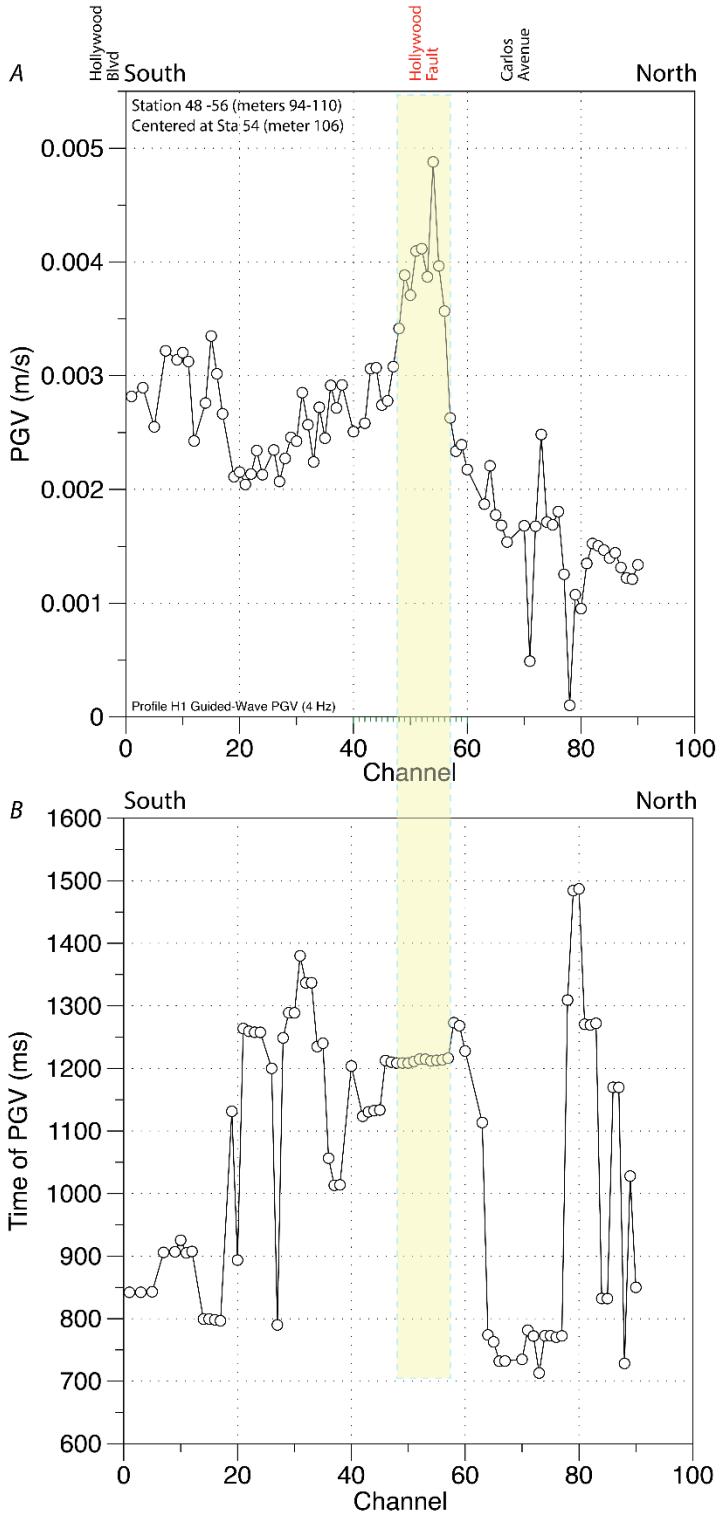

Figure 6. *A*, Plot of peak ground velocity (PGV) of guided waves for each recording channel along Profile HW1; highest PGV values (yellow shading) are concentrated between channels 48 and 56, and highest PGV value is at channel 54 (meter 106). *B*, Plot of time of arrival of corresponding PGV values shown in *A*; highest PGV values coincide with delayed phases that arrive at about 1,200 ms. As can be seen from shot gather (see fig. 5*A*), these delayed phases correlate with guided waves; zones of high PGV of guided waves are expected within near-surface fault zones. Locations of nearby streets are shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

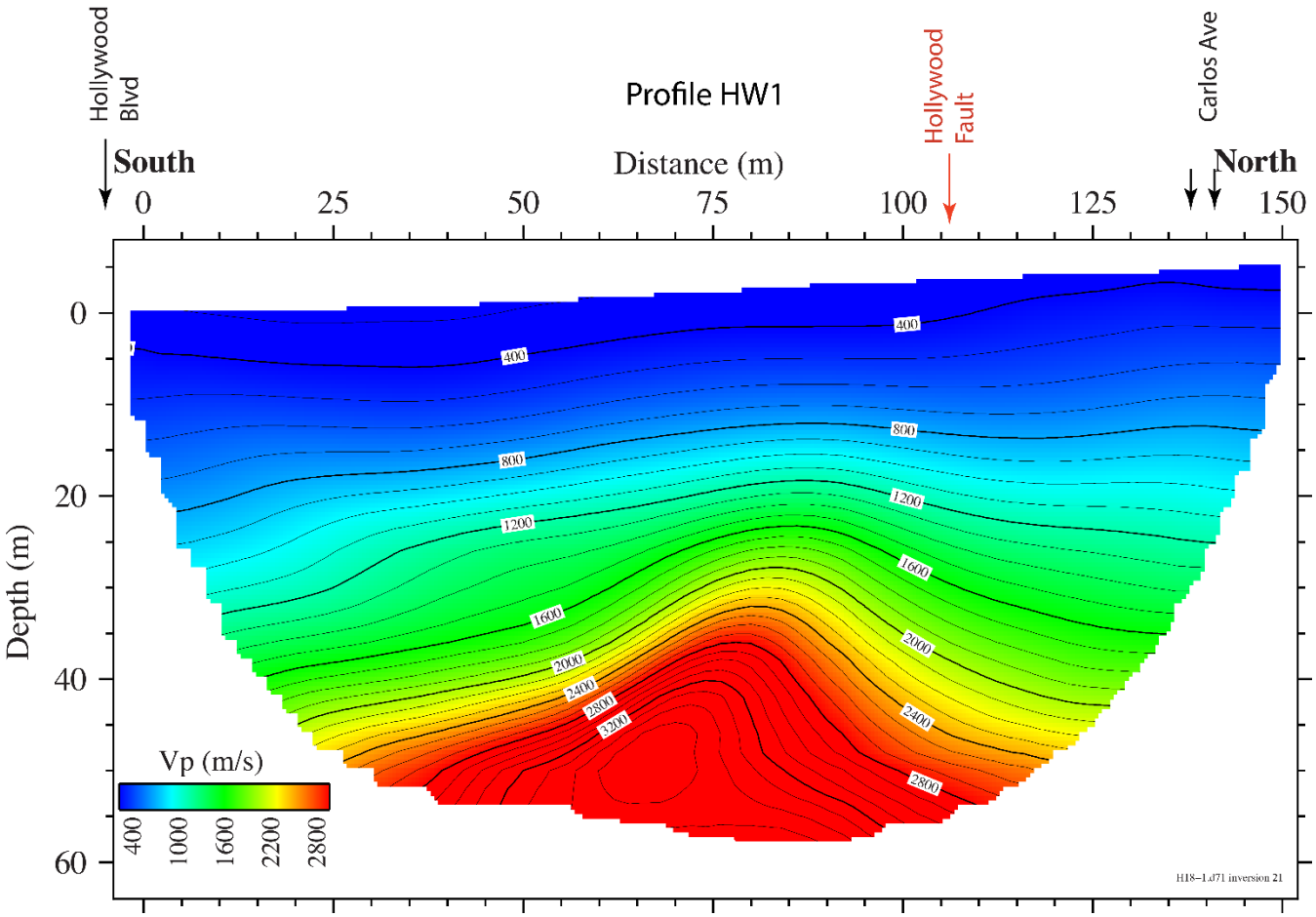

Figure 7. Tomographic P-wave velocity (V_P) model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves) correlates with sharp change in depth of 400-m/s velocity contour. At about 20 m depth, slightly south of inferred surface trace of Hollywood Fault, there is a zone of high velocities, especially velocities higher than about 1,500 m/s, which is consistent with a fault that acts as a groundwater barrier. Other abbreviations: m, meter(s); s, second(s).

400-m/s velocity contour is observed near meter 106 of the seismic profile, suggesting a lateral change in material properties there. This shallow change in materials overlies a deeper, dome-shaped set of velocity contours, suggesting a continuous change in velocities from the near-surface to the base of our velocity model. For V_P values in excess of 1,500 m/s, the apex of the dome is located at meter 90 at about 20-m depth. Overall, the dome-shaped structure dips to the south. We have observed such domelike velocity structures elsewhere where groundwater saturation, which typically has V_P of 1,500 m/s in sediments, abruptly changes across faults. Such structures typically result from ponding of groundwater against faults that act as ground-water barriers. However, ponding typically occurs on the topographically upslope side of faults, unless water flows parallel to the fault or over the top of a fault that does not reach the surface (Catchings and others 2014). We suggest that the approximate depth to the top of groundwater along Profile HW1 is indicated by the 1,500-m/s velocity contour.

Profile HW1 V_S Model

Our tomographic V_S model (fig. 8) shows that shear-wave velocities (V_S) along Profile HW1 range from about 200 m/s (at the surface) to about 490 m/s (at about 25-m depth). At shallow depths, V_S is lowest (~200 m/s) near meters 80 and between meters 95 and 106, but an abrupt change in V_S is

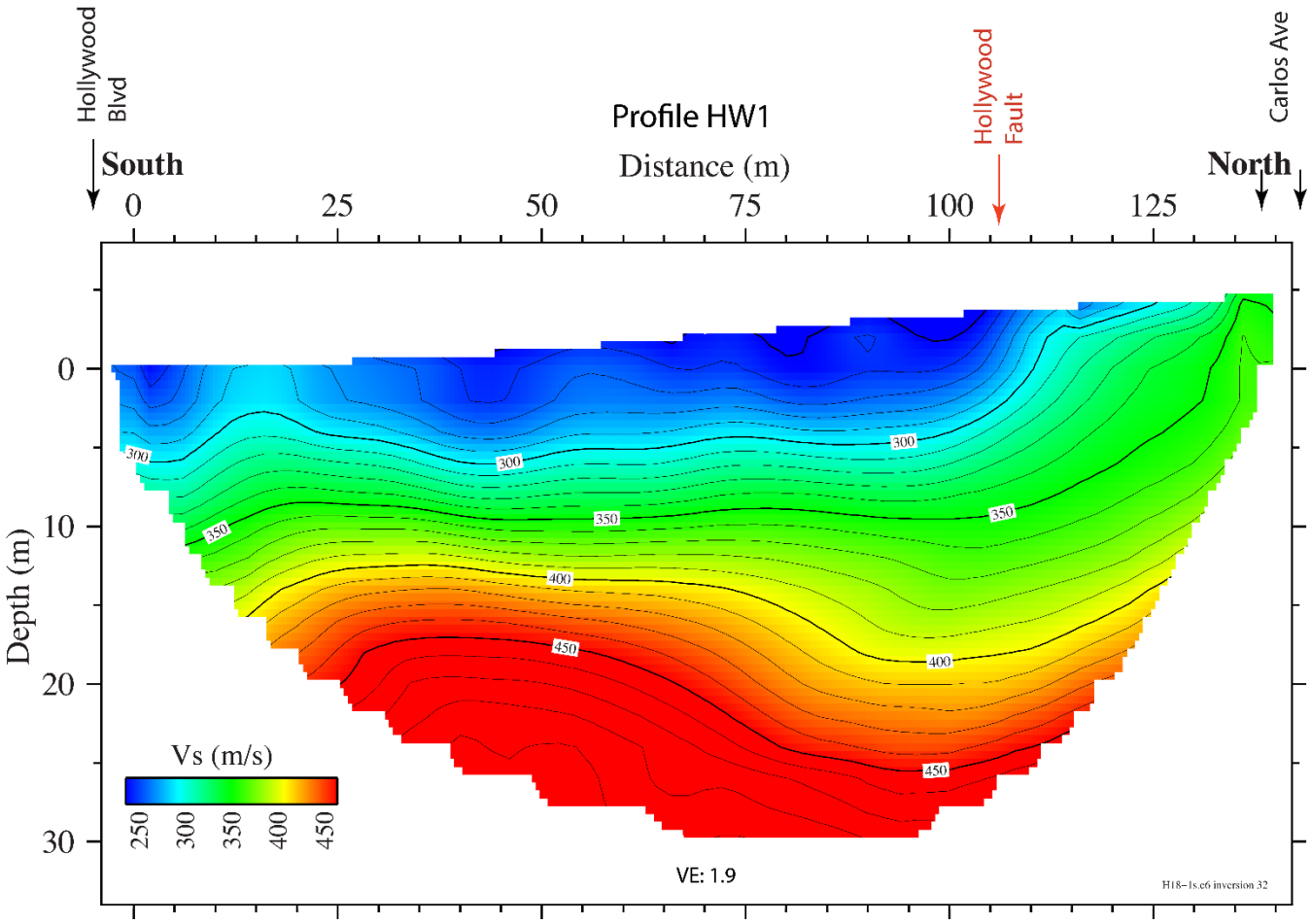

Figure 8. Tomographic S-wave velocity (V_S) model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves and P-wave velocities) correlates with a sharp change to higher velocities to the north and a relatively low-velocity zone at depths greater than about 15 m. Such near-vertical, S-wave, low-velocity zones are consistent with faulting. Other abbreviations: m, meter(s); s, second(s); VE, vertical exaggeration.

observed at about meter 106, where higher velocities occur at shallower depths to the north. This abrupt change in V_S continues vertically to the base of the velocity model at about 30 m depth. Zones of abrupt vertical changes in V_S are consistent with faulting because faults cause decreases in V_S owing to shearing. The general low-velocity zone associated with our interpreted fault dips about 79° to the south.

Profile HW1 V_P/V_S Ratios, Tomography Model

We developed a model of V_P/V_S ratios (fig. 9) along Profile HW1 by dividing V_P by V_S at each node of the velocity models. V_P/V_S ratios along Profile HW1 range from about 1 at the surface (in the south and extreme north) to about 4.4 at about 30-m depth (near meter 80). In a manner similar to the V_P structure along Profile HW1, we observe a domelike structure for all V_P/V_S values in the vicinity of meters 75 to 106, but the dome is most pronounced at depths greater than about 15 m. Overall, a slightly southward dip of the structure is observed. Water-saturated faults are expected to have high V_P/V_S ratios because the presence of water causes an increase in V_P, and also because shearing causes a larger decrease in V_S than V_P, resulting in high values of V_P/V_S. Typical hard rocks have V_P/V_S ratios of about 1.72, but sediments can have V_P/V_S ratios in excess of 3. Furthermore, Catchings and others (2014) showed that faulted sediments have higher V_P/V_S ratios beneath the groundwater table. Accordingly, we

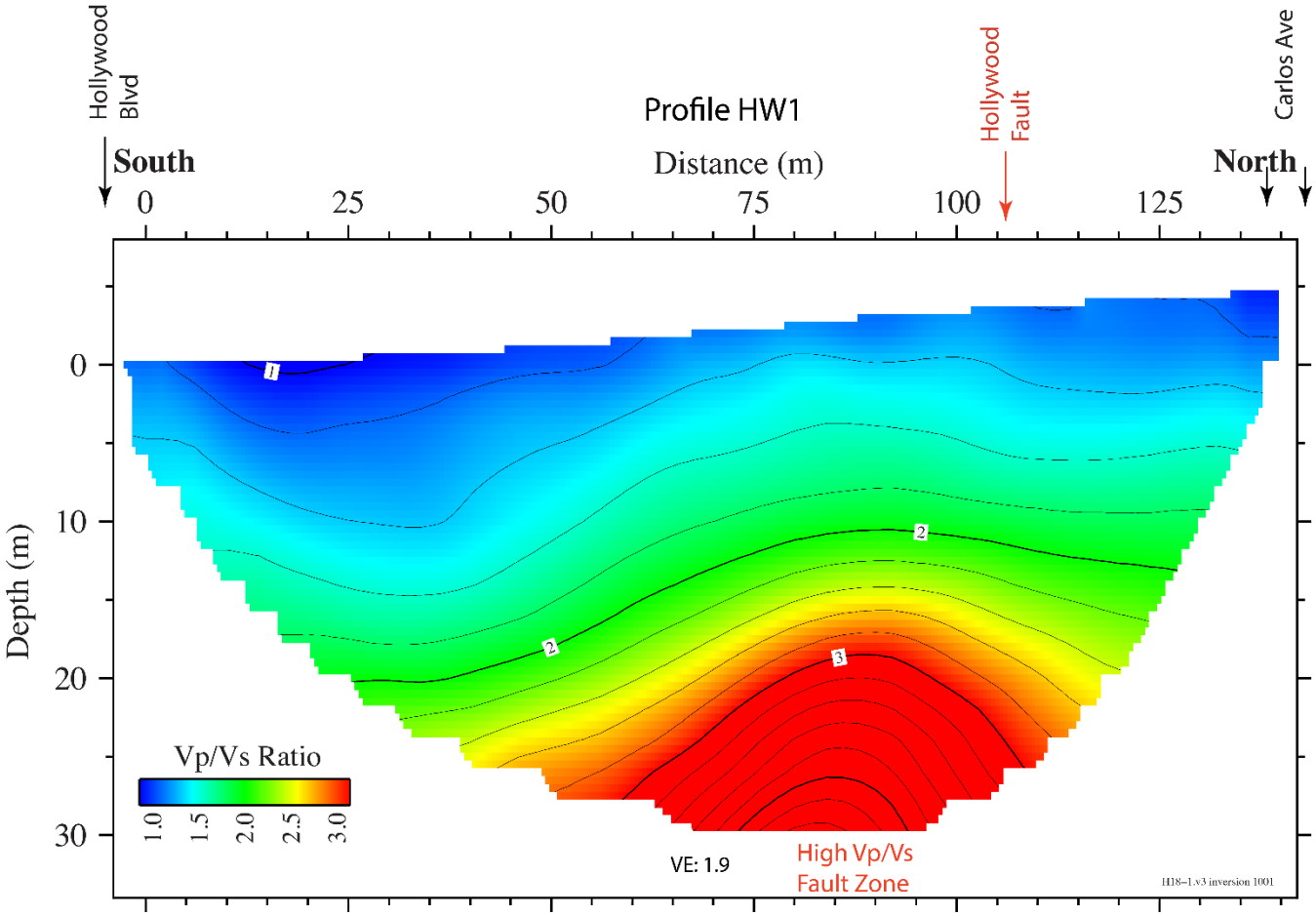

Figure 9. Tomographic V_P/V_S ratio model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves and P- and S-wave velocities) correlates with a shallow-depth zone of high V_P/V_S ratios. Below the inferred (1,500 m/s) water table, V_P/V_S ratios are unusually high (as high as 4.6) in upper 30 m; water-saturated fault zones typically have high V_P/V_S ratios. Other abbreviations: m, meter(s); s, second(s); VE, vertical exaggeration.

interpret the relatively high V_P/V_S ratios on Profile HW1 to be the result of groundwater variations associated with faulting.

Profile HW1 Poisson's Ratios, Tomography Model

We developed a model of Poisson's ratio (fig. 10) along Profile HW1 using the following relationship between V_P and V_S:

$$v = 3\mathrm{K} - \frac{2\mu}{6\mathrm{K}} + 2\mu \quad (1)$$

$$= \frac{\left[\left(\frac{\mathrm{Vp}}{\mathrm{Vs}}\right)^2 - 2\right]}{\left[2\left(\frac{\mathrm{Vp}}{\mathrm{Vs}}\right)^2 - 2\right]}, \quad (2)$$

where

v	is Poisson's ratio;
K	is the bulk modulus;
μ	is the shear modulus;

V_P is the P-wave velocity; and

V_S is the S-wave velocity.

The value of ν ranges from about 0.05 to about 0.45 along profile HW1. The very low values of ν are associated with the shallowest velocity structure (unsaturated zone), and the highest values occur in the deepest materials (below the water table). In the shallow subsurface, ν is most strongly influenced by groundwater saturation, but lithology (such as clays) also can have a strong influence. A ν value of 0.5 is indicative of a fluid, and, in shallow sediments, a ν value above about 0.43 to 0.44 has been associated with the top of the groundwater table (Catchings and others 2007, 2014). Overall, the ν structure along Profile HW1 is similar to the V_P/V_S ratio structure, which are both indicative of a water-saturated fault at depth.

Profile HW1 MAS$_R$W Model

Using Rayleigh waves that were recorded along Profile HW1, we used the MASW method to develop a second V_S model (fig. 11) for Profile HW1. However, the MASW method is inherently a one-

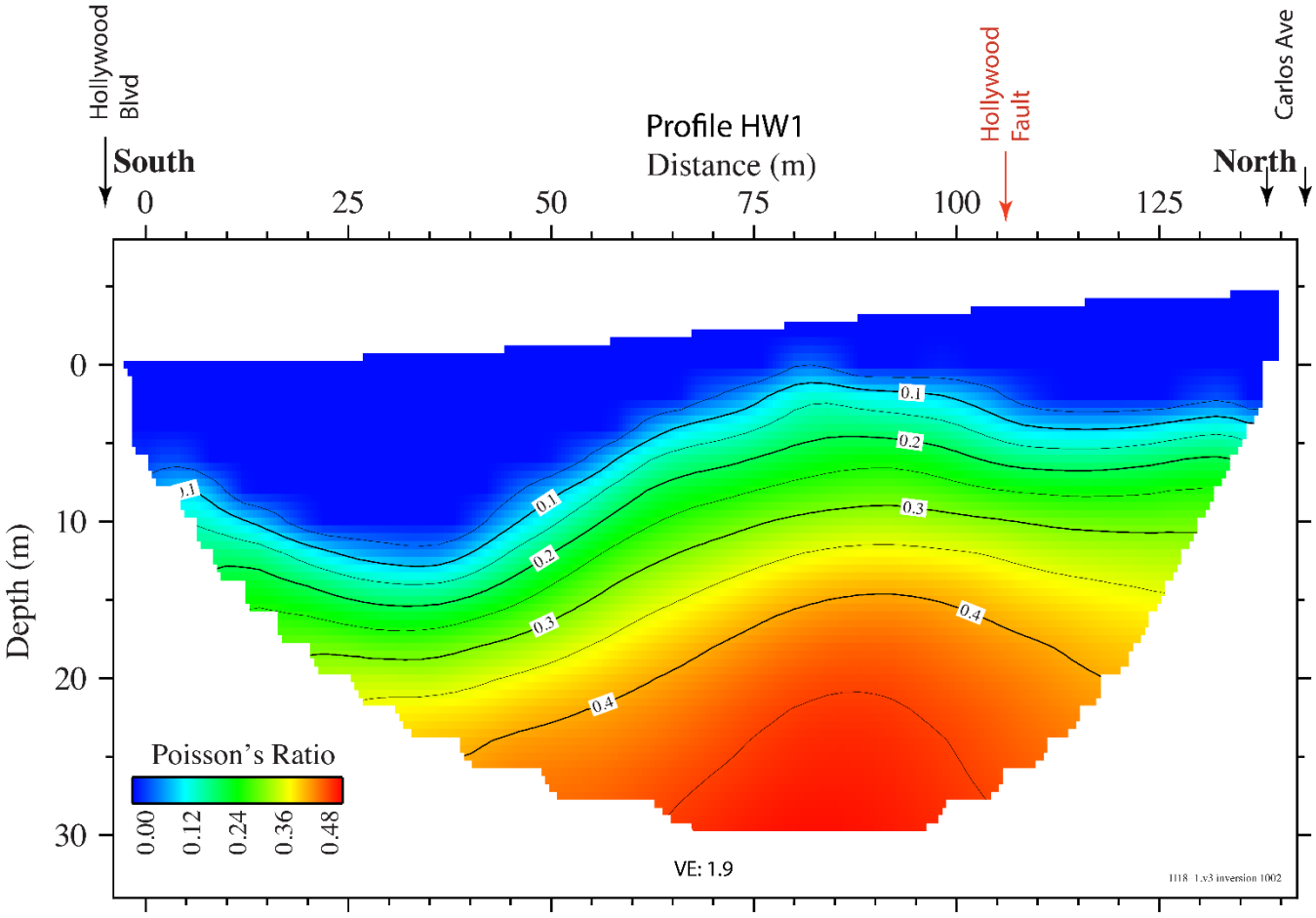

Figure 10. Tomographic Poisson's ratio model along Profile HW1, showing locations of nearby streets. Near-surface location of Hollywood Fault at meter 106 (as inferred by guided waves, P- and S-wave velocities, and V_P/V_S ratios) correlates with a shallow-depth zone of high Poisson's ratios. At depths of about 20 m, Poisson's ratios are shown to be as high as 0.45 below and slightly southwest of the surface trace of Hollywood Fault. Fluids have a Poisson's ratio of about 0.5, and Poisson's ratios of about 0.43 have been shown to correlate with groundwater table (Catchings and others, 2008). Water-saturated fault zones typically have high Poisson's ratios. Other abbreviations: m, meter(s); s, second(s); VE, vertical exaggeration.

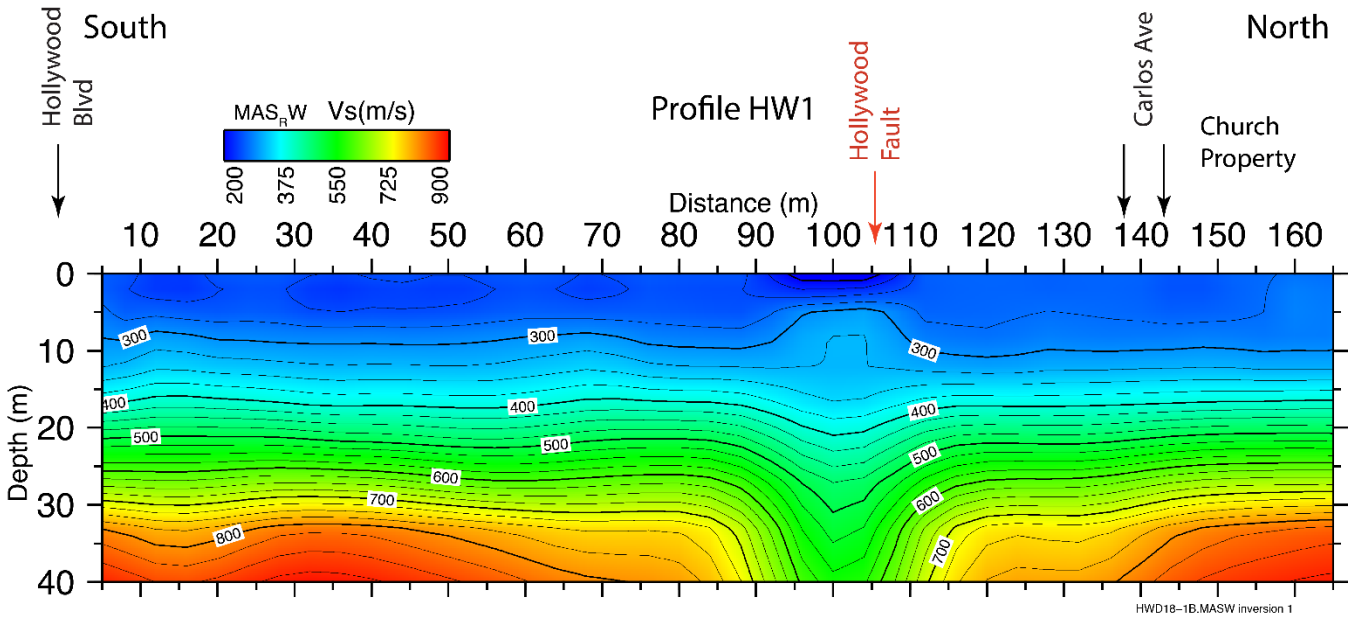

Figure 11. S-wave velocity (V_S) model inferred from Rayleigh waves, using multichannel analysis of surface waves (MASW) method. Near the inferred near-surface Hollywood Fault, our MASRW V_S model infers a zone of low V_S in upper few meters, underlain by a zone of high V_S at about 10 m and also a zone of low V_S to at least 40 m depth. Such near-vertical low-velocity zones are consistent with near-vertical faulting. Although details of the V_S model determined from MASW are slightly different from those of the V_S tomography model, both velocity anomalies are similar and are consistent with faulting near meter 106. Locations of nearby streets are shown. Other abbreviations: m, meter(s); s, second(s).

dimensional method, and, as a result, determination of V_S can be affected by lateral variations in structure, velocity, and topography. Nevertheless, the MASW method can provide an indication of lateral variations in V_S along Profile HW1. Our analysis of Rayleigh waves (MASRW) indicates that V_S along Profile HW1 ranges from about 200 m/s in the shallow subsurface (meters 95–105) to as much as 875 m/s at about 40-m depth. The shallowest V_S values are consistent between the tomography and the MASRW models, with minimum V_S values of about 200 m/s near meters 94 to 106, but MASRW-inferred V_S values are higher at depths greater than about 20 m in the MASRW model. In addition, the overall velocity structure is less variable and more linear in the MASRW model than the tomography model. However, both models suggest the presence of a general near-vertical low-velocity zone near meter 106 that extends to the base of the models. At about meter 106, the MASRW model indicates a more pronounced near-vertical low-velocity zone, which is highly consistent with a zone of near-vertical faulting (Catchings and others, 2014). Aligning the low-velocity contours in the MASRW model suggests that the shallow Hollywood Fault dips about 82° to the south.

Profile HW1 MASLW Model

Using Love waves recorded along Profile HW1, we developed a V_S model (fig. 12) using the MASW method. Our MASLW modeling indicates that V_S ranges from about 250 m/s at shallow depths to about 675 at about 50-m depth. Although the overall MASLW model varies from both the MASRW model and the tomography model, V_S and the overall V_S structure have similarities to those of both the tomography and MASRW models. In particular, the near-vertical low-velocity zone in the vicinity of meters 102 to 120 is seen in all the models and is consistent with a fault in that area. However, whereas the MASRW and tomography models and the asymmetry of the PGV of guided waves suggest a slight

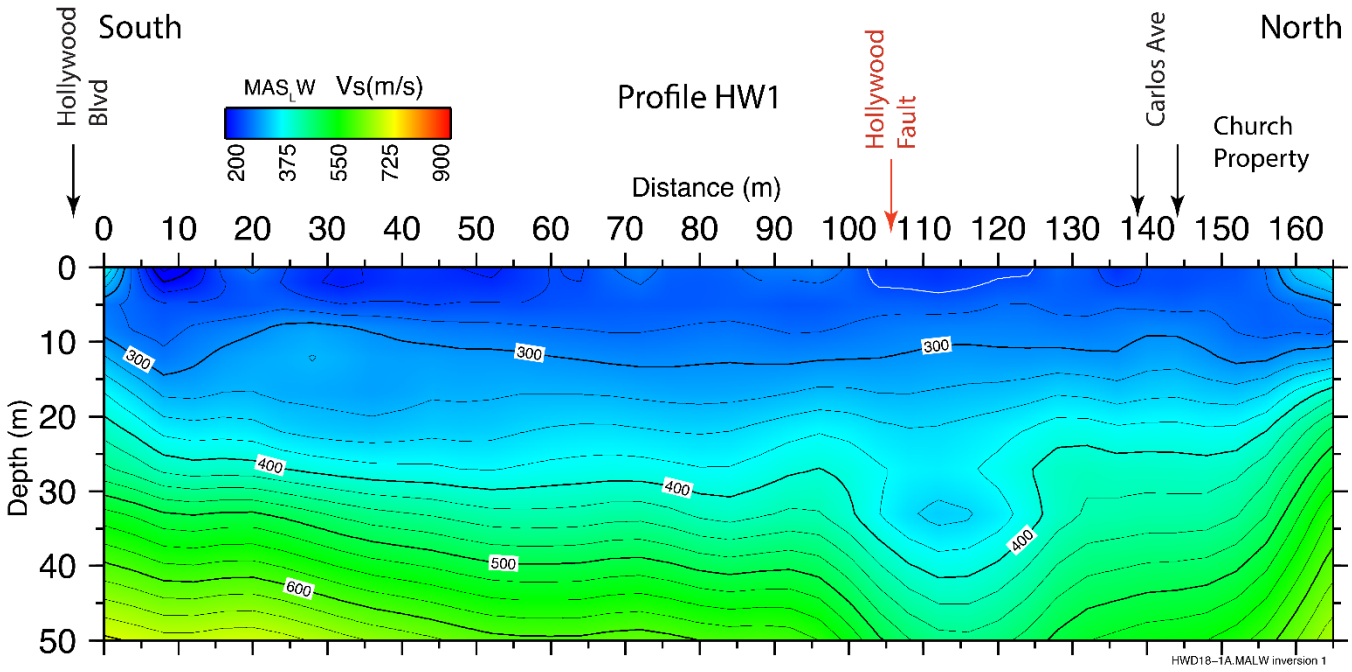

Figure 12. S-wave velocity (V_S) model inferred from Love waves, using multichannel analysis of surface waves (MASW) method. Near the inferred near-surface Hollywood Fault, our MAS$_L$W V_S model infers zones of low V_S in upper few meters and also below about 20 m depth. Such near-vertical low-velocity zones are consistent with near-vertical faulting. Although details of V_S models determined from MAS$_R$W, MAS$_L$W, and tomography differ in absolute velocity, velocity anomalies determined from all three methods are similar and are consistent with faulting. Locations of nearby streets are shown. Other abbreviations: m, meter(s); s, second(s).

southward fault dip at shallow depths, the MAS$_L$W model indicates a slight northward (79°) fault dip at shallow depths, on the basis of the observed low-velocity contours.

Profile HW1 V_P/V_S (V_P Tomography and V_S MAS$_R$W) Model

Using V_P from our tomography model (fig. 7) and the V_S from our MAS$_R$W model (fig. 11), we developed a hybrid V_P/V_S–ratio model (fig. 13) along Profile HW1. Our tomographic/MAS$_R$W hybrid V_P/V_S–ratio model suggests that V_P/V_S ratios range from about 1.2 at the surface to 3.8 at 40-m depth. This range of values in hybrid V_P/V_S ratios is slightly lower than the maximum V_P/V_S ratio value (4.4) indicated by the tomographic V_P/V_S–ratio model (fig. 9); however, the hybrid V_P/V_S–ratio model indicates a pronounced high V_P/V_S–ratio (up to 3.8) zone centered at about meters 100 to 105, similar to the high value (4.4) in the tomographic V_P/V_S–ratio model. Because water-saturated fault zones are expected to cause concentrated high V_P/V_S–ratio zones, we suggest that the relatively wide zone of high V_P/V_S ratios at depth in the hybrid model is likely indicative of a wider fault zone in the upper 40 m depth of the velocity model. The hybrid V_P/V_S–ratio image indicates an overall near-vertical fault that is centered near meter 100; however, this image is also consistent with the presence of adjacent splay faults.

Profile HW1 V_P/V_S (V_P Tomography and V_S MAS$_L$W) Model

Using V_P from our tomography model (fig. 7) and the V_S from our MAS$_L$W model (fig. 12), we developed a second hybrid V_P/V_S–ratio model (fig. 14) along Profile HW1. Our tomographic/MAS$_L$W hybrid V_P/V_S–ratio model suggests that V_P/V_S ratios range from about 1.5 at the surface to 6.0 at 40- to 50-m depth, with pronounced high values being observed beneath the central part of the profile. In the

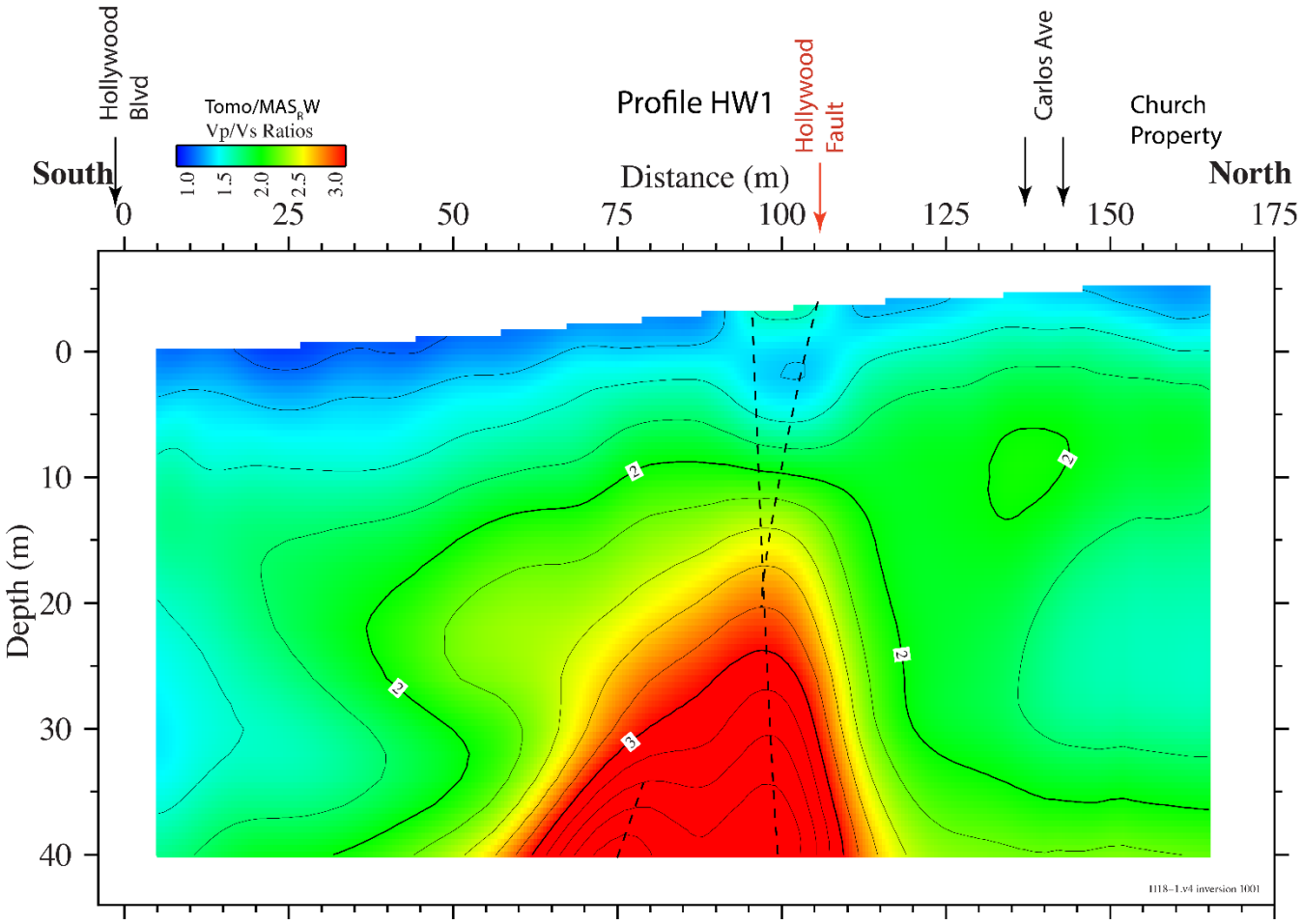

Figure 13. V_P/V_S ratio model along Profile HW1 derived from a combination of our V_P tomography model and our MASRW V_S model. A zone of locally high V_P/V_S ratios occurs near the near-surface trace of Hollywood Fault (dashed lines), as inferred by multiple models in this study. Near-vertical zone of high V_P/V_S ratios is concentrated beneath the near-surface fault trace, as has been seen for other fault zones. Locations of nearby streets are shown. Other abbreviation: m, meter(s).

upper 30 m, all three V_P/V_S–ratio models infer similar structures, but the hybrid V_P/V_S–ratio models suggest a wider fault zone at depth and infer possible northward and southward dips.

Profile HW1 P-Wave Reflection Stack

Using P-wave shot gathers from Profile HW1, we developed a low-resolution P-wave seismic reflection image (stack) of the shallow subsurface (fig. 15). The P-wave reflection stack indicates the presence of predominantly subhorizontal layering in the upper 20 m, with apparent slight folding centered near meter 100 of the profile. This unmigrated image suggests the presence of strong diffractions below about 20-m depth, centered near meter 100. Diffractions are caused by sharp boundaries in the subsurface, and faulting, which vertically offsets layers, is a typical cause of such diffractions, particularly when the diffractions are subvertically aligned, as seen in figure 15. Thus, the P-wave reflection image is consistent with a near-vertical fault located near meter 100. By aligning the diffractions over depths that range from about 20 to about 120 m, the alignment of diffractions suggests that the fault dips about 87° northward below 20-m depth (fig. 15). In addition, significant noise or surface waves is seen in the southern part of the reflection image, making it difficult to resolve the

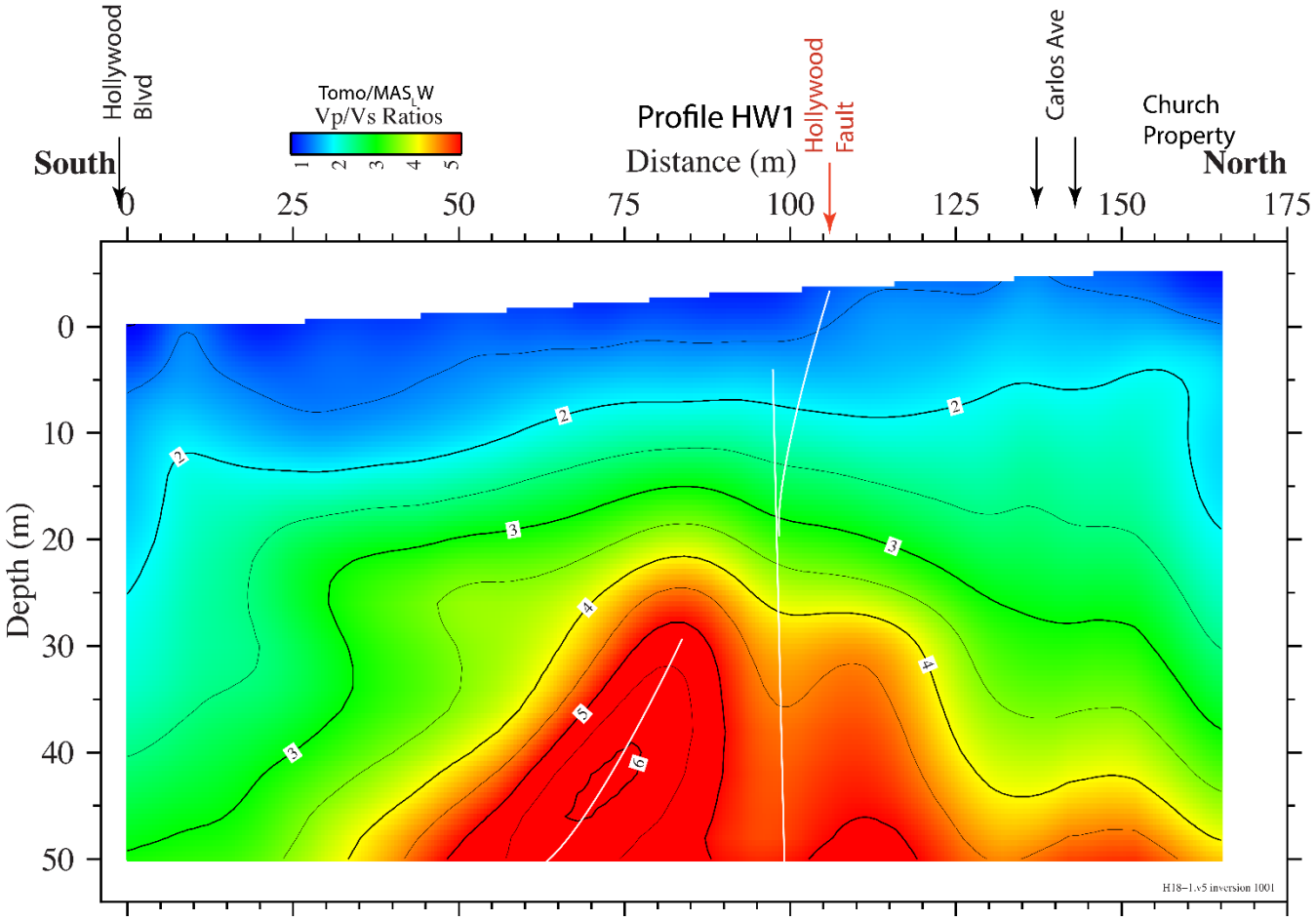

Figure 14. Poisson's ratio model along Profile HW1 derived from combination of our V_P tomography model and our MAS$_L$W V_S model. A zone of locally high Poisson's ratios occurs near the near-surface trace of Hollywood Fault (white lines), as inferred by multiple models in this study. Near-vertical zone of high Poisson's ratios is concentrated near the near-surface trace of Hollywood Fault, as has been seen for other fault zones. Locations of nearby streets are shown. Other abbreviation: m, meter(s).

structure along the south half of Profile HW1. The strong energy likely arises from either the Los Angeles Metro Rail (subway) Redline trains or car traffic along Hollywood Boulevard.

Profile HW1 S-Wave Reflection Stack

Using S-wave shot gathers from Profile HW1, we developed a low-resolution S-wave seismic reflection image (stack) of the shallow subsurface (fig. 16). The S-wave reflection stack also indicates the presence of predominantly subhorizontal layering and an apparent fold centered near meter 100. Aligning the apex of the apparent fold—from about 20 to about 125 m—suggests that the deeper fault dips about 87 degrees northward, with the possibility of a splay fault dipping about 79° southward near the surface. High noise levels on the south end of the profile interferes with the seismic signal, making it difficult to delineate any possible fault structures.

Summary of Seismic Indicators of Faulting along Profile HW1

We evaluated 13 different seismic images along Profile HW1, including (1) PGV of guided waves, (2) tomographic V_P, (3) tomographic V_S, (4) tomographic V_P/V_S ratios, (5) tomographic Poisson's ratios, (6) MAS$_R$W V_S, (7) MAS$_L$W V_S, (8) hybrid tomography/MAS$_R$W V_P/V_S ratios, (9) hybrid

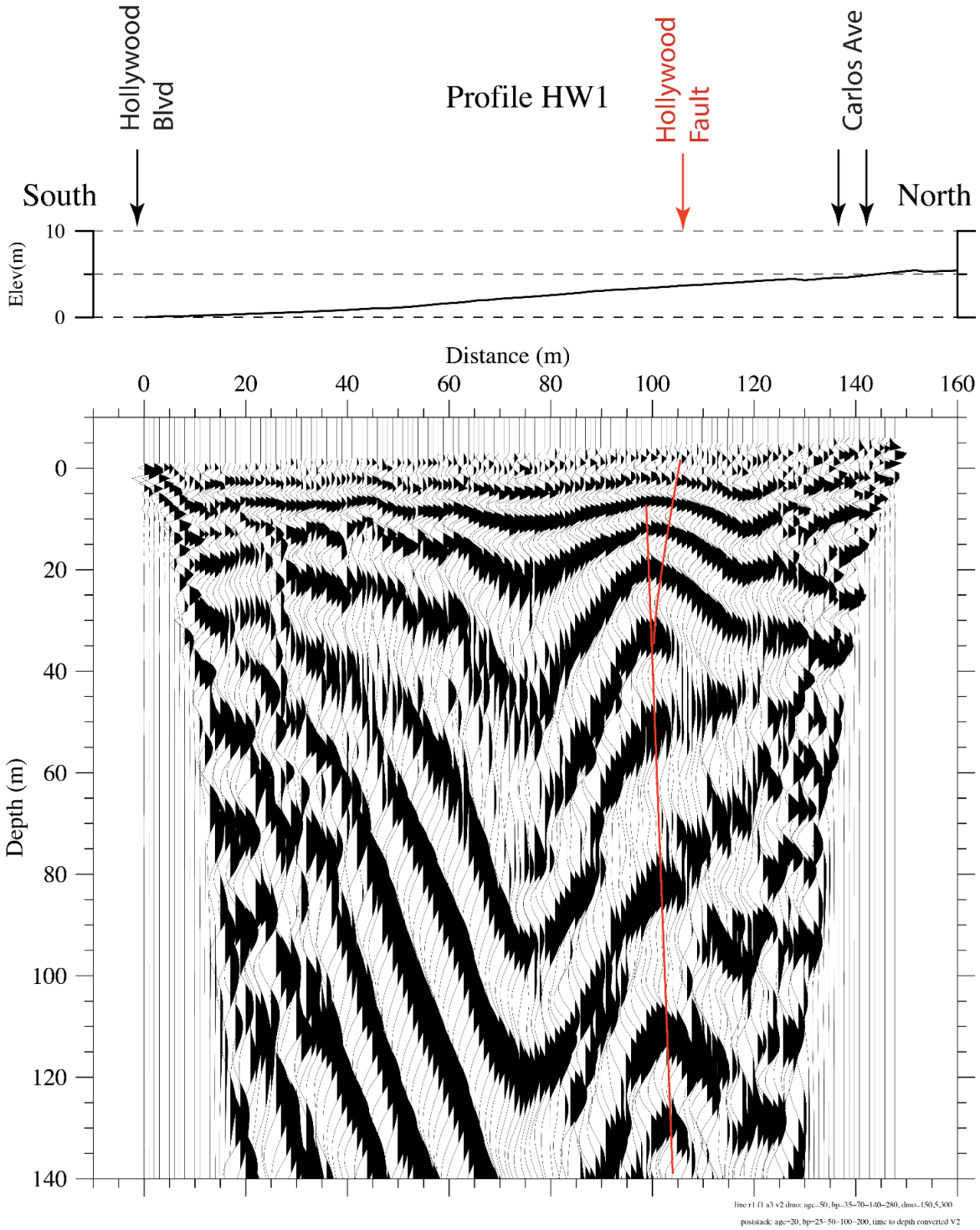

Figure 15. Low-resolution P-wave reflection stack for Profile HW1. Strong diffractions are apparent beneath the inferred location of Hollywood Fault (red lines), beginning at about 10 m depth and extending to base of reflection image. Such diffractions are typically seen on unmigrated reflection images of faulted strata. Locations of nearby streets are shown. Abbreviation: m, meter(s).

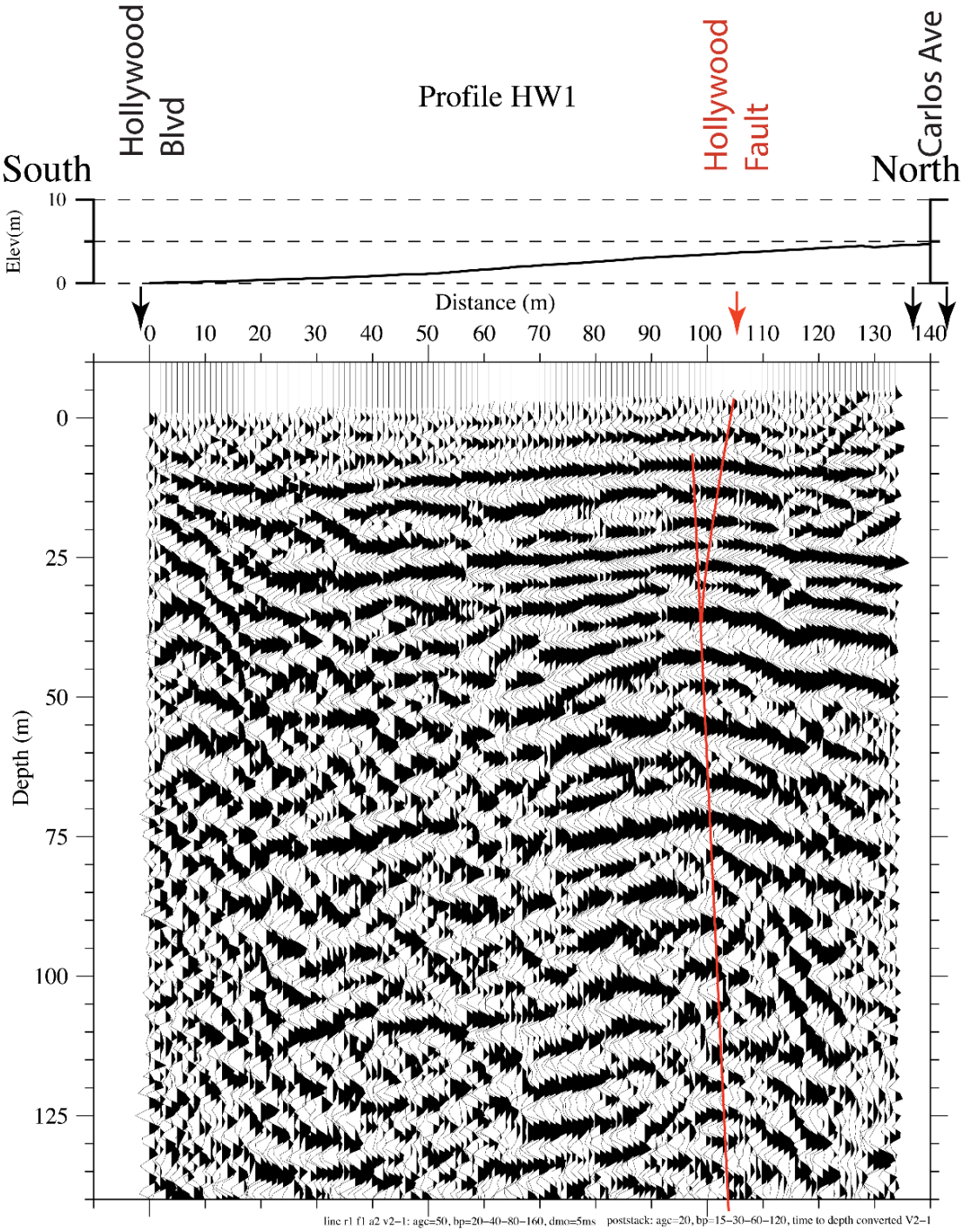

Figure 16. Low-resolution S-wave reflection stack for Profile HW1. Folds and diffractions are apparent beneath the inferred location of Hollywood Fault (red lines), beginning at about 10 m depth and extending to base of reflection image. Such disrupted layering is typically seen on reflection images of faulted strata. Locations of nearby streets are shown. Abbreviation: m, meter(s).

tomography/MAS$_R$W Poisson's ratios, (10) hybrid tomography/MAS$_L$W V_P/V_S ratios, (11) hybrid tomography/MAS$_L$W Poisson's ratios, (12) P-wave reflection, and (13) S-wave reflection. All 13 images presented here are consistent with a near-vertical fault located near meters 100 to 106 of Profile HW1. We suggest that the guided-wave results are likely most diagnostic of the location of faulting nearest the surface.

Guided-Wave Results for Profile HW2

We evaluated two guided-wave seismic datasets recorded along Profile HW2, and both were recorded on the night of May 24, 2018, using the same recording system as was used along Profile HW1. However, the recording array for Profile HW2 was located along North Argyle Avenue, where significant traffic noise occurs. A total of 123 recording stations were surveyed along Profile HW2, but seismographs were not deployed at 11 stations owing to the presence of obstacles such as driveways and buried pipes. Of the stations deployed, six seismographs did not record data.

The first guided-wave survey (HGW2) along Profile HW2 used the same source location (SP1) as was used for the HGW1 guided-wave survey along Profile HW1 (fig. 2). A total of 157 AWD shots were stacked to generate the guided waves for the HGW2 guided-wave survey. The perpendicular distance from SP1 to Profile HW2 was approximately 560 m, with longer distances to the north and to the south of the profile. The seismic sources (shots) for the HGW2 survey began on May 24, 2018, at 20:24:43 (local time) and continued until 20:43:33.

The second guided-wave survey (HGW3) recorded along Profile HW2 used the same recording array as was used in the HGW2 survey; however, the seismic source (SP2) was located near the center of the Profile HW1 recording array (fig. 3), such that SP2 was located at the fault location inferred from an earlier borehole survey. The perpendicular distance from SP2 to Profile HW2 (Argyle Avenue) was approximately 350 m. We used a total of 151 AWD shots (stacked) to generate guided waves for the HGW3 seismic survey. The HGW3 survey shots began on May 24, 2018, at 21:29:37 (local time) and continued until 21:47:09. Ten of the seismographs used during the HGW3 survey did not record data.

Data Analysis for Guided-Wave Survey HGW2

Guided waves from the HGW2 survey were not easily identified because of high cultural-noise levels along Profile HW2 (North Argyle Avenue). In addition, heavy traffic along the overpass (Highway 101) over North Argyle Avenue, as well as heavy traffic on Hollywood Boulevard and subway trains, appear to be the major sources of noise that significantly reduced the signal-to-noise ratio of the HGW2 data. However, with approximately 157 stacked shots, the S-wave and later arrivals can be identified from data derived from the southern part of the HGW2 survey (fig. 17). From those data, we measured the PGV of the data from about 0.8 to about 2.0 s. The highest PGV values appear to be concentrated near Carlos Avenue and south of Yucca Street (figs. 18*A*, *B*) for the HGW2 survey. Although we urge extreme caution in evaluating the PGV of guided waves from such noisy data, the data suggest that guided waves may have been recorded south of Carlos Avenue and south of Yucca Street. The relatively high PGV values near Carlos Avenue and Yucca Street occur at times consistent with those expected for guided waves, traveling at about 50 percent of the apparent V_S.

We also evaluated data north of Yucca Street, but the noise levels from the Highway 101 overpass were so high that we did not include those data in this report. We also observed relatively high PGV values between Yucca Street and Highway 101, but owing to the high cultural-noise levels, we have little confidence that the high PGV values are derived from guided waves. Thus, we suggest that the guided waves recorded on the HGW2 survey are indeterminate with respect to faulting and that performing a survey later at night, when cultural and highway noises are less prevalent, might have been more determinate.

Data Analysis for Guided-Wave Survey HGW3

We acquired the HGW3 survey with the source at SP2 (First Presbyterian Church of Hollywood parking lot) and the recording array located along Profile HW2 (North Argyle Avenue). Data from the HGW3 survey also are very noisy (fig. 18) owing to the same noise sources described above for the HGW2 survey. It appears that those noise sources were even greater than was observed during the

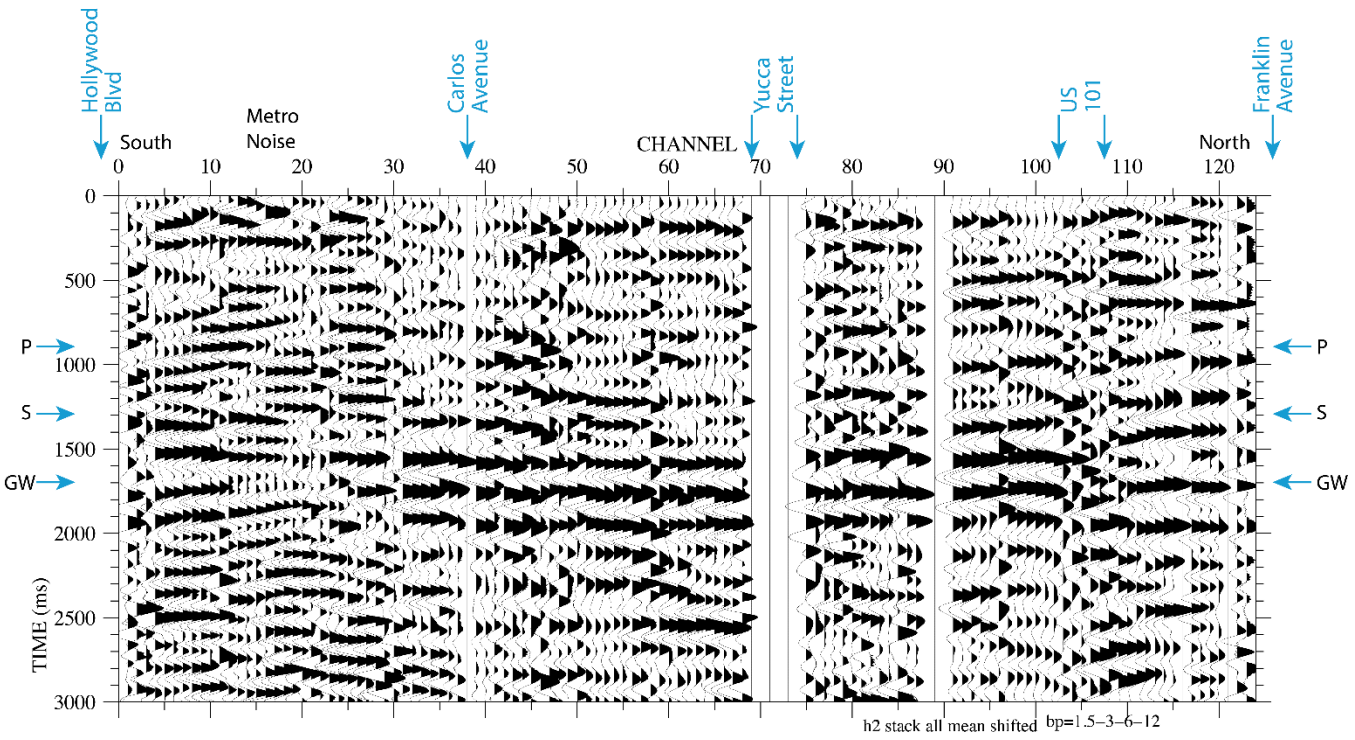

Figure 17. Stacked guided-wave shot gather for Profile HW2 (guided-wave survey HGW2). Source is located at SP1; recording array is located along Profile HW2. Source and recording array are separated by about 560 m. High levels of cultural noise, which are prevalent before the P-wave arrival, are shown on shot gather, especially between channels 1 and 30 and near channel 105. Such high levels of cultural noise make it difficult to evaluate guided waves. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1.5 and 12 Hz. Locations of nearby streets are shown. Other abbreviation: ms, millisecond(s).

HGW1 survey, possibly because there was less traffic during the 21:00 hour time frame, which may have allowed for faster moving vehicles and greater overall noise.

With 151 shots stacked, the main S-wave and apparent guided waves were difficult to identify on the shot gather (fig. 19). However, from the stacked data, we measured PGV values for the part of the survey that was south of Yucca Street (figs. 20*A*, *B*, *C*, *D*). We observe high PGV values in nearly the same location as seen from the HGW2 seismic survey, particularly south of Carlos Avenue and south of Yucca Street. However, we also observe high PGV values slightly north of Hollywood Boulevard, which are likely attributable to noises from the subway and from traffic on Hollywood Boulevard because the travel times are inconsistent with those expected for guided waves. In contrast, the high PGV values south of Carlos Avenue and south of Yucca Street occur at the approximate time expected for guided waves when the source is located at SP2.

Tomography, MASW, and Reflection Results for Profile HW2

We acquired an in-line, active-source P-wave seismic survey (HRR3) along Profile HW,2 using P-wave shots and vertical-component sensors that were attached (via refraction cables) to two Geometrics RX-60, multichannel seismographs. Unlike the guided-wave surveys (HGW2 and HGW3), we did not deploy sensors north of Yucca Street owing to the difficulty in deploying cables across Yucca Street; thus, the HRR3 survey was only about 200 m long. We used 66 vertical-component sensors and 63 AWD shot points for the HRR3 seismic survey. The AWD shots and sensors were colocated (1.5 m lateral offset) and spaced at 3-m intervals. The data were recorded for 2 s at a sampling

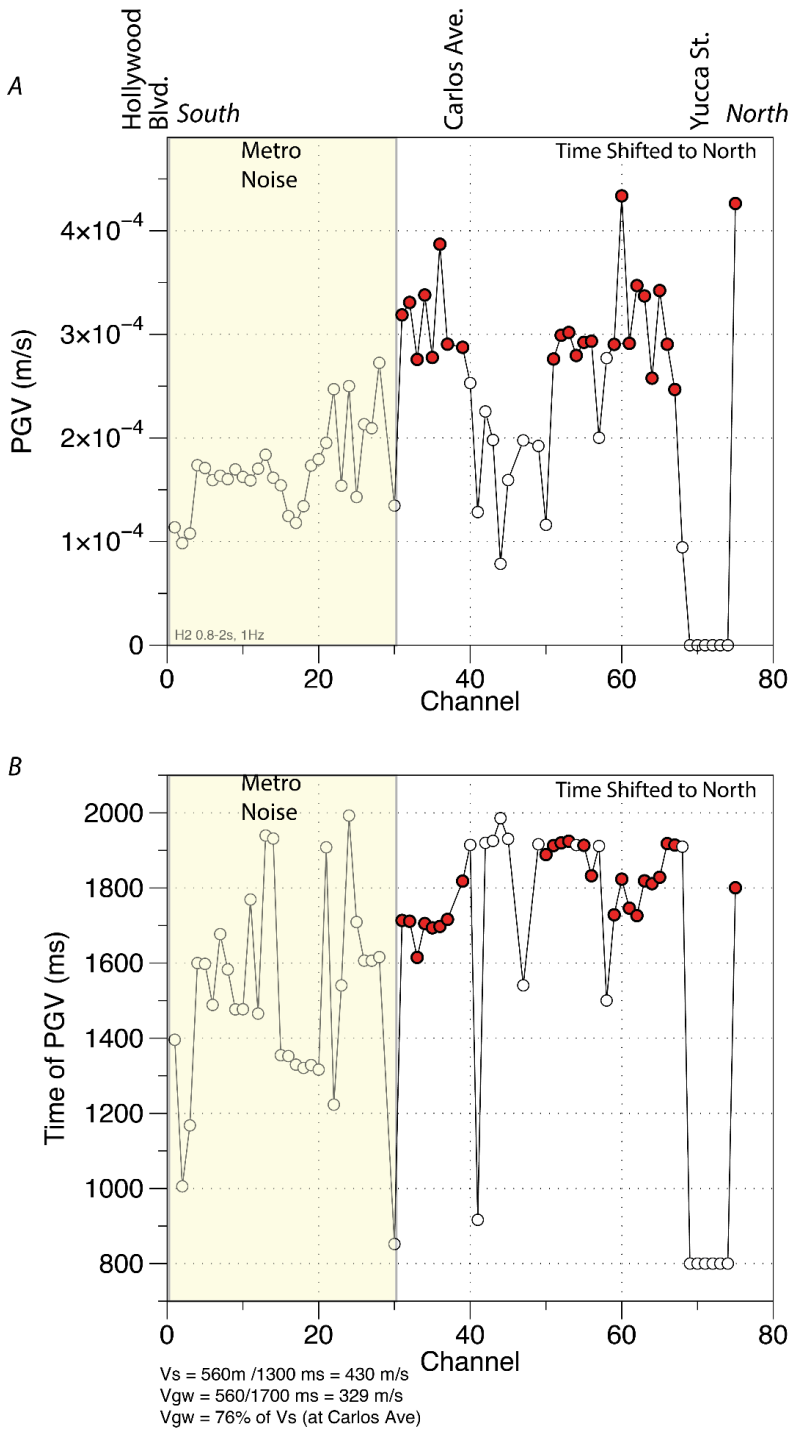

Figure 18. *A*, Plot of peak ground velocities (PGV) of guided waves for each recording channel along part of Profile HW2 (guided-wave survey HGW2), showing locations of nearby cross streets. Owing to high levels of cultural noise from Highway 101 north of Yucca Street, PGV values for channels north of Yucca Street were deleted from plot. Yellow shading highlights channels that have high levels of cultural noise south of Carlos Avenue (see fig. 17). *B*, Plot of travel times from SP1 to Profile HW2. Travel times on north end of Profile HW2 were shifted to allow analysis within a limited time window, as higher propagation velocities on north end of profile resulted in shorter travel times. High PGV values on PGV plot correlate with delayed travel times on travel-time plot. Although contaminated with noise, high PGV values (red dots) may infer possible fault locations along profile HW2. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

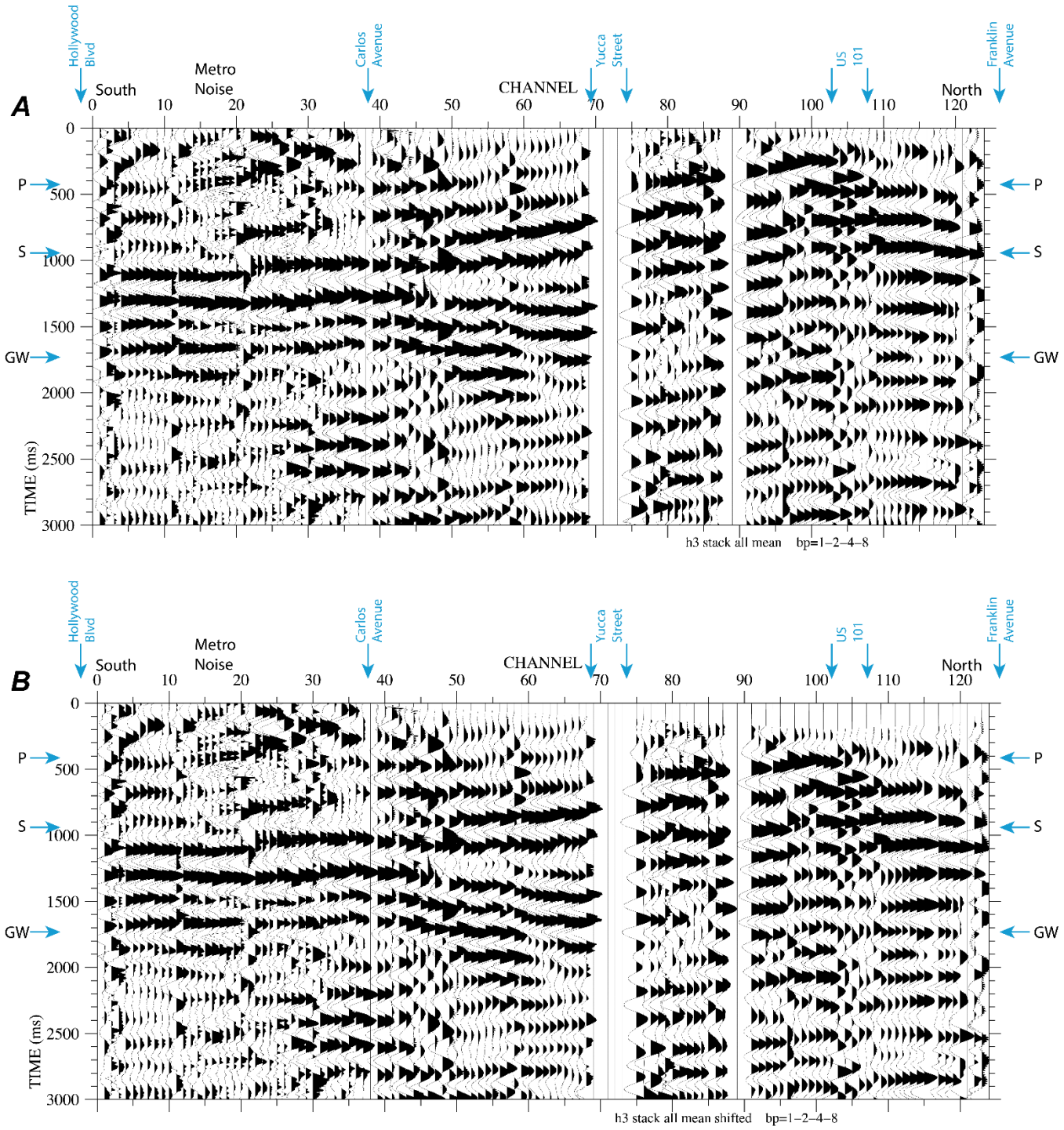

Figure 19. Stacked guided-wave shot gathers for Profile HW2 (guided-wave survey HGW3), showing (*A*) without time shifts to account for differences in propagation velocities and (*B*) with time shifts to account for differences in propagation velocities. Source was located at SP2: recording array was located along Profile HW2. There is about 350 m between the source and the recording array. High levels of cultural noise, which are prevalent before P-wave arrival, are shown on shot gather, especially between channels 1 and 30 and near channel 105. Such high levels of cultural noise make it difficult to evaluate guided waves. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1.5 and 12 Hz. Locations of cross streets are shown. Other abbreviation: ms, millisecond(s).

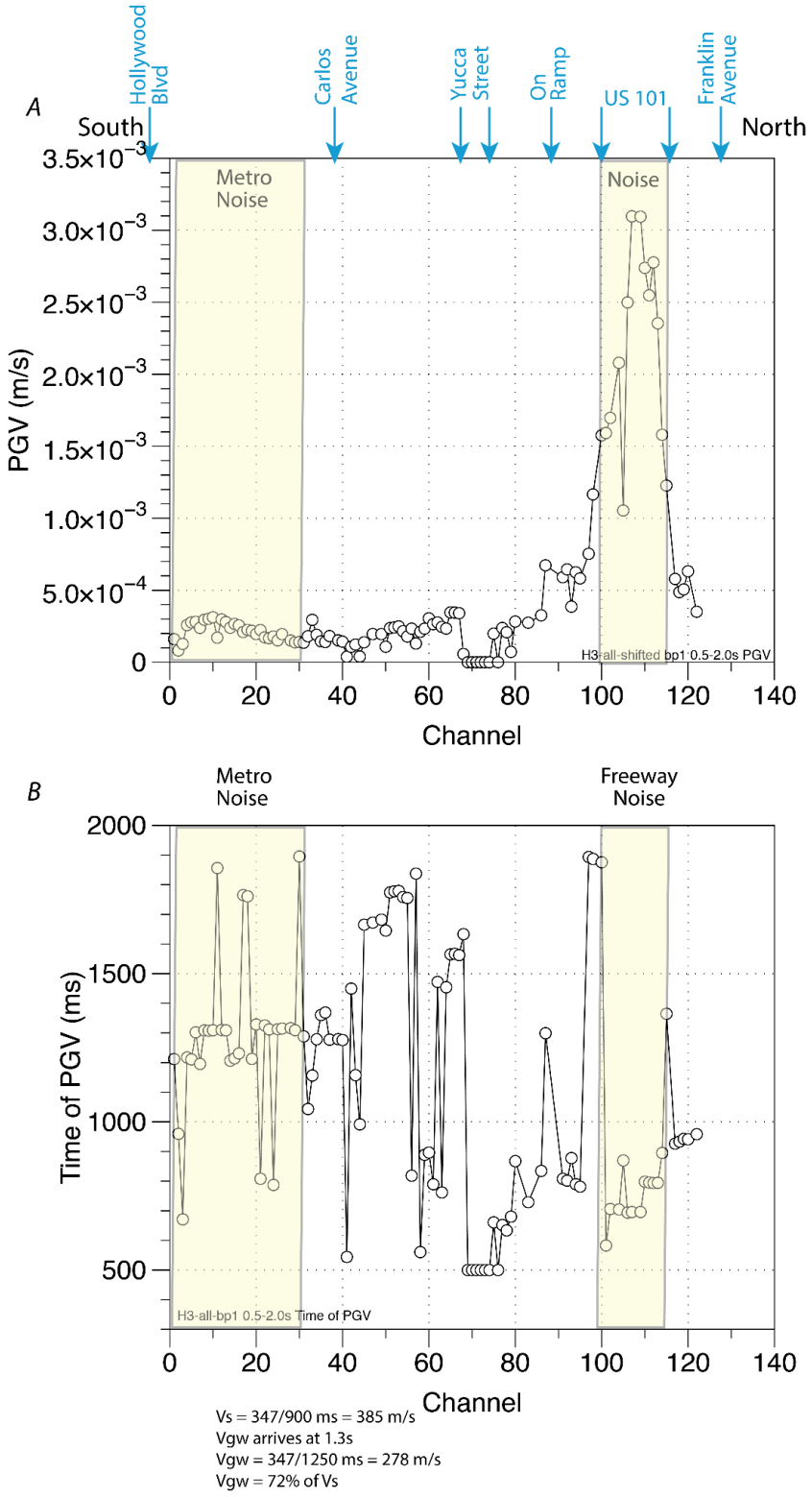

Figure 20. *A*, Plot of all peak ground velocities (PGV) of guided waves for each recording channel along part of Profile HW2 (guided-wave survey HGW3), showing locations of nearby cross streets. *B*, Travel times of PGV values shown in *A*. Extremely high PGV values centered near Highway 101 have travel times and velocities that are inconsistent with those expected for guided waves; thus, we suggest that very high PGV values observed for stations near Highway 101 result from freeway noise and not from guided waves; most other PGV values along Profile HW2 are much lower. Slightly higher values are seen on channels 1 to 30, and those higher values may

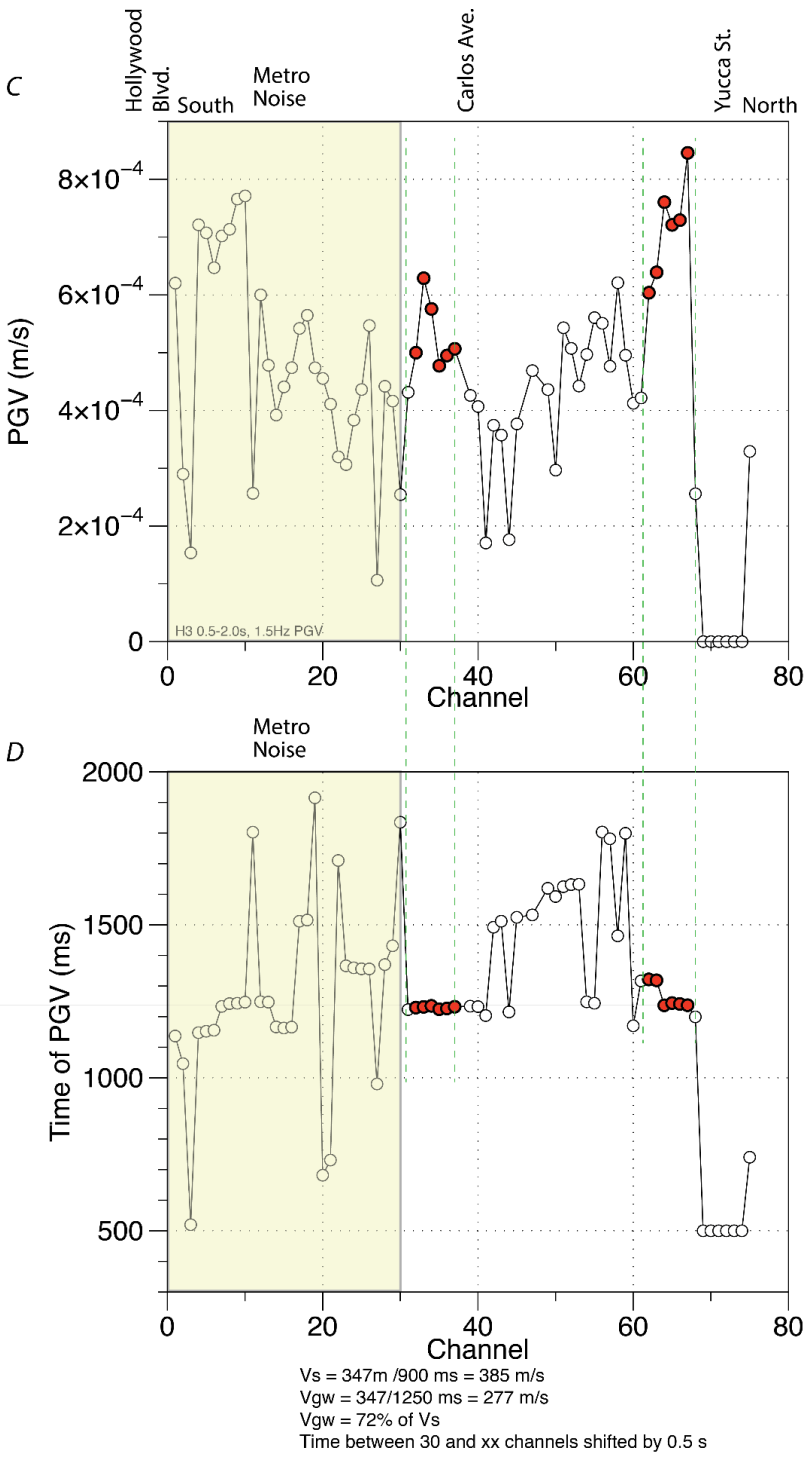

Figure 20 (cont.) result from cultural noises (cars or subway); however, travel times for slightly higher PGV values are generally in time frame expected for guided waves. C, Plot of PGV of guided waves along part of Profile HW2 (guided-wave survey HGW3) south of Yucca Street. High cultural noise is prevalent for channels 1 to 30, making it difficult to determine whether higher PGV values in that range result from guided waves. D, Travel times of PGV values shown in C. Relatively high PGV values (red dots) slightly south of Carlos Avenue and south of Yucca Street have travel times and propagation velocities that are consistent with expectations of guided waves; thus, we suggest possible faulting at those locations (see dashed green lines). Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

rate of 0.5 ms. Cultural-noise levels were high along North Argyle Avenue at the time of data acquisition, and the resulting shot gathers were noisy (fig. 21). As a result, we evaluated V_S data that were derived from the surface-wave (Rayleigh wave) data using the MASW technique (fig. 22). Combining the tomographic V_P and the MASW V_S data, we evaluated V_P/V_S ratios and Poisson's ratios along Profile HW2 (figs. 23, 24, respectively).

Profile HW2 V_P Model

We used the data from the HRR3 survey to develop a V_P model (fig. 22) for Profile HW2. The V_P values range from 400 m/s near the surface in the south to about 3,300 m/s at about 70 m depth near the center of the profile. An abrupt change in shallow velocities (~400 m/s) is observed at Carlos Avenue, with higher velocities to the north at shallow depths and progressively thicker lower velocity materials southward toward Hollywood Boulevard. The abrupt change in shallow V_P at Carlos Avenue is similar to the change in V_P seen along Profile HW1 at the apparent Hollywood Fault (fig. 7). The abrupt change in V_P along both Profiles HW1 and HW2 occurs coincident with the zone of apparent high PGV values seen from guided waves. A similar change in V_P also is observed just south of Yucca Street, where PGV of guided waves is locally high. Thus, both guided waves and V_P are suggestive of near-surface faulting slightly south (10–25 m) of the center of Carlos Avenue and about 20 to 35 m south of the center of Yucca Street.

Profile HW2 V_S Model (from MAS$_R$W)

From Rayleigh waves generated during the HRR3 seismic survey, we a developed MASW-based V_S model (fig. 23) for Profile HW2. Our V_S model shows that V_S ranges from 200 m/s near the surface

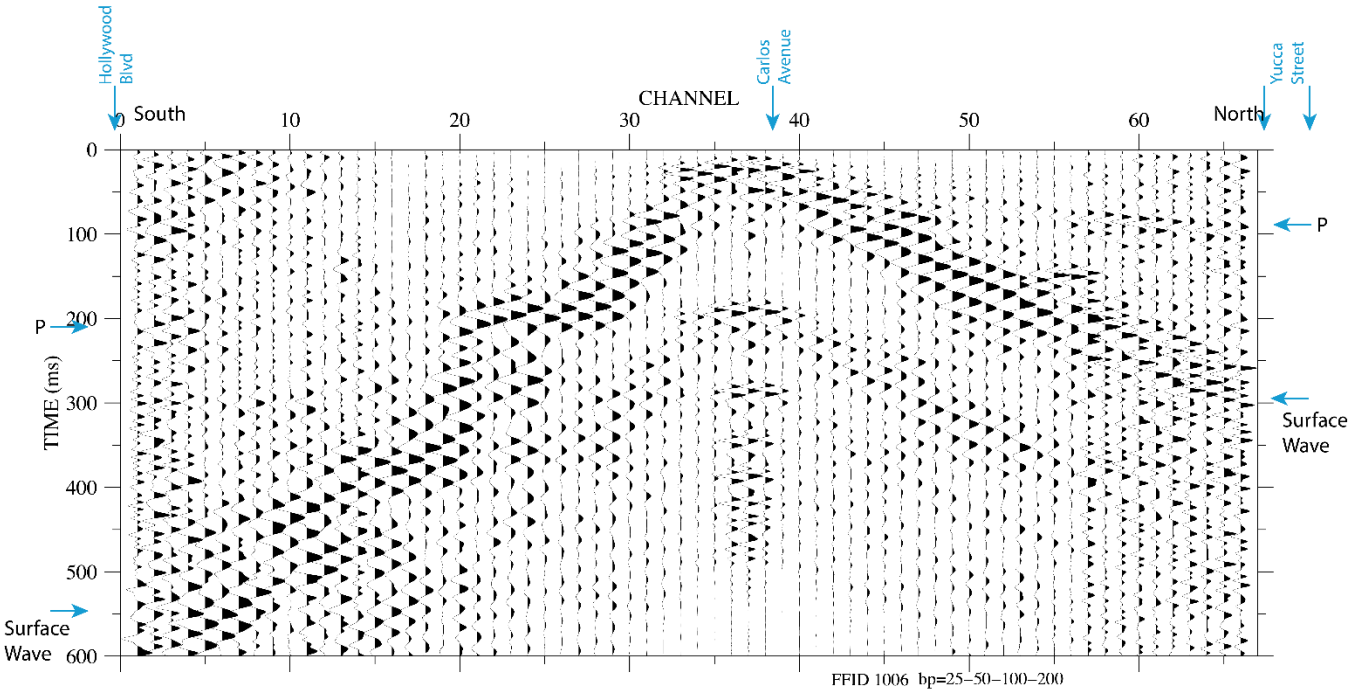

Figure 21. In-line P-wave shot gather along Profile HW2, south of Yucca Street. High cultural noise levels are particularly noticeable for channels 1 to 15. Multiples, owing to bouncing of seismic source (AWD), are prominent at travel times greater than 200 ms. Zone of asymmetric surface waves and refracted arrivals is present north and south of shot point, demonstrating large differences in structure to south versus to north. Locations of nearby streets are shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

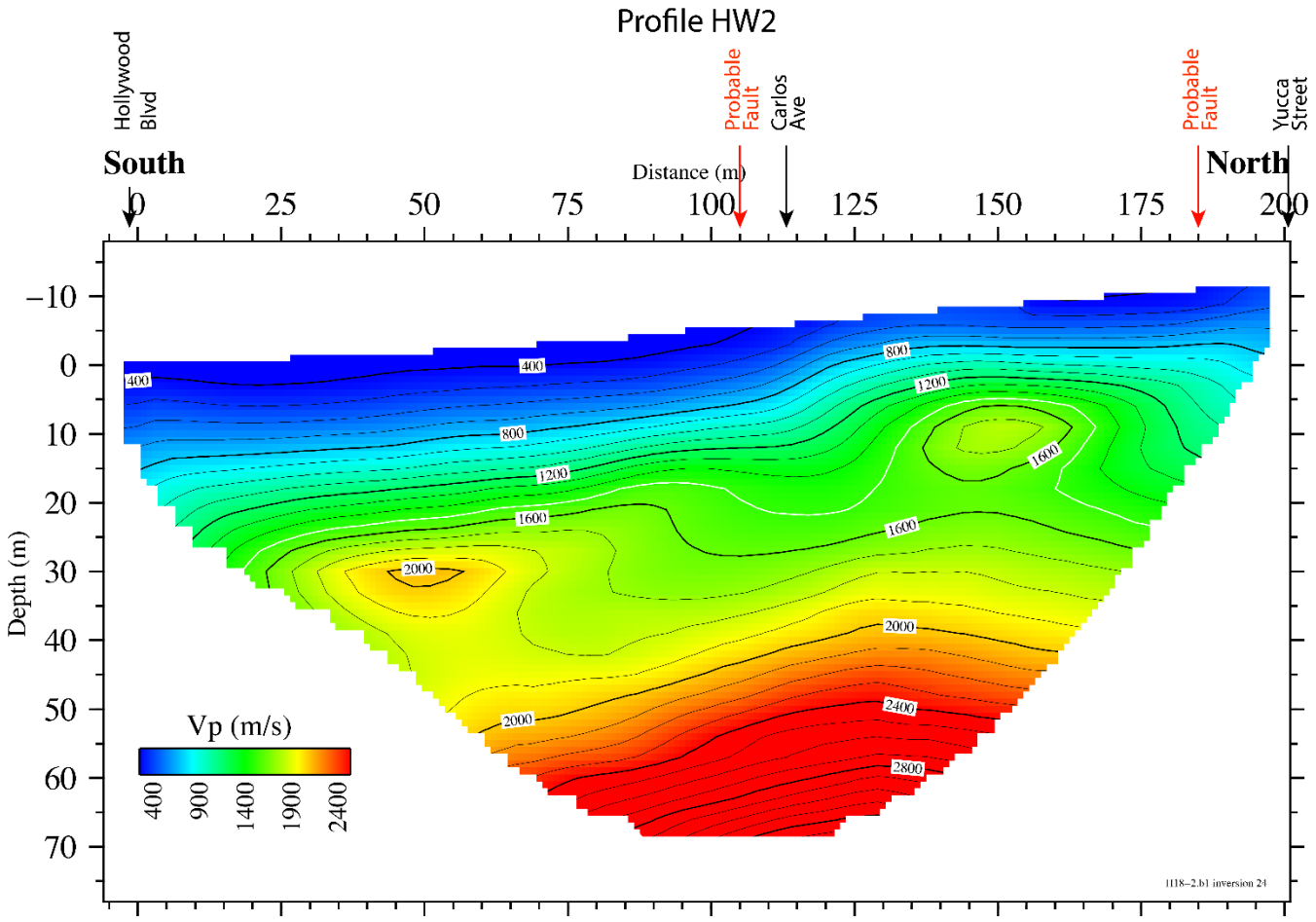

Figure 22. Tomographic P-wave velocity (V_P) model along Profile HW2, showing locations of cross streets. Prominent V_P anomalies are present along seismic profile, such as abrupt shallowing of 400-m/s velocity contour near Carlos Avenue. Similar change in velocity is observed at near-surface trace of Hollywood Fault along Profile HW1. This is also same location that relatively high PGV values are observed on guided-wave PGV plots (see fig. 20). We interpret second change in shallow-depth V_P south of Yucca Street, also consistent with guided-wave PGV values, to infer faulting. Other abbreviations: m, meter(s); s, second(s).

on the southern profile to about 675 m/s at about 30-m depth south of Carlos Avenue. From the south end of Profile HW2 (at Hollywood Boulevard) to approximately Carlos Avenue, a 7- to 10-m-thick zone of low-V_S (<300 m/s) materials is present in the near surface; this layer pinches out at Carlos Avenue in a manner similar to that seen in the tomographic V_P model (fig. 7). Between that 7- to 10-m-thick layer and the base of the model, V_S is high relative to the north end of Profile HW2. A major lateral transition in V_S is observed at all depths of the model, suggesting that a major change in structure is present, likely caused by faulting. Our V_S model also shows that a pronounced, southward-dipping, low-velocity zone is present south of Yucca Street, as was also inferred on the V_P model. This southward-dipping velocity structure may infer a southward-dipping fault south of Yucca Street. Both the V_P and V_S models suggest that an isolated zone of relatively high velocities is present near the surface between meters 130 and 160.

Profile HW2 V_P/V_S Model (V_P Tomography and V_S MASRW)

Using V_P from the tomography model (fig. 22) and V_S from the MASW-based model (fig. 23), we developed a V_P/V_S–ratio model (fig. 24) for Profile HW2. Our model suggests that V_P/V_S ratios range from about 1.5 near the surface south of Carlos Avenue to about 4.8 below 10 m depth between Carlos

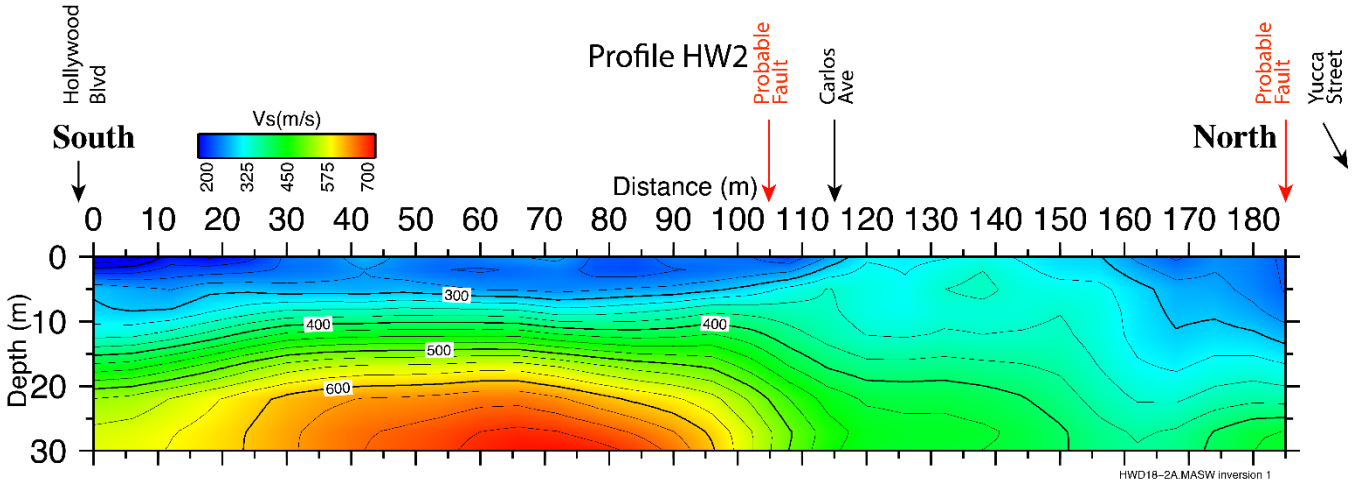

Figure 23. S-wave velocity (V_S) model along Profile HW2, inferred from Rayleigh waves using the multichannel analysis of surface waves (MASW) method. V_S model shows abrupt increase in V_S north of Carlos Avenue, with shallow structure similar to that modeled for V_P model. Higher velocities (>400 m/s) are abruptly terminated near Carlos Avenue, suggesting slightly northwestward dip of probable fault. Change in V_S also is observed south of Yucca Street, with prominent near-vertical low-velocity zone, inferring possible southwestward dip of fault there. Locations of nearby streets are shown. Other abbreviations: m, meter(s); s, second(s).

Avenue and Yucca Street. The zone of highest V_P/V_S ratios is relatively wide near the top and decreases in width with depth, which suggests that two opposing faults join at depth. Thus, on the basis of our V_P, V_S, and V_P/V_S models, we suggest a northward-dipping fault near Carlos Avenue and a southward-dipping fault south of Yucca Street.

Profile HW2 Poisson's Ratio Model (V_P Tomography and V_S MAS$_R$W)

Using the same V_P and V_S models as used to develop our V_P/V_S–ratio model, we developed a Poisson's ratio model for Profile HW2 (fig. 25). The Poisson's ratio model infers a similar structure as that of the V_P/V_S–ratio model. Generally, subsurface materials in the upper about 20 m along Profile HW2 differ markedly from south to north, with the major change occurring at Carlos Avenue. This lateral variation in Poisson's ratio values suggests a significant change in shallow-crustal properties that are likely related to groundwater saturation. Because faults usually act as groundwater barriers, this pronounced lateral change in Poisson's ratio is consistent with the presence of a fault near Carlos Avenue. The highest Poisson's ratio values along our model are confined to a zone between Carlos Avenue and Yucca Street, which would be consistent with bounding faults near Carlos Avenue and slightly south of Yucca Street.

Summary of Seismic Indicators of Faulting along Profile HW2

We evaluated five seismic models along Profile HW2, including (1) PGV of guided waves from two source locations, (2) tomographic V_P, (3) MASW V_S, (4) hybrid tomography/MAS$_R$W V_P/V_S ratios, and (5) hybrid tomography/MAS$_R$W Poisson's ratios. All of these models show prominent changes in shallow-depth structure near Carlos Avenue and slightly south of Yucca Street that are consistent with shallow faulting in those locations. We interpret these images as indicating a shallow-depth, northward-dipping fault near Carlos Avenue and a shallow-depth, southward-dipping fault south of Yucca Street, with both faults merging in the shallow subsurface.

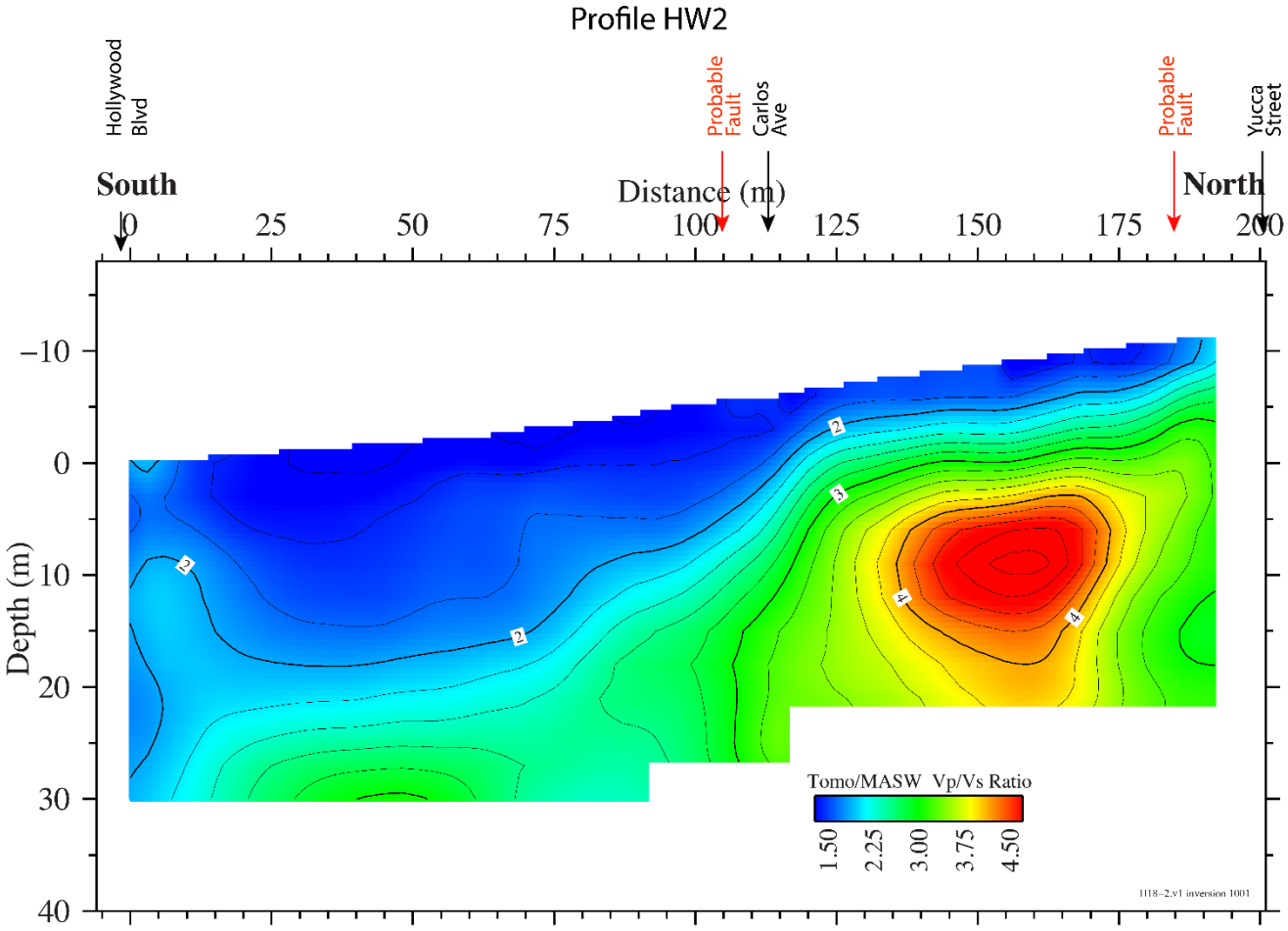

Figure 24. V_P/V_S ratio model along Profile HW2, derived from combination of our V_P tomography model and our MASRW V_S model. Shallow-depth, abrupt changes in V_P/V_S ratios are present in vicinity of Carlos Avenue and south of Yucca Street. Prominent V_P/V_S-ratio high is present at slightly greater depths between two abrupt changes in V_P/V_S ratios. This structure can be interpreted as showing two opposing fault traces. Locations of nearby streets are shown. Abbreviation: m, meter(s).

Summary of Observations, Hollywood Fault

We evaluated 13 seismic models and data combinations along Profile HW1 at the First Presbyterian Church of Hollywood parking lot (fig. 3). All of those data are consistent with near-surface faulting near meter 106 of Profile HW1, slightly south of Carlos Avenue. On the basis of the combined seismic data, we interpret the fault to slightly splay near the surface, having both northward and southward dips at shallow depths but a northward dip at depth. On the basis of the location of the fault identified in core borings and CPT transects at the Hollywood Courthouse building and our observed location along Profile HW1, we suggest that the fault strikes about N. 87° E. and has variable dips in the shallow subsurface. However, on the basis of the unmigrated reflection images, we suggest that the fault dips slightly northward at depth.

We evaluated five seismic models and data combinations along Profile HW2 along North Argyle Avenue in Hollywood. All of those data are consistent with, but not definitive of, near-surface faulting slightly south of Carlos Avenue and south of Yucca Street. Furthermore, additional fault traces may be

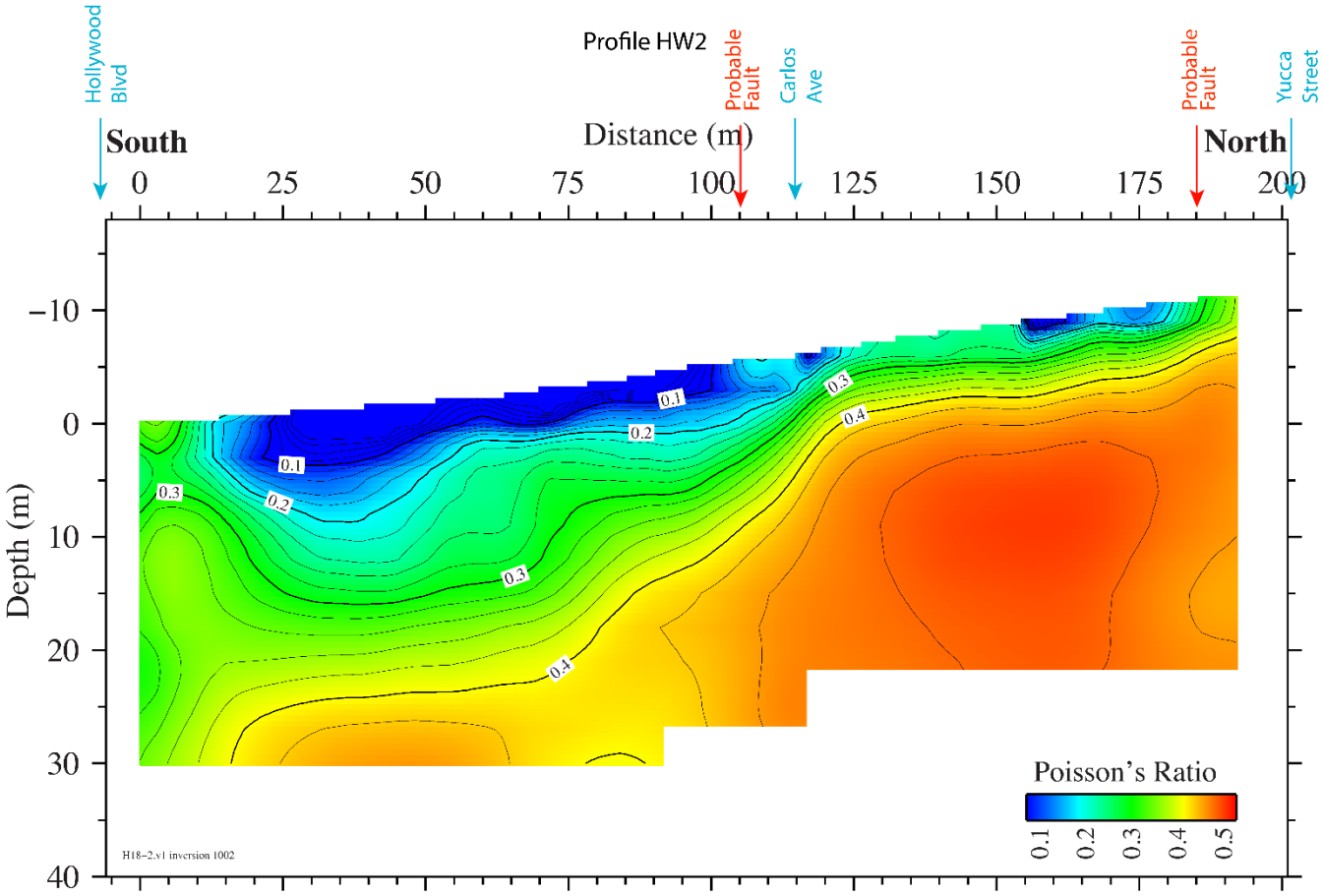

Figure 25. Poisson's ratio model along Profile HW1, derived from combination of our V_P tomography model and our MASRW V_S model. Shallow-depth, abrupt changes in Poisson's ratios are observed in vicinity of Carlos Avenue and south of Yucca Street. Prominent Poisson's-ratio high is present at slightly greater depths between two abrupt changes in near-surface Poisson's ratios, which we interpret as a highly saturated zone between two faults. Locations of nearby streets are shown. Abbreviation: m, meter(s).

present along Profile HW2, but the high levels of cultural noise in our data make it difficult to infer faulting elsewhere along North Argyle Avenue. On the basis of the fault locations along Profiles HW1 and HW2 inferred from our data, we suggest that this strand of the Hollywood Fault strikes almost due east-west between the core boring/CPT transect at the Hollywood Courthouse and our seismic profile along North Argyle Avenue. Although traces of the fault may have variable dips in the shallow subsurface, we suggest that the overall dip is near vertical, with a slightly northward dip at depth.

Santa Monica Fault Data Acquisition (Beverly Hills)

On May 26, 2018, and on June 6, 2018, we conducted guided-wave seismic surveys across the suspected near-surface trace of the Santa Monica Fault in Beverly Hills, Calif. The recording array for both seismic surveys was located on the east side of Lasky Drive, between Moreno Drive and Santa Monica Boulevard (fig. 26). We refer to this profile as Profile BH1, and we refer to the two individual surveys as BHGW1 and BHGW2.

Survey BHGW1 was about 300 m long and consisted of approximately 149 recording sites, but six of the sites were not used because they would have blocked driveways. The data from survey BHGW1 were recorded on 4.5-Hz horizontal-component sensors, spaced at 2-m intervals, but data were not recorded at 20 sites owing to instrumental failures. The sampling rate was 2 ms. The seismic source

Figure 26. Google Earth image of Santa Monica Fault in our study area in Beverly Hills, showing locations of seismic surveys (BHGW1, BHGW2) recorded along Profile BH1 (cyan line). Scale (in meters [m]) is included along Profile BH1. Seismic sources were generated at SP1 and SP2 (red stars) at the near-surface trace of Santa Monica Fault, as inferred from geologic mapping. Recording arrays for BHGW1 and BHGW2 surveys were located in same place, except that BHGW2 survey extended farther north by about 50 m. Red arrows show zones where high PGV values (that have travel times consistent with guided waves) were recorded.

(227-kg AWD) used to generate guided waves was located approximately 30 m southwest of Century Park East and about 100 m southeast of Santa Monica Blvd, within an alley northwest of a parking garage. The first AWD shot started on May 26, 2018, at 21:42:05 (local time; 04:42:05 UTC), and the last shot was completed at 22:24:46 (local time; 05:24:46 UTC) on the same day. We stacked a total of 198 individual shots to form a guided-wave shot gather.

We decided to acquire a second seismic guided-wave survey (BHGW2) along Laskey Drive on June 6, 2018, when we discovered that the expected fault crossing was at the approximate north end of the BHGW1 survey, near the intersection of Lasky Drive and Charleville Boulevard. The recording stations for the BHGW2 survey were in the same locations as that of the BHGW1 survey, but the length (350 m) of the recording array for BHGW2 was slightly longer (fig. 26). Profile BH2 consisted of 174 recording stations, but recorders were not deployed at 13 stations because they would have blocked driveways. We used the same sensors (4.5-Hz), station spacing (2 m), and sampling rate (2 ms) for the

BHGW2 survey as was used for the BHGW1 survey. However, the seismic source (SP2) for the BHGW2 survey was located at SP2, about 80 m southwest of Heath Avenue and about 130 m southeast of Santa Monica Boulevard (fig. 26). The first shot started on June 6, 2018, at 22:05:42:36 (local time; 05:42:36 UTC), and the last shot was completed at 23:01:37 (local time; 06:01:37 UTC). A total of about 198 AWD shots were generated. Owing to instrumental failures, we did not obtain data from 19 of the 174 seismic recorders.

Santa Monica Fault Data Analysis

The seismic sources for the BHGW1 seismic survey were located about 500 and 647 m southwest of the southernmost and northernmost ends of Profile BH1, respectively (fig. 27). We chose this site (SP1) to generate seismic sources because it was the location of a previous coring and CPT transect, in which an active trace of the Santa Monica Fault was identified. Because the source was not centered with respect to the recording array, a difference in travel time from the south end to the north end of the array was observed. To evaluate the PGV of the guided waves within the same time window, the "moveout" of the travel time was removed by shifting the time of the more distant arrivals on the north end of the profile. Thus, the actual travel time of the guided waves on the north end of the recording array was greater by about 500 ms than what is shown in figure 27.

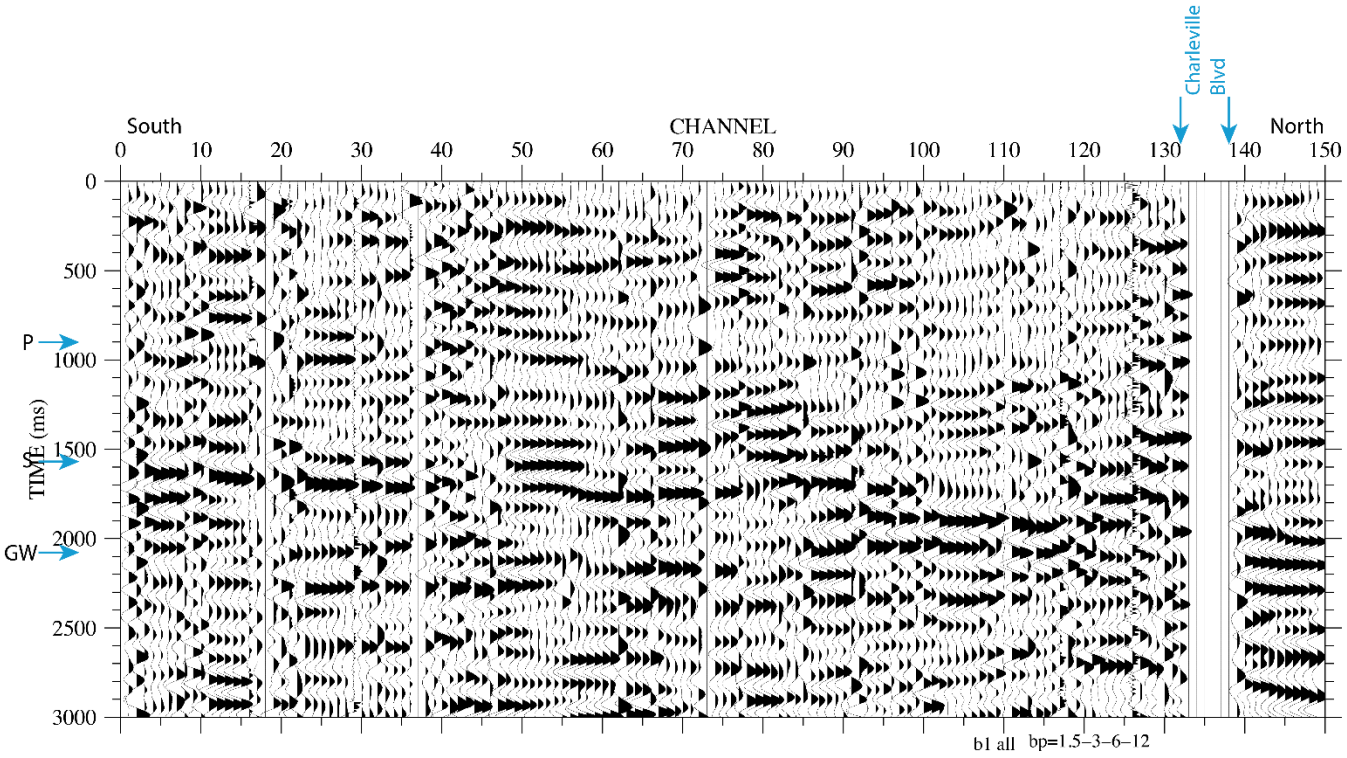

Figure 27. Stacked guided-wave shot gather for BHGW1 seismic survey. Source is located at SP1; recording array is located along Profile BH1 (distance between source and recording array ranges from about 500 to about 650 m). Long propagation distance and high level of cultural noise resulted in poor signal-to-noise ratios. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1.5 and 12 Hz. Location of Charleville Boulevard is shown. Other abbreviation: ms, millisecond(s).

Guided-Wave Data Analysis for Profile BH1

The signal-to-noise ratio of the data acquired during the BHGW1 seismic survey was low (fig. 27) owing to excessively high cultural-noise levels during the ~21:00- to ~22:00-hour local time frame on May 26, 2018, which was a Saturday evening. However, even with the low signal-to-noise ratios, we were able to evaluate PGV of guided waves (fig. 28) within the time frame (>1.5 to 3 s) expected for shear-wave and guided-wave arrivals. On the basis of travel time and amplitude, we infer the presence of low-velocity guided waves south and north of Charleville Boulevard and possibly near the south end of Profile BH1. The observed high values of guided-wave PGV (fig. 28*A*) correlate with the expected guided-wave travel times (fig. 28*B*). Our data show that the highest PGV values arrived at the recording array at about 2,500 ms (2.5 s; ~0.5 s added to arrivals on the north end of the profile shown in fig. 28*B*), and because the source was approximately 650 m from apparent fault zone, this suggests that the guided waves traveled at about 250 m/s. The earliest shear waves arrived at the recording array at about 1,500 ms (1.5 s), suggesting an average V_S of about 330 m/s. These velocities suggest that the guided waves travel at about 75 percent of the velocity of the shear wave. Along Profile BH1, the most prominent high values of PGV are observed between channels 60 and 150 (between meters 118 and 298) of the recording array, which extends from slightly south to slightly north of Charleville Boulevard (fig. 28).

Beverly Hills Profile BH2 Guided-Waves

The signal-to-noise ratios of the data from the BHGW2 seismic survey (fig. 29) were higher than those of the data recorded for the BHGW1 survey. As a result, the shear-wave and guided-wave arrivals are more apparent on the BHGW2 data. The higher signal-to-noise ratios may have resulted from stronger signals because the seismic source (SP2) was closer to the recording array, but the higher ratios may also have resulted from lower cultural-noise levels present later in the evening (~22:00 to ~23:00 local time). Lower noise levels also were likely on a Wednesday evening (June 6, 2018) than on a Saturday evening.

From the data obtained during the BHGW2 seismic survey, we evaluated PGV values of guided waves from the time of the shear-wave arrival (~1 s) to about 3.2 s (includes a 0.5-s time shift on the north end of the profile; see fig. 30). Our PGV values are averaged over three consecutive arrivals to limit large variations from a single arrival. On the basis of travel time and amplitude, the low-velocity guided waves appear easy to identify. High-PGV values (fig. 30*A*) correlate with the expected guided-wave travel times (and velocities) along Profile BH2 (fig. 30*B*). Our data show that the highest PGV values arrived at the recording array at 2,000 to 2,500 ms (2.0–2.5 s; includes the time shift), and, using distance from the source (368–510 m) to the fault traces, we found that the guided waves traveled at about 185 to 200 m/s. These guided-wave velocities are lower than those estimated for the BHGW1 survey because of the greater distance and deeper propagation depth of guided waves between SP1 and the BHGW1 recording array. The earliest shear wave for the BHGW2 survey arrived at the recording array at about 1,500 to 2,000 ms (1.5–2.0 s), suggesting an average V_S of about 245 to 255 m/s. This suggests that the guided wave travels at about 75 to 78 percent of the velocity of the shear wave.

Along Profile BH2, the most prominent late-arriving, high-PGV values are seen at stations (channels) 120 to 135 (meters 238–268) and 145 to 152 (meters 288–302) of the recording array; these stations were located in the vicinity of Charleville Boulevard, suggesting that prominent fault traces are present in that area. However, late-arriving, locally high PGV values also were observed near stations 11 to 28, 78 to 82, and 95 to 102. The high-PGV values observed at these stations also coincide with late arrivals that are consistent with guided waves. Similarly PGV-value zones also were seen on the BHGW1 survey, which were contaminated with cultural noise. Because of the consistent travel-time delays and high amplitudes, we suggest that each of the high-PGV values listed above likely are fault related. Because of the prominent PGV peaks and observed travel times (velocities) near Charleville Boulevard, we suggest that those probable faults are the ones most directly connected to the fault trace at

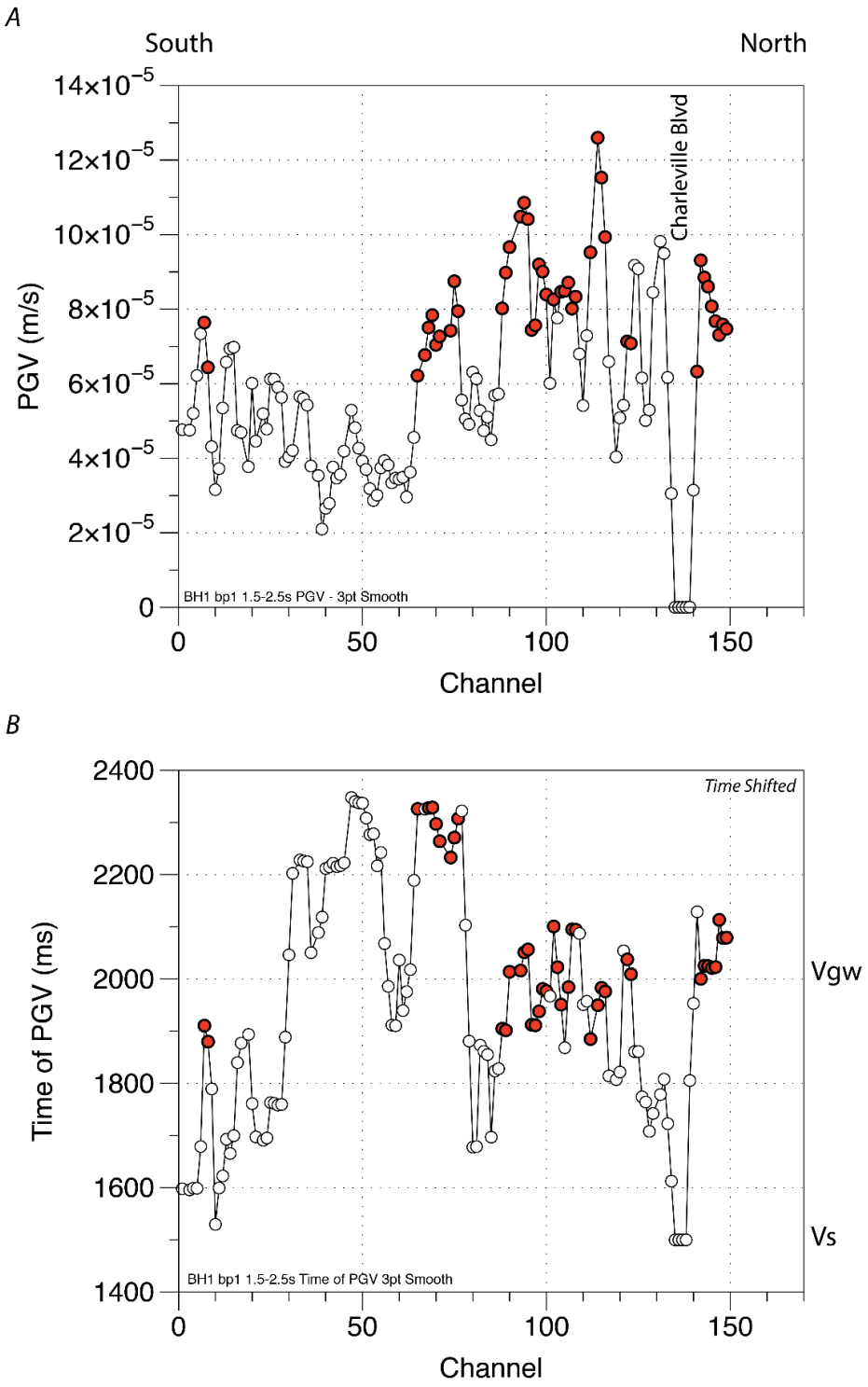

Figure 28. *A*, Plot of peak ground velocity (PGV) of guided waves for each recording channel along BHGW1 survey. Highest PGV values (red dots) were concentrated on north end of recording array, both north and south of Charleville Boulevard; indications of relatively high values also are present at several locations along Lasky Drive. *B*, Plot of time of arrival of corresponding PGV values shown in *A*. Note that highest PGV values coincide with delayed phases that arrive at about 1.9 to 2.1 seconds (s) or more (after 0.5-s time shift applied). Arrival times have been shifted downward on north end of profile by about 0.5 s relative to south end of profile. Owing to low signal-to-noise ratios for BHGW1 survey, uncertainty is high in possible fault traces. Location of Charleville Boulevard is shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

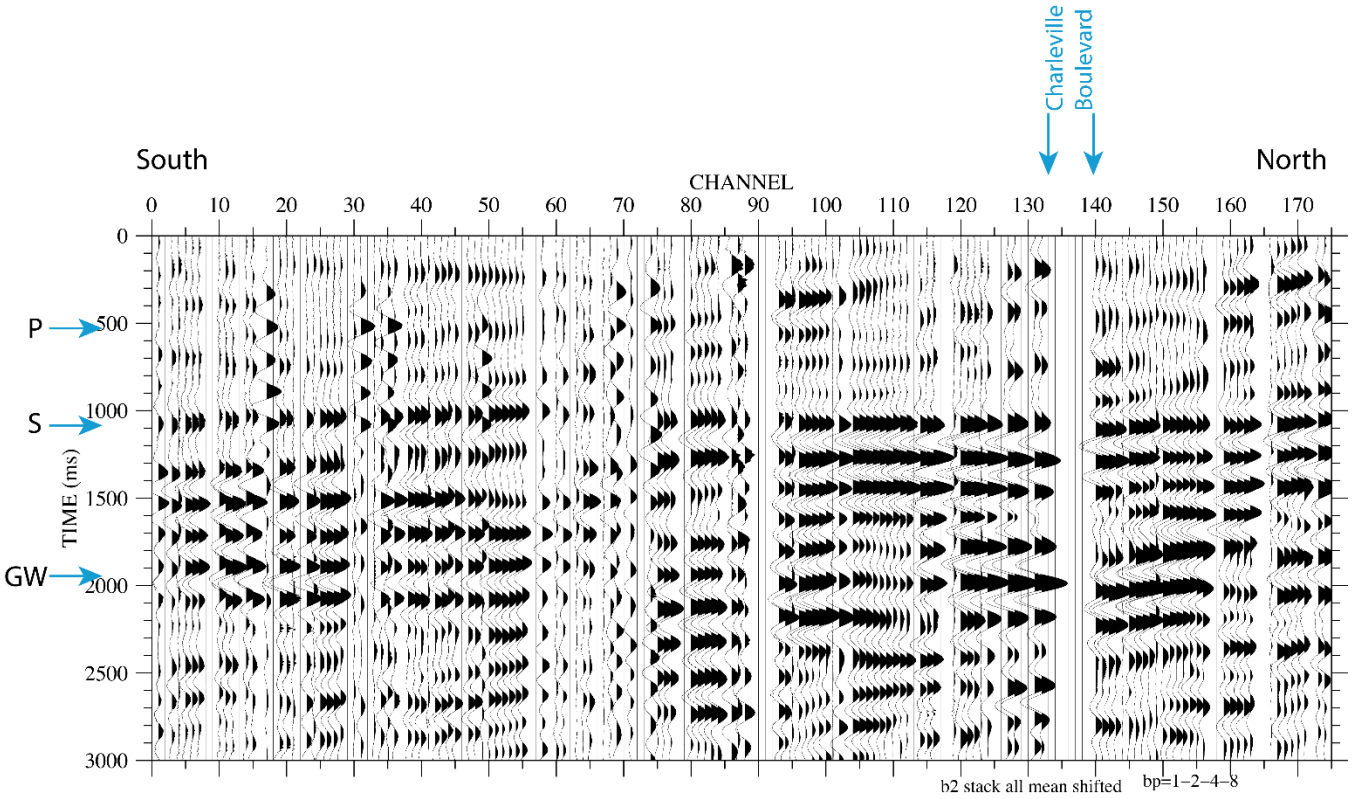

Figure 29. Stacked guided-wave shot gather for Profile BH2. Source is located at SP2; recording array is located along Profile BH1 (distance between source and recording array ranges from about 370 to about 510 m). Shorter propagation distance and lower cultural-noise levels resulted in higher signal-to-noise ratios than recorded for BHGW1 survey. P waves (P), S waves (S), and guided waves (GW) are inferred on shot gather. Data were band-pass filtered between 1 and 8 Hz. Location of Charleville Boulevard is shown. Other abbreviation: ms, millisecond(s).

the seismic source (SP2). The probable fault traces near Charleville Boulevard also are likely to be near-surface traces. Because multiple high-PGV zones are present along the BHGW2 survey, we suggest that the near-surface Santa Monica Fault is distributed along several traces along Lasky Drive.

Summary of Observations, Santa Monica Fault, Beverly Hills

We acquired only guided-wave data along Lasky Drive in Beverly Hills because we did not have the requisite permission to conduct in-line, active-source surveys. Additionally, we had little direct knowledge of the location of traces of the Santa Monica Fault where we could place our seismic sources. As a result, we conducted two guided-wave seismic surveys along Lasky Drive. Before conducting the first survey (BHGW1), we did not realize that one of the main traces of the Santa Monica Fault may have been located near the intersection of Charleville Boulevard and Lasky Drive, which was the north end of the BHGW1 survey. Upon learning of this possible location of the fault trace, we chose to conduct a second survey (BHGW2) that extended northward of the possible fault trace.

The signal-to-noise ratios of data from the BHGW1 survey were low, but the data from that survey appear to be consistent with probable faulting north and south of Charleville Boulevard. In addition, the data indicate that additional distributed faulting may be present along Profile BH1, particularly south of Charleville Boulevard. However, because of the low signal-to-noise ratios of the data, we have lower confidence in the data from the BHGW1 survey.

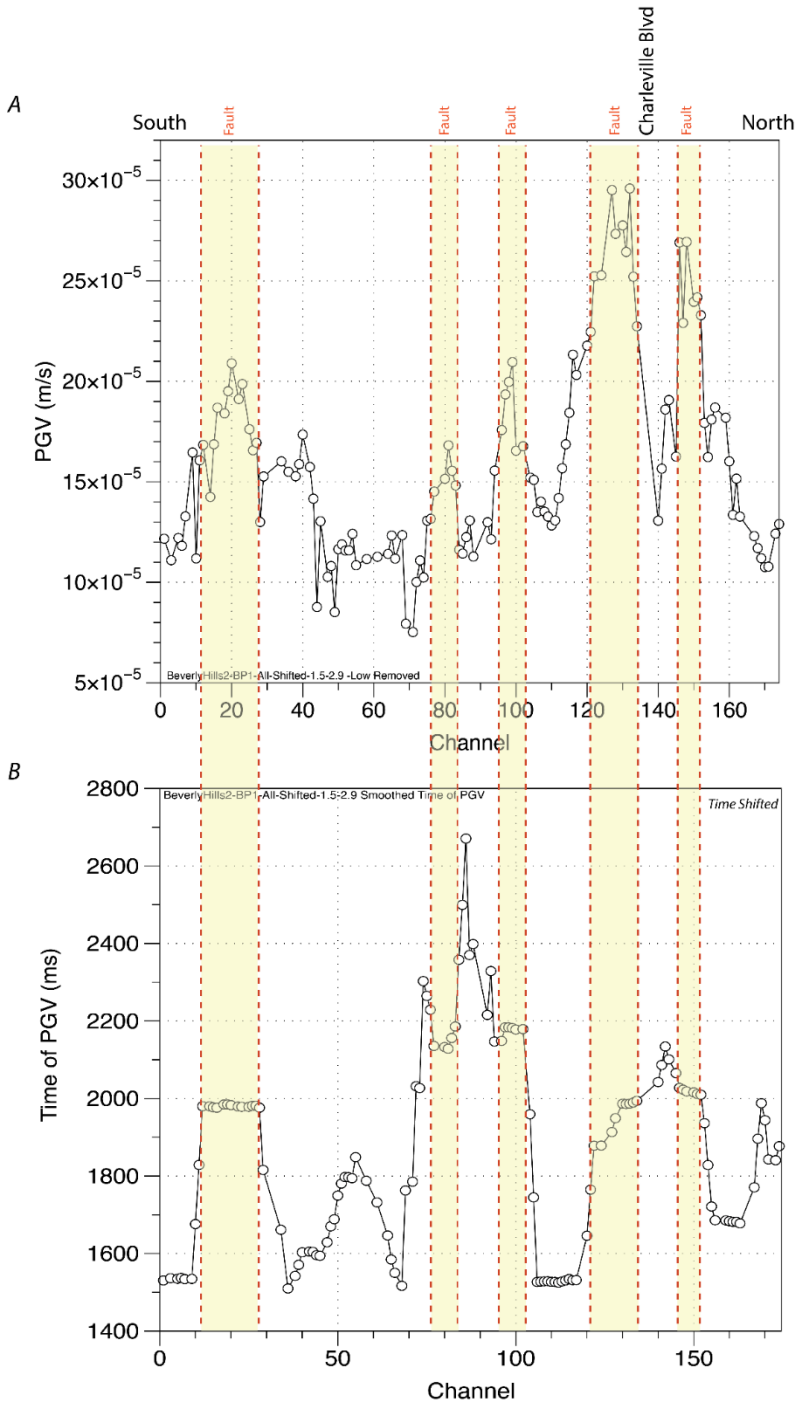

Figure 30. *A*, Plot of peak ground velocity (PGV) of guided waves for recording channels along BHGW2 survey. Because data were not recorded for some stations and because some sensors were not leveled when deployed, we opted to average each PGV value relative to the two closest PGV values to obtain a more stable result. High-PGV values (yellow shading) were concentrated along several locations along Lasky Drive; highest PGV values are near Charleville Boulevard. *B*, Plot of time of arrival of corresponding PGV values shown in *A*. Arrival times have been shifted downward on north end of profile by about 0.5 second (s) relative to south end of profile. Highest PGV values coincide with delayed phases that arrive at about 2 s or more (shifted time), consistent with guided waves, suggesting prominent faulting near Charleville Boulevard, but additional faulting appears to be present at areas along the profile (yellow shading). Location of Charleville Boulevard is shown. Other abbreviations: m, meter(s); ms, millisecond(s); s, second(s).

Data from the BHGW2 survey contained much higher signal-to-noise ratios, and the BHGW2 data also are indicative of faulting near the intersection of Charleville Boulevard and Lasky Drive. In addition, the BHGW2 data also are consistent with the presence of as many as three other fault traces along Lasky Drive. Importantly, all five of these high-PGV zones can be inferred on both the BHGW1 and BHGW2 data (figs. 28, 30). Thus, we suggest that distributed shallow-depth faulting likely is present at several locations along Lasky Drive.

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EXHIBIT D

Ninyo & Moore, Hollywood Courthouse Fault Investigation (2015)

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

SUPPLEMENTAL FAULT RUPTURE HAZARD EVALUATION
HOLLYWOOD COURTHOUSE
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DRAFT

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California
Geological Survey

June 15, 2015
Project No. 402132007

June 15, 2015
Project No. 402132007

Mr. Scott Shin
Judicial Branch Capital Program Office
Design and Construction Unit
2255 North Ontario Street, Suite 220
Burbank, California 91504

Subject: Supplemental Fault Rupture Hazard Evaluation
Hollywood Courthouse
5925 Hollywood Boulevard
Los Angeles, California

Dear Mr. Shin:

DRAFT

In accordance with your request, we have performed a supplemental fault rupture hazard evaluation for the Hollywood Courthouse at 5925 Hollywood Boulevard in Los Angeles, California. We previously prepared a fault rupture hazard evaluation report dated February 24, 2015 for the proposed improvements to the existing courthouse. The purpose of this study was to further evaluate the potential for faulting south of the existing building and to provide preliminary design recommendations for a new building. This report presents our findings and conclusions regarding the presence of faulting underlying the area south of the existing building.

Ninyo & Moore appreciates the opportunity to be of service on this project.

Respectfully submitted,
NINYO & MOORE

James J. Barton, PG, CEG
Senior Geologist

Lawrence Jansen, PG, CEG
Principal Geologist

Daniel Chu, PhD, PE, GE
Chief Geotechnical Engineer

JJB/LTJ/DC/mlc/sc

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Appendices

Appendix A – Boring and Core Logs
Appendix B – Cone Penetrometer Testing (Gregg Drilling)
Appendix C – Laboratory Testing

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1. INTRODUCTION

In accordance with your request, we have performed a supplemental fault rupture hazard and geotechnical evaluation for the Administrative Office of Courts (AOC), Hollywood Courthouse located at 5925 Hollywood Boulevard in Los Angeles, California (Figure 1). We previously performed a fault rupture hazard and geotechnical evaluation for proposed improvements to the existing courthouse, the results of which were presented in the referenced reports dated February 24 and March 16, 2015. The purpose of this study was to further evaluate the potential for faulting south of the existing building.

Based on our previous work, possible active faulting was discovered near the center of the building (Figure 2). The possible faulting was based on our interpretation of discontinuities in the stratigraphy in the alluvial soils underlying the existing building. The offset deposits were considered to be late Pleistocene to early Holocene in age. The subject property and location of the possible faulting is near the active Hollywood fault zone mapped by the California Geological Survey (2014). In order to confirm the presence and activity of the possible faulting under the building, additional exploration would be involved.

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As an alternative to the proposed remodel improvements, we understand that a new building is being considered for the existing parking lot south of the building (away from the suspected zone of faulting). The proposed structure may consist of an approximately 48,000 square feet, two to four-story building with a slab-on-grade foundation. Plans are not available at the time of this report.

For the purpose of this report, we have included data from our previous study to provide an understanding of the subsurface conditions across the property. Depending on the details of the new structure, an update geotechnical evaluation report will be provided at a later date.

2. SCOPE OF SERVICES

Our geologic services have included the following:

- Planning and coordination of our activities with AOC and review of our previous work.

- A site reconnaissance to evaluate the current conditions and mark out proposed boring locations.

- Coordination with Underground Service Alert to locate underground utilities prior to site excavations. In addition, a utility locator surveyed the locations of proposed exploration for potential conflicts with underground utilities.

- Subsurface exploration utilizing a truck-mounted drill and direct push rigs and a cone penetrometer testing rig. Two small-diameter borings were drilled with a truck-mounted drill rig up to a depth of approximately 51½ feet, two 1¼-inch-diameter borings were continuously cored up to a depth of approximately 52 feet and ten cone penetrometer tests (CPTs) were performed up to a depth of approximately 75 feet south of the existing building.

- Review of subsurface data with our Technical Advisor, Dr. Thomas Rockwell, to evaluate the soil stratigraphy, soil age, and potential for faulting.

- Laboratory testing including moisture-density, percentage of particles finer than No. 200 sieve, Atterberg limits, Proctor density, shear strength and corrosivity.

- Geologic and geotechnical analysis of the field and laboratory data.

- Preparation of this report including our findings and conclusions regarding potential fault rupture hazards.

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3. SITE DESCRIPTION

The Hollywood Courthouse is situated on a rectangular property between Carlos Avenue and Hollywood Boulevard (Figure 1). The site latitude and longitude are approximately 34.1023 degrees north and 118.3187 degrees west, respectively (Google, 2014). Topographically, the property generally slopes to the south from an elevation of approximately 407 feet above Mean Sea Level (MSL) adjacent to Carlos Avenue to approximately 395 feet MSL adjacent to Hollywood Boulevard. Surface drainage is currently diverted to storm drain systems.

The property is occupied by a two-story concrete and wood-frame building partially over one-level of underground parking. The finish floor elevation of the building is approximately 402.4 feet MSL (K. Kenshi Nishimoto & Associates, 1984). The parking portion of the structure extends from the northern end of the building to Carlos Avenue with a parking level near the street grade over a lower level that slopes toward the building from a finish surface elevation of

approximately 397 feet MSL to approximately 391 feet MSL (Figure 2). The east and west sides of the building and parking garage are situated along the property lines.

The site of the possible future building is occupied by an asphalt-paved parking lot south of the building and adjacent to Hollywood Boulevard. Adjacent buildings and screen walls are present east and west of the courthouse as well as adjacent to the sidewalk along Hollywood Boulevard. Some landscaping is present in front of the building and within the parking lot near Hollywood Boulevard.

Neighboring properties include residential housing and offices of the Salvation Army to the west and residential properties to the east and north. Commercial properties border Hollywood Boulevard.

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4. BACKGROUND

The property was previously used as a parking lot until the time the current building was constructed around 1984 (Historical Aerial Photos, 2015). According to a preliminary soils investigation report prepared by T.K. Engineering Corporation (1984) for the design of the building, the site was vacant at that time. The surface conditions reportedly consisted of broken asphalt concrete pavements and weeds. Based on review of older photographs and topographic maps, no significant structures or grading operations were evident at the site dating back to 1926. Highway 101, north of the site, was constructed sometime between 1952 and 1954. Grading was evident near the north end of the site in connection with the highway grading as well as the future extension of Carlos Avenue to Bronson Avenue (Figure 1). Historically, the neighboring properties were primarily residential with some commercial development along Hollywood Boulevard.

The preliminary soils investigation by T.K. Engineering (1984a) included eight borings up to a depth of approximately 31 feet. Recommendations for deep foundations and remedial earthwork were provided. The investigation did not include a fault hazard evaluation. At that time, the consultant concluded that, based on available geotechnical literature, no active faults were known to be present at the site.

Grading for the project included cuts up to approximately 10 feet along the northern portion of the site and minor cuts and fills along the southern portion of the site (Figure 2). Some remedial earthwork was performed, which included removing and recompacting the near surface soils to a depth of approximately 4 feet (T.K. Engineering, 1984b).

Based on our review of foundation plans prepared by K. Kenshi Nishimoto & Associates (KNA), dated October 9, 1984, the building is supported on 30-inch-diameter piers with grade beams. The parking garage is supported on spread footings. The piers along the southern portion of the building reportedly were designed to extend to depths of approximately 35 feet with an allowable bearing capacity of 123 kips. The spread footings for the garage portion of the building complex were designed for 10-foot-square footings at a depth of approximately 2 feet with allowable bearing capacity of 2,000 pounds per square foot (KNA, 1984).

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Based on our research of geotechnical literature at the Los Angeles Department of Building and Safety (LADBS), a geotechnical evaluation was performed by Law/Crandall, Inc. (LCI) for a development west of the site, the results of which were presented in a report dated April 21, 1993. The proposed development was part of a three-phase construction project within the existing Salvation Army facility. The phases included a three-story new youth center, an eight story residential building with grade level parking, and a two-story gymnasium building with a basement and a pool. The geotechnical evaluation included nine borings up to a depth of approximately 50 feet. No detailed fault hazard evaluation was performed. Based on the geologic findings of the geotechnical evaluation, LCI reported that no faults are known to exist at the site (LCI, 1993).

Several fault hazard evaluations have been recently performed by Group Delta approximately 0.4 miles west of the site (Figure 3). Based on the data by Group Delta and additional research, the California Geological Survey (CGS) updated the fault map of the Hollywood Quadrangle. A discussion of the findings by Group Delta and others are presented in Sections 7.4.1 and 7.4.2 of this report.

5. GEOLOGIC CONDITIONS

5.1. Regional Setting

The project site is located along the southern edge of the Hollywood Hills, the eastern extension of the Santa Monica Mountains within the Transverse Ranges, an east-west trending system of mountains that developed in response to north-south compression that began 2.5 to 5 million years ago (Dolan et al., 1997). The mountains exhibit an asymmetric anticlinal structure, which has been interpreted as a fault propagation fold above a gently north-dipping blind thrust fault (Dolan et al., 1997). A series of faults define the southern boundary of the Transverse Ranges including the Hollywood fault. The fault juxtaposes Cretaceous-age basement rock, consisting of quartz diorite and predominantly Miocene volcanic and sedimentary rocks of the Santa Monica Mountains, against Quaternary and Tertiary sedimentary rocks to the south. The Hollywood fault is also the northern boundary of the Hollywood basin, an asymmetric basin structure that is bound on the south by the North Salt Lake fault (CGS, FER 253, 2014a). The base of the mountains in the area of the site, also known as Hollywood Hills, is incised by several drainage tributaries resulting in the deposition of Late Pleistocene to Holocene-aged alluvial fan deposits along the southern flank of the range.

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5.2. Geomorphology

A review of topographic maps and aerial photographs dated 1926, 1928, 1931, 1948, 1952, 1954, 1964, 1972, 1977, 1980, 1989, and 1994 was performed to evaluate the geomorphic expression of landforms within and adjacent to the subject property. Features such as lineaments and abrupt changes in topography and/or vegetation were evaluated with regards to their potential of being related to faulting.

The east-west trending uplifted Hollywood Hills dominate the regional geomorphology of the site and vicinity. Older topographic maps (United States Geological Survey [USGS], 1948) show sharp breaks in the topography at the base of the hills north and west of the site indicating the locations of possible fault scarps. Prior to development, the ground surface across the site was relatively flat, sloping gently to the south. No lineaments or indications

of fault related features were observed at the site including the parking lot south of the existing building. A vegetation lineament and/or possible fault scarp was reported by others near the north end of the site along Carlos Avenue (CGS, FER 253, 2014a). In addition, a deflection of a north-south drainage tributary was also reported farther north of the site, as shown on Figure 4 and observed in a 1928 photograph.

Based on our review of photographs dated 1948 and 1952, it appears that around 1952, some grading was being performed for the future extension of San Carlos Avenue and the new highway (US 101). Based on our review of a 1948 topographic map, no clear indication of a fault scarp is evident at the north end of the site.

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5.3. Site Geology

The geology of the site is characterized by gently sloping alluvial fan deposits of Holocene age to late Pleistocene age (Figure 5). The alluvial fan deposits are underlain by Tertiary age formational siltstones of the Modelo Formation. The alluvial deposits are expected to be more than 70 feet thick under the site. A detailed description of the alluvial deposits encountered during our field exploration is presented in Section 9; Field Evaluation.

5.4. Groundwater

Groundwater was not encountered during our evaluation, which included borings and CPT soundings up to approximately 75 feet in depth. In addition, groundwater was not encountered in the previous subsurface exploration on site by TK Engineering, which included borings drilled up to depths of approximately 31 feet. Based on review of the State of California Seismic Hazard Evaluation (1998), the historical high groundwater level mapped at the site is 80 feet or more below the ground surface. Data presented by the County of Los Angeles Department of Regional Planning's Safety Element (1990) indicate that perched groundwater and/or the groundwater level may be approximately 30 or more feet below the ground surface. It should be noted that fluctuations in the level of groundwater at the subject site will occur due to variations in ground surface topography, subsurface stratification, rainfall, irrigation practices, and other factors which may not have been evident at the time of our evaluation.

6. FAULTING

6.1. Regional Fault Setting

The site is located in a seismically active area, as is the majority of southern California. Figure 6 shows the approximate site location relative to major faults in the region. The major structural boundary between the Pacific and North American tectonic plates traverses southeast to northwest through California, with the Pacific Plate moving to the northwest relative to the North American plate. Most of this movement occurs along the northwest trending San Andreas fault zone; movement is also accommodated by east-west trending, reverse, oblique-slip and left lateral strike slip faults within southern California, including the Hollywood-Santa Monica fault system. Table 1 lists selected principal known active faults that may affect the site. The maximum moment magnitude (M_{max}) and approximate fault-to-site distances were calculated using the USGS web-based program (USGS, 2008).

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Table 1 – Principal Active Faults

Fault	Approximate Fault to Site Distance in miles[1] (km)	Maximum Moment Magnitude[1] (Mmax)
Santa Monica-Hollywood	0.31 (0.50)	7.4
Hollywood	0.53 (0.86)	6.7
Elysian Park	1.4 (2.3)	6.7
Puente Hills	4.9 (7.9)	7.0
Raymond	5.6 (9.0)	6.8
Newport-Inglewood	5.8 (9.3)	7.2
Verdugo	6.1 (9.8)	6.9
Sierra Madre	10.5 (16.9)	7.2
Malibu Coast	12.9 (20.8)	6.7
Northridge	14.7 (23.7)	6.9

Notes:
[1] USGS, 2008.

6.2. Alquist-Priolo Earthquake Fault Zoning Act

As presented in the California Division of Mines and Geology, Special Publication 42, the 1972 Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to delineate

"Earthquake Fault Zones" (EFZs) along known active faults in California. The law also requires building setbacks to be established from the trace of an active fault. EFZs must meet the requirements of being "sufficiently active" (evidence of movement within the last approximate 11,000 years) and "well-defined" (detectable by a trained geologist). It is known that faults often rupture along a complex zone that may include the movement of multiple splays/strands rather than of a single strand. The EFZs are intended to be sufficiently wide enough on both sides of a known active fault to include these known or unknown splays/strands of the fault. The purpose of the act was to prohibit the location of most structures for human occupancy across the traces of active faults, thus mitigating the hazard of fault rupture.

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6.3. Historic Earthquakes

In historic times, no large earthquakes have occurred within the Los Angeles Basin that have been attributed to the Hollywood fault. Some of the more significant events within 100 kilometers of the site are listed below.

- In December 1812, a magnitude 7.3 earthquake occurred along the San Andreas fault between Pallet Creek and Wrightwood, approximately 42 miles northeast of the site, and may have extended to San Bernardino. The northern part of this section of fault ruptured again in 1857, with rupture from Parkfield southeast to about the I-15.

- On March 10, 1933, a magnitude 6.4 earthquake, "the Long Beach Earthquake," occurred offshore of Newport Beach along the Newport Inglewood fault (approximately 33 miles south of the site) (Hauksson and Gross, 1991). Over 200 aftershocks, generally magnitude 4.0 or less, followed the main event. The earthquake resulted in approximately 115 deaths and 40 million dollars of damage (USGS, 1993). This event resulted in the passing of the Field and Riley Acts of the California State Code for the design and construction of school structures and buildings larger than two-family dwellings, respectively.

- A magnitude 6.6 earthquake occurred on February 6, 1971 in San Fernando (approximately 22 miles northeast of the site) resulting in over 505 million dollars in losses and many changes in the building codes.

- On October 1, 1987, a magnitude 6 earthquake occurred in the Whittier Narrows area (approximately 14 miles southeast of the site) resulting in 358 million dollars in losses.

- On January 17, 1994, a magnitude 6.7 earthquake occurred in Northridge (approximately 15 miles northwest of the site) with 57 dead, more than 9,000 injured and about 40 billion dollars in property damage.

6.4. Hollywood Fault

The Hollywood fault extends approximately 9 miles (14 km) through Beverly Hills, West Hollywood and Hollywood to the Los Angeles River. The fault is truncated on the west by the north-northwest trending West Beverly Hills Lineament, which includes a left-step of approximately ¾ miles (1.2 km) between the Santa Monica fault and the Hollywood fault (Dolan et al., 2000). In the Los Angeles River floodplain, the fault is defined by a steep gravity gradient and steep drop in groundwater levels as the fault trends eastward toward the Raymond Fault (CGS, 2014a). The Hollywood fault contains five segments (Figure 7). The subject site is in an area near overlapping Segments 2 and 3, where there is a left (releasing) step-over between Segments 2 and 3 resulting in a pull-apart or sag between the two segments.

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The Hollywood fault is an active sinistral-reverse oblique strike slip fault with an average attitude of N76°E and dips ranging from 25 to 90 degrees to the north. A slip rate of 1 to 5 millimeters per year has been assigned to this fault (USGS, 2014b). Based on previous work by others, the Hollywood fault could produce an earthquake with a magnitude on the order of 6.7, or larger if it ruptures with the Santa Monica and/or Raymond faults. Geologic data suggests that the last movement along the fault was approximately 7,000 years ago (Dolan, et al., 2000). A probable minimum oblique-slip rate has been assumed at approximately 0.35 millimeters per year for the Hollywood fault, which yields a recurrence interval of approximately 4,000 years (Dolan, et al., 1997) if the fault ruptures on its own. No historical movement (less than 200 years) has been recorded on this fault.

The Santa Monica-Hollywood fault zone is a significant fault system that has long been recognized along the base of the Santa Monica Mountains. Due to dense urbanization, however, the location and activity of the fault system has been uncertain and subject to debate. Until recently, there was insufficient data for the CGS to classify the Hollywood

fault as an active EFZ. Based on recent studies, the Hollywood fault has been mapped by the State of California (2014) as an EFZ (Figure 8). A brief description of the recent fault studies is presented below.

6.4.1. Group Delta

Exploration of possible faulting at four potential building sites near the intersection of Argyle Avenue and Yucca Street was performed by Group Delta during the period of 2013 to 2014. Based on available data from the LADBS, the exploration consisted of several fault trenches up to approximately 35 feet in depth and cone penetrometer testing and continuous cores up to a depth of approximately 60 feet to evaluate for the presence and activity of faults. The reports by Group Delta (referenced) indicated various soil units within Holocene age alluvium overlying older (Pleistocene age) alluvial deposits and/or Tertiary age sedimentary deposits with some faulting within the older alluvium. Based on the detailed logging of the trenches and soil-age assessments, the upper Holocene age alluvial deposits extending to depths of approximately 27 to 30 feet were reportedly unbroken (Group Delta, 2014a). The age of the unbroken sediments were considered to be 12,000 to 15,000 years old. Group Delta concluded that faulting at these sites was considered to be older than 12,000 years old. Data presented by others farther west of these sites indicated the age of the younger alluvium of approximately 20,000 years old at depths ranging from approximately 21 feet to 38 feet below the ground surface (Dolan and others, 1997 and 2000).

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6.4.2. California Geological Survey FER 253

The Hollywood fault was previously evaluated for Holocene age active faulting as part of a 1977 study (Smith, 1978). At that time, the study concluded that there was insufficient evidence of Holocene faulting to recommend fault traces for zoning. Based on subsequent geologic and geotechnical studies, as well as paleoseismic and geomorphic studies by Dolan et al. (1997), Dolan et al. (2000), and other research, CGS re-evaluated evidence of Holocene displacement along traces of the Hollywood fault. Accordingly, CGS prepared Fault Evaluation Report 253, dated February 14, 2014. The

purpose of the report was to assess the location and activity of fault strands along the Hollywood fault within the Hollywood 7½ minute quadrangle. At that time, the faults determined to be sufficiently active (Holocene) and well-defined were zoned by the State Geologist as directed by the A-P Act of 1972 (Hart and Bryant, 2007). Prior to the report, CGS issued a preliminary fault map for public comment on January 8, 2014 showing the recommended Alquist-Priolo Earthquake Fault Zone (APEFZ) for the Hollywood quadrangle. Although the subject site was partially located within the zone, no traces of an active fault were mapped across the site at that time.

On November 5, 2014, a supplement was prepared to FER 253. The purpose of the supplement was to review and address the public comments as well as to review additional reports issued to CGS after the preparation of FER 253. The additional reports included the work Group Delta performed in the area west of the site. Based on the additional review, CGS revised the APEFZ map for the Hollywood quadrangle. The edge of the mapped zone clips a very small edge of the northwest side of the site (Figure 8).

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6.4.3. Ninyo & Moore

Ninyo & Moore previously performed a fault rupture hazard evaluation for the portion of the lot underlying the existing building (Ninyo & Moore, 2015a). The evaluation included four continuous cores and 14 CPTs up to a depth of approximately 74.2 feet within the interior of the west side of the building. Our previous subsurface exploration indicated that the site is underlain by generally gently-sloping stratigraphy with distinct depositional sequences that were repeated in each continuous core and CPT. However, the soil stratigraphy near the Holocene-Pleistocene contact included several discontinuities that suggest the possible presence of faulting beneath the existing building. A graben type structure with vertical offsets in the soil layers of up to approximately 3 feet is present near the center of the building complex between the 2-story building and the parking garage (Figures 9 and 10). Minor vertical offsets in the soil layers were also observed south of the graben structure. Due to the limited nature of

our evaluation, we were unable to evaluate for the possibility of horizontal displacements along these possible faults.

Based on our evaluation, there may be a potential for surface rupture to occur in the existing building area if the observed steps in stratigraphy are a result of faulting. Existing published data indicate that the Hollywood fault occurs as a series of short segments with step-over zones between the ends of individual segments. The subject site is located near the eastern end of Segment 2 of the fault, where the displacement along the fault is not considered to be as significant compared to displacement in the middle part of a segment, as is present to the west and north of the site. The data suggest that faulting, if present at the site, was probably associated with events near the late Pleistocene to early Holocene period.

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7. FIELD EVALUATION

In order to further evaluate the presence of faulting south of the building, we performed a subsurface evaluation utilizing direct push 1.75-inch-diameter continuous cores and CPTs at a spacing generally of approximately 12 feet along the west side of the property. The purpose of our subsurface evaluation was to: 1) evaluate the stratigraphy across the site for the possible presence of faulting, and 2) evaluate the subsurface soil and geologic conditions for the proposed building.

Our subsurface evaluation was conducted on May 11 and 12, 2015 and consisted of the drilling, logging, and sampling of two small-diameter borings to depths of approximately 51½ feet on the east side of the property, two direct push continuous cores to depths of approximately 52 feet and ten CPTs to depths ranging from approximately 75.1 to 75.8 feet along the west side of the parking lot, south of the building. The direct push continuous cores were located adjacent to a CPT location to aid in evaluating the stratigraphy and relative age of the soils.

Prior to the subsurface exploration, the exploratory locations were surveyed for potential utility conflicts. In addition, elevations at each exploratory location were checked with a manometer relative to an assumed elevation at a previous CPT location inside the building of 402.4 feet

MSL. The locations of each exploratory location were measured with a measuring tape from the south edge of the building. Logs of the exploratory borings and cores are presented in Appendix A. Logs of the CPTs are presented in Appendix B. The approximate locations of the borings and CPTs as well as the previous borings and CPTs are presented on Figure 9. For the purpose of this report, we have numbered the borings, cores and CPTs in a consecutive sequence to our previous borings, cores and CPTs.

Laboratory testing was performed to evaluate in-place moisture and density, percent of materials finer than the No. 200 sieve, Atterberg limits, Proctor density, direct shear strength, and soil corrosivity. Our laboratory test results are presented on the boring logs in Appendix A and in Appendix C.

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The cores were logged by our certified engineering geologists. After the field exploration, core samples and CPT logs were reviewed with Dr. Rockwell (paleoseismologist and professor of geology, SDSU) to evaluate the stratigraphy and age of soils. Direct push core samples were obtained at 4-foot intervals to provide relatively continuous lithology data. The percent recovery of the cores varied from approximately 33 to 100 percent. The CPTs provided a continuous profile of tip resistance and sleeve friction, which are correlated to general soil types. The CPT profiles were used to correlate the soil units underlying the site.

7.1. Geologic Units

The materials encountered during the subsurface exploration generally consisted of three geologic units; Fill soil, Holocene age alluvium and Pleistocene age alluvium. Brief descriptions of the units are presented below.

7.1.1. Fill

Fill soils were encountered in borings B-3 and B-4 and in cores C-5 and C-6 to a depth of approximately 4 feet. The fill soils were generally composed of brown, moist, loose, silty sand with scattered minor construction debris including brick fragments. The fill soils were generated during the prior grading and development of the property. Based on the material type and a compaction report by T.K. Engineering, dated December 3,

1984, the source of the fill soils were from on-site remedial excavations. According to the report, up to approximately 6 feet of fill is present at the site. The fill soils were reportedly compacted to 90 percent relative compaction.

7.1.2. Holocene age Alluvial Deposits

Holocene (younger) alluvial deposits were encountered in each boring and core location to depths ranging from approximately 39 to 41 feet. The younger alluvial deposits generally consisted of two subunits. In our previous report, we had included a third sub-unit (Subunit 3), which we now interpret to be the upper unit associated with the buried Pleistocene deposits. This change in interpretation is based on better core recovery in this evaluation which has allowed for a better analysis of the subsurface soils. Brief descriptions of the subunits are presented below.

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Subunit 1: Subunit 1 consists predominantly of thinly to crudely bedded, dark yellowish brown, moist, loose to medium dense, clayey and silty, fine- to coarse-grained sand and firm to stiff, sandy clay. Subunit 1 extended to depths of approximately 26 to 28 feet below original grade and exhibits scattered crude stratification.

Subunit 2: Subunit 2 consists predominantly of massive yellowish to dark yellowish brown, moist, loose to medium dense, medium to coarse grained, poorly graded sand with silt and gravel with interbedded clayey sand and sandy clay. Subunit 2 ranged in thickness from approximately 10 to 12 feet.

The age estimated for the younger alluvium was based on our review of samples and prior experience with soil age dating in the Los Angeles region; there were no recognizable soil horizons observed in these upper deposits at the locations explored except for the possible presence of some discontinuous and weakly formed horizons. In addition, carbon material or other datable material was not present in the younger alluvial sediments encountered. It is possible that weakly expressed soil horizons may have been present and not recovered in some cores, as core recovery was not 100 percent. Nevertheless, the absence of significant soil development along with reported

thick Holocene alluvium west of the site (Dolan et al., 2000 and Group Delta, 2014) strongly suggests that the upper 39 to 40 feet of alluvium is Holocene in age, with the possibility that the lowest portions are latest Pleistocene in age.

7.1.3. Pleistocene Age Alluvial Deposits

Pleistocene (older) alluvial deposits were encountered underlying the younger alluvium at each boring and core location to the depths explored. The older alluvium encountered on site was generally comprised of dark yellowish, strong brown and dark brown, moist, very stiff to hard sandy clay with interbeds of clayey and silty sand to the depths explored.

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The unconsolidated (Holocene age) alluvial deposits cap two buried soil profiles that represent substantial periods of non-deposition and surface exposure. Both soil profiles have similar characteristics, indicating that they may represent similar amounts of time in terms of surface exposure. These soil profiles were described and evaluated to estimate the age of the materials. Portions of the buried soil horizons, however, had been eroded or degraded. Accordingly, the following composite soil description of the soils generally encountered in the previous cores C-2 and C-3 are presented below. Similar soils were observed in the recent cores C-5 and C-6. The purpose of the composite description is to provide a more representative description of the soil sequence at the site for age purposes.

Subunit 3 in our previous report is now recognized as the buried A horizon associated with the top of the Pleistocene strata, and consists predominantly of massive, dark yellowish brown, moist, medium dense to dense, fine to medium grained, clayey sand and stiff, sandy clay. Unit 3 ranged in thickness from approximately 1 to 2 feet in cores C-5 and C-6.

Table 2 – Composite Description of Buried Soil Horizons

Thickness (ft)	Horizon	Description
1.2-1.5	1Ab	Dark brown to brown (7.5YR 4/3m, 7.5-10YR4/4d) color; clay loam texture; massive breaking to moderate, coarse subangular blocky structure; extremely hard dry consistence (compacted), very plastic and very sticky wet consistence; no clay films observed; clear, smooth boundary to:
3-4	1Btb	Strong brown (7.5YR 4/6m, 5/5d) color; sandy clay loam texture; massive breaking to moderate, coarse subangular blocky structure; extremely hard dry consistence, very plastic and very sticky wet consistence; many moderately thick to thick clay films in pores; common moderately thick clay films on ped faces, common thin clay films as bridges between grains; gradual to clear, smooth boundary to:
0.7-2	1BCb	Dark yellowish brown (10YR 4/4m, 6/4d) color; sandy loam texture; massive breaking to weak, coarse subangular blocky structure; slightly hard dry consistence, slightly plastic and slightly sticky wet consistence; few to common thin clay films in pores and very few thin clay films on ped faces; stage II $CaCO_3$ as pore linings and clast coatings with few nodules (<1 cm) in lower part of horizon (Bkb horizon); abrupt, smooth boundary to: Note: The 1BCb horizon was not encountered in all cores, as some cores encountered a thicker 1Btb overlying the calcic Bkb horizon. In these cases, the 1Btb horizon is as much as 4 feet thick.
0.5	2Ab	Brown to dark brown (10YR 4/3m, 6/3d) color; sandy loam texture; extremely hard dry consistence, slightly sticky and slightly plastic wet consistence; no clay films; many random, tubular pores; clear to abrupt, smooth boundary to:
>5	2Btb	Dark brown to brown (7.5YR 4/4m, 7.5-10YR 5/6d) color; sandy clay loam texture; massive breaking to strong, coarse subangular blocky to angular blocky structure; extremely hard dry consistence, very sticky and very plastic wet consistence; continuous, thick clay films in pores, common to many thin to moderately thick clay films on ped faces; boundary not observed:

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The upper buried soil (unit 1 in Table 2) which is collectively developed in about 6.5 feet of alluvium is characterized by a reddened A (relic topsoil) and Bt (argillic) horizons, with the average mixed moist color in the argillic horizon reaching 7.5YR 4/6. The color, along with the sandy clay loam texture and abundance and thickness of clay films, indicates that this is a well-developed soil that classifies as a Palexeralf. Similarly developed soils in southern California have been dated to the late Pleistocene and are typically on the order of 100,000 years in age, or older. This soil is similar in description to soils developed on fluvial terraces in Orange County that correlate to the 120,000 year-old MIS 5e marine terrace (Rockwell, unpublished data), and weaker soils in Los

Angeles basin have been dated to about 55,000 years in age (McFadden and Weldon, 1985).

A particular characteristic of the upper buried soil suggests a slightly older age for the actual deposition of the alluvium. The lower part of the profile exhibits secondary calcium carbonate accumulation that typically only occurs in arid to semi-arid regions with low rainfall. Secondary carbonate has been noted in some Holocene Los Angeles basin soils at some distance from the coast, but all post 100,000 year-old soils in coastal southern California are typically devoid of secondary carbonate. This is believed to be because the late Pleistocene climate of southern California was colder and wetter than the present climate (Huesser, 1978 and many other studies by the same author), with conifer forests growing throughout the coastal region until early Holocene time. The implication is that secondary calcium carbonate could not have formed in well-drained soils in late Pleistocene time in Los Angeles basin, consistent with known observations. The last time that secondary carbonate may have formed in the Los Angeles basin is during the last interglacial, between 130,000 and about 115,000 years ago, during which time, the climate in southern California may have been warmer and dryer than at present. The observation of secondary carbonate in the upper buried soil therefore implies that this soil experienced the warm, dry conditions of the last interglacial period. Consequently, the age of the older alluvium is best interpreted as pre-dating the last interglacial and was probably deposited during the waning phases of MIS 6. Thus, we estimate the age of the upper buried alluvium to be in the range of 130,000 to 160,000 years old.

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The lower buried soil exhibits similar characteristics to the upper buried soil, although the color is slightly less red (7.5YR 4/4m). The texture and clay film abundance are similar to the upper buried soil, as are the structure and consistence characteristics. As a rough estimate of age, we consider the lower buried soil to have been exposed for a similar length of time as the upper buried soil, suggesting an age as old as 300,000 years for deposition of the lowest deposits exposed in the cores.

7.2. Site Stratigraphy

In order to evaluate the stratigraphy of the alluvial sediments on site, we utilized borings, direct push cores and cone penetrometer tests. Specific soil layers were evaluated for continuity between exploratory locations. Due to the variable recovery percentages (33 to 100 percent) in the cores, the CPTs were more valuable in providing a relatively clear connectivity between exploratory locations. The CPT profiles indicated four distinct stratigraphic layers that were repeated in each CPT. The stratigraphic layers were correlated with the materials encountered in the cores at or near the respective depths in the CPTs. In addition, we evaluated the vertical inclination of the CPTs and corrected the plots, as appropriate, to compensate for deviation of the inclination of the CPT probe. Our interpretation of the stratigraphy in the parking lot south of the building is presented on Figure 11, which includes the corrected plot of the CPTs as well as a previous CPT and boring from our previous evaluation.

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Based on our review of the core samples and CPT logs, two of the four distinct stratigraphic layers are within the younger Holocene alluvial deposits. The third layer represents the top of the Pleistocene section (Ab and upper part of the clayey Btb horizons) and the fourth layer comprises the lower gravelly sand part of the upper buried soil along with the older lower Pleistocene alluvial deposits and buried soil. The younger layers are generally sloping to the south at approximately 2 to 3 degrees. The younger layers are relatively continuous with distinct contacts with the underlying materials. No discontinuities were observed in the younger layers or at the contact with the Pleistocene age alluvial deposits.

8. FINDINGS AND CONCLUSIONS

The property is situated near the southern edge of the Hollywood fault zone, where the fault has been mapped with a left-step over to the north of the site. The parking lot along the south side of the property is not within the mapped APEFZ of the Hollywood fault (Figure 8). The purpose of our study was to provide the AOC with an assessment of fault rupture hazard that could potentially impact the construction of a new building along the south side of the property, and to provide supplemental recommendations for the proposed improvements, if appropriate.

The Hollywood fault is an active sinistral-reverse oblique strike slip fault trending N76E. Based on previous work by others, the Hollywood fault could produce an earthquake with a magnitude on the order of 6.6, or larger if it fails with the Santa Monica and/or Raymond faults. Geologic data suggests that the last movement along the fault was approximately 7,000 years ago (Dolan, et al., 2000). A probable minimum oblique-slip rate has been estimated at approximately 0.35 millimeters per year for the Hollywood fault, which yields a recurrence interval of approximately 4,000 years (Dolan, et al., 1997) if the fault ruptures on its own. No historical movement (less than 200 years) has been recorded on this fault.

Geologic evidence indicates that faults typically rupture repeatedly along existing fault planes; therefore, the risk for fault rupture hazard is higher for sites located over the trace of an active fault. Fault rupture may occur in previously unfaulted areas; however, the potential is less. Generally, the risk of fault rupture decreases the farther away a site is from an active fault.

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Based on our previous and current evaluations, the younger alluvial soils are up to approximately 39 to 40 feet deep. Our scope included a combination of direct push cores and CPTs at a spacing of approximately 12 feet along the western side of the property in a north-south direction. The traverse of the cores and CPTs were along the same trend as our previous study to allow correlation of the stratigraphy across the property. As a result of the type of exploration, our work was limited to a two-dimensional evaluation of the underlying soil and geologic conditions.

Based on the results of our supplemental fault rupture hazard evaluation, it is our opinion that no active (Holocene age) faults cross the southern portion of the subject property (parking lot) nor are faults recognized at depth on the older Pleistocene deposits beneath the southern portion of the property. Furthermore, it is our opinion that the risk of future fault rupture within the design life of the project is low and building setbacks are not warranted. The bases for our opinions are summarized below.

- Our current subsurface exploration indicates that the parking lot is underlain by gently-sloping stratigraphy with distinct depositional sequences of younger alluvial soils that were repeated in each continuous core and CPT. No offsets were observed in the younger alluvial soils or along the contact with the older alluvial soils with estimated ages of 130,000 years or more.

- No geomorphic evidence such as lineaments, scarps, troughs and depressions was observed in the area of the parking lot or trending through the site from neighboring properties in topographic maps and aerial photographs dating back to 1925.

- The area of the possible future building is not mapped in an Earthquake Fault Zone by the California Geological Survey (California Geological Survey, 2014).

- Existing published data indicate that the Hollywood fault occurs as a series of short segments with step-over zones between the ends of individual segments. The subject site is located near the eastern end of Segment 2 of the fault, where the displacement along the fault is not considered to be as significant compared to displacement in the middle part of a segment, as is present to the west and north of the site (Ninyo & Moore, 2015a).

- Our previous subsurface evaluation indicated possible faulting near the center of the existing building. Based on the orientation of the Hollywood fault as observed by others, the possible faulting would not trend toward the parking lot south of the building.

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9. GEOTECHNICAL EVALUATION

We previously performed a geotechnical evaluation for a proposed 5,000 square foot building addition to the south side of the courthouse, the results of which were presented in our report dated March 6, 2015. As indicated previously, the existing two-story portion of the building on the south side is supported on caissons and the parking garage on the north side is supported on spread footings. In order to preclude the potential differential settlement resulting from a mixed foundation condition between the existing and new foundations, we previously recommended that the previously proposed building addition along the south side of the building be supported on deep foundations.

Our current scope of work included small diameter borings and laboratory testing to evaluate the soil and geologic conditions for the purpose of providing design recommendations for a possible new building in the parking lot. Based on the results of our current subsurface evaluation, laboratory testing, and data analysis, the proposed new building is feasible from a geotechnical standpoint. The recommendations presented in our previous report generally remain applicable for the new building. Depending on the size and type of new building, recommendations for spread footings should be considered. We recommend that an update geotechnical evaluation report be provided based on further details regarding the proposed construction such as building

size, location and elevation. Additional borings and laboratory testing as well as supplemental recommendations may be appropriate.

10. LIMITATIONS

The field evaluation, laboratory testing, and geologic analyses presented in this report have been conducted in general accordance with current practice and the standard of care exercised by geologic consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction.

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Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified, and additional recommendations, if warranted, will be provided upon request. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

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AERIAL PHOTOGRAPHS

Source	Date	Flight	Numbers	Scale
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USDA	10-27-54	AXJ-20K	45 and 46	1: 20,000

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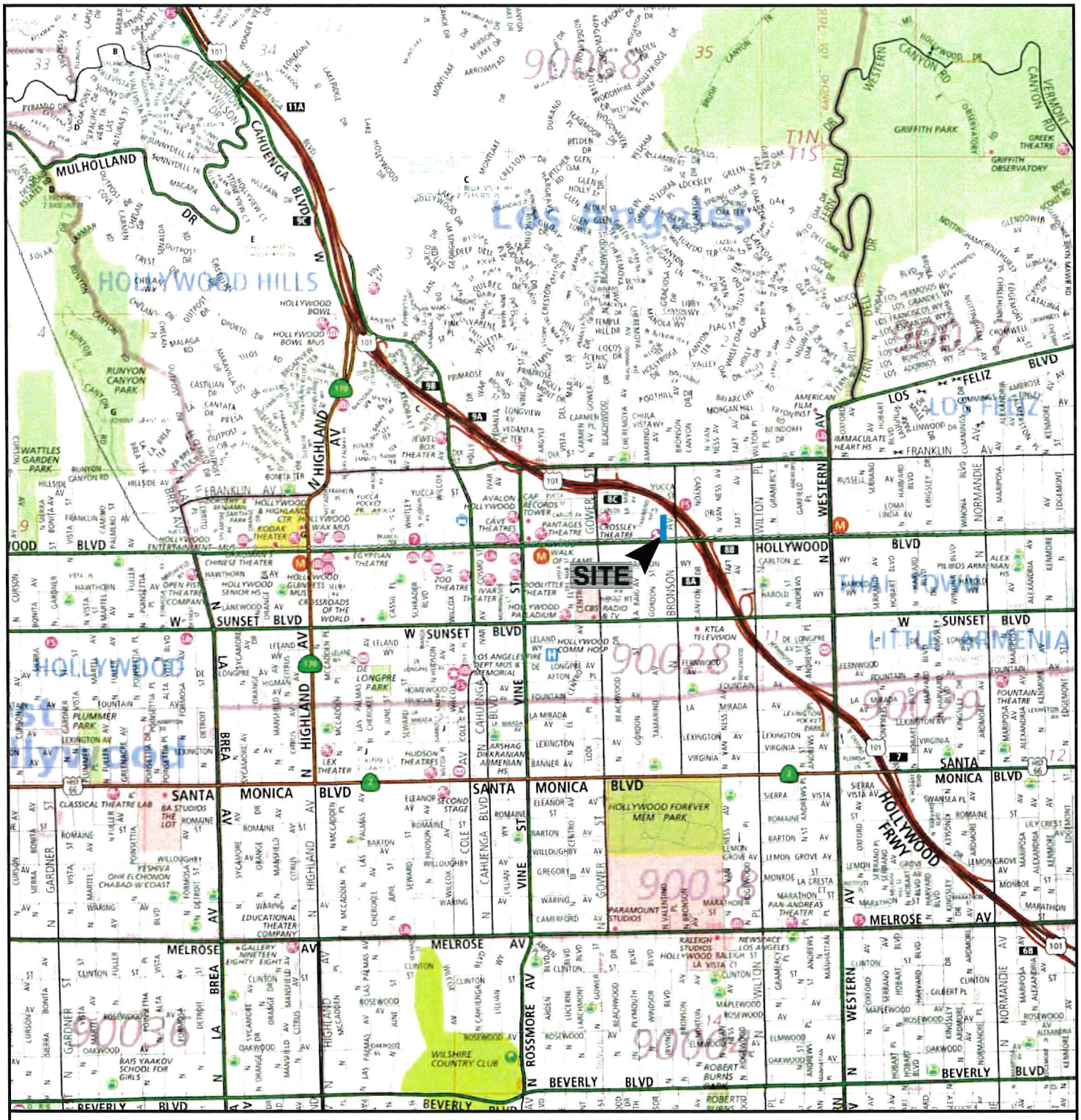

REFERENCE: 52ND EDITION, THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY.

N

SCALE IN FEET

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NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Map © Rand McNally, R.L.07-S-129

Ninyo & Moore

PROJECT NO.	DATE
402132007	6/15

SITE LOCATION

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE

1

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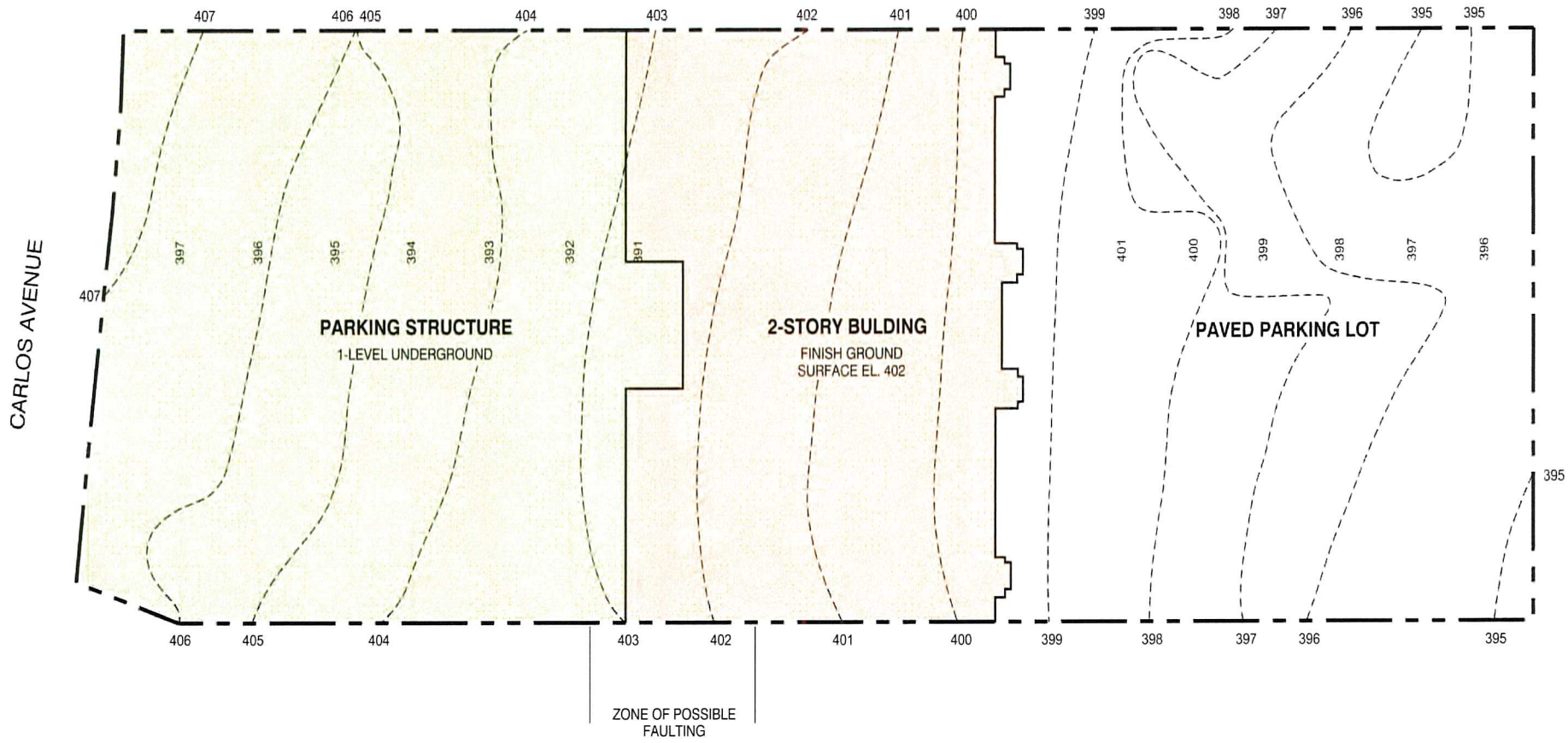

LEGEND

--- 407 --- PRE-EXISTING GROUND SURFACE ELEVATION (1984)

397 FINISHED SURFACE ELEVATION; IN AREA OF PARKING GARAGE, ELEVATION SHOWN AS LOWER LEVEL

N

SCALE IN FEET

0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

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Ninyo & Moore

PROJECT NO. 402132007

DATE 6/15

SITE PLAN

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE 2

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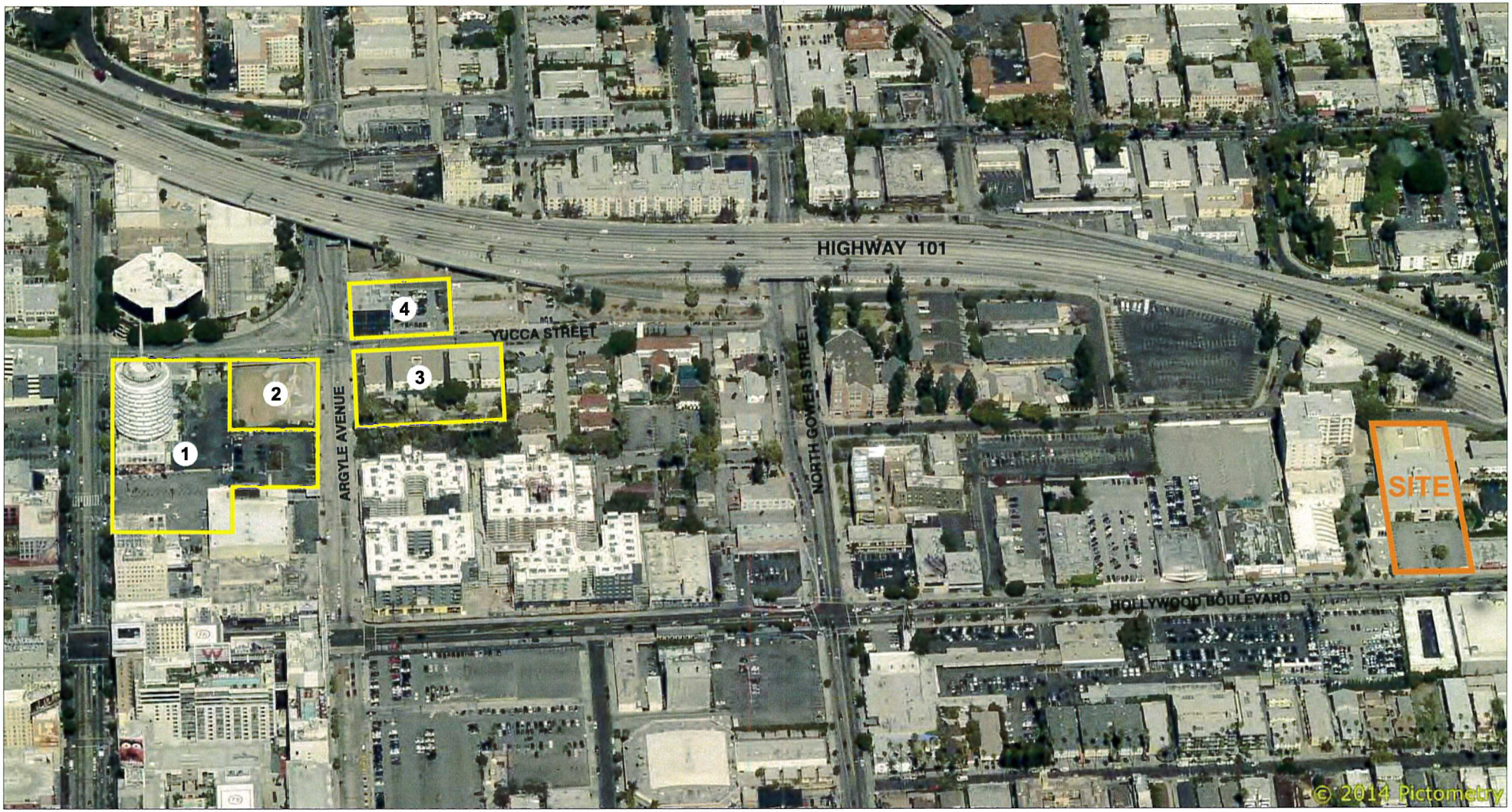

REFERENCE: PICTOMETRY.COM

LEGEND

- PROPERTY WHERE FAULT STUDIES PERFORMED
- (1) GROUP DELTA (9/3/2014)
- (2) GROUP DELTA (9/3/2014)
- (3) GROUP DELTA (9/7/2014)
- (4) GROUP DELTA (9/3/2014)

N

NOT TO SCALE

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		FAULT STUDIES	FIGURE
PROJECT NO.	DATE	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	3
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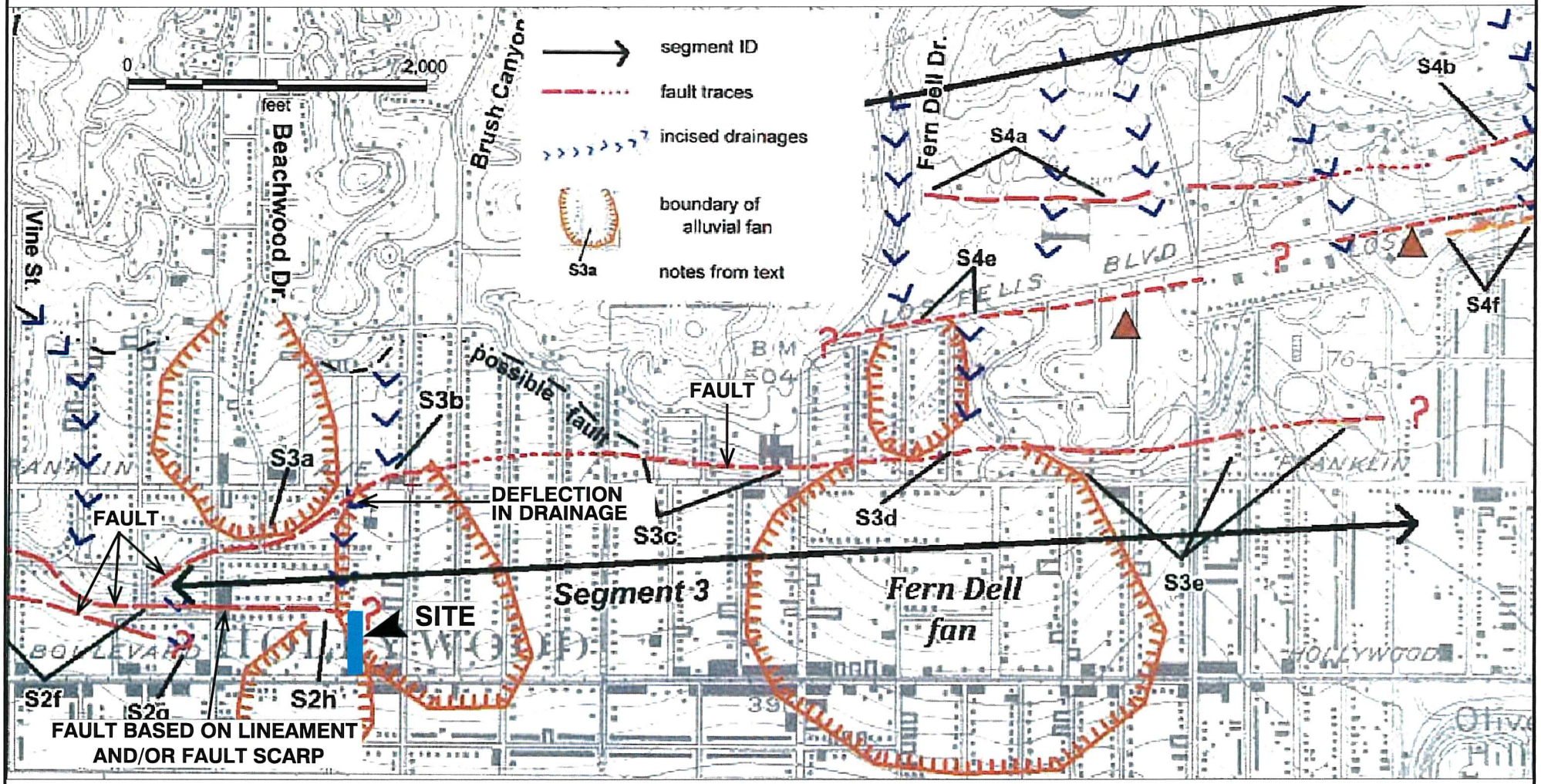

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NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: CALIFORNIA GEOLOGICAL SURVEY FAULT EVALUATION REPORT 253, DATED FEBRUARY 14, 2014.

Ninyo & Moore	GEOMORPHIC FEATURES	FIGURE
PROJECT NO. 402132007 / DATE 6/15	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	4

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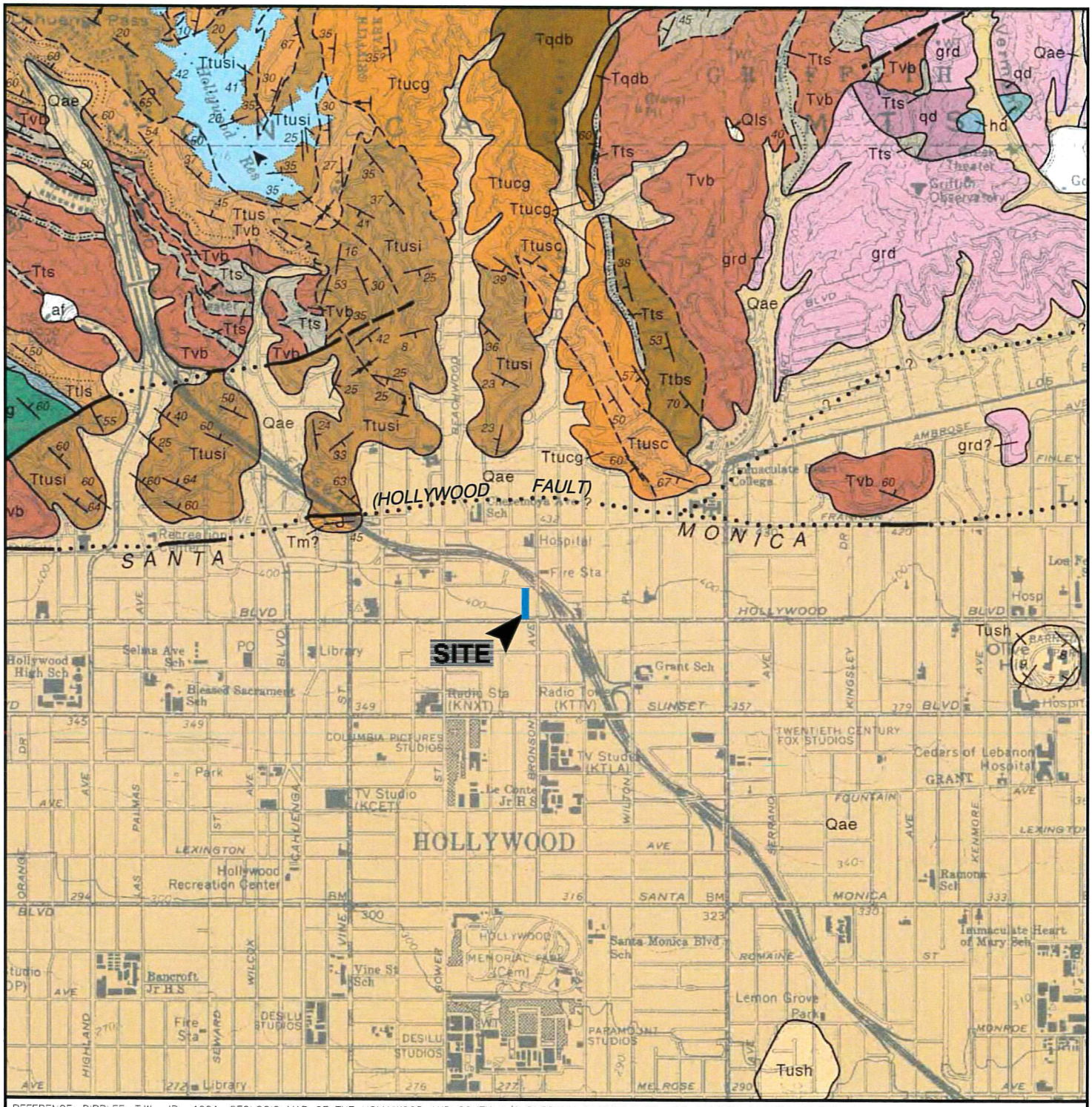

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SCALE IN FEET

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NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND

Qae	ALLUVIUM	grd	GRANODIORITE
Ttusi	TERTIARY SEDIMENTARY DEPOSITS		GEOLOGIC CONTACT
Tvb	VOLCANIC ROCKS	63	BEDDING ATTITUDE
			FAULT; DOTTED WHERE CONCEALED

Ninyo & Moore

PROJECT NO.	DATE
402132007	6/15

REGIONAL GEOLOGY

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE

5

402132007_RG.dwg 08:30:05 01/05/2015 GK

GIS DATA SOURCE: CALIFORNIA GEOLOGICAL SURVEY (CGS); ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE (ESRI)
REFERENCE: JENNINGS, 2010, FAULT ACTIVITY MAP OF CALIFORNIA.

LEGEND

FAULT ACTIVITY:

- HISTORICALLY ACTIVE
- HOLOCENE ACTIVE
- COUNTY BOUNDARIES
- LATE QUATERNARY
- QUATERNARY

N

10 0 10

Miles

NOTE: DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE

Ninyo & Moore		FAULT LOCATIONS	FIGURE
PROJECT NO.	DATE	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	6
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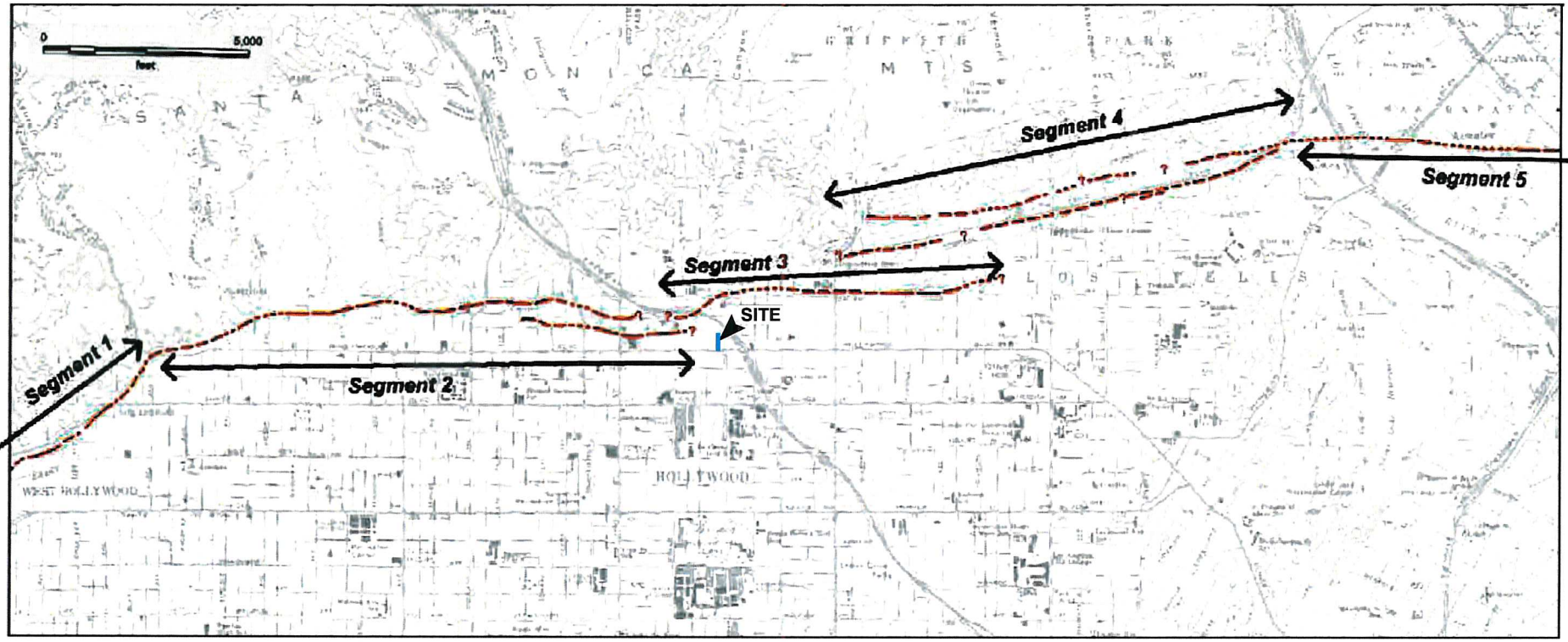

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NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: CALIFORNIA GEOLOGICAL SURVEY, 2014, FAULT EVALUATION REPORT 253, DATED FEBRUARY 14.

Ninyo & Moore		FAULT SEGMENTS	FIGURE
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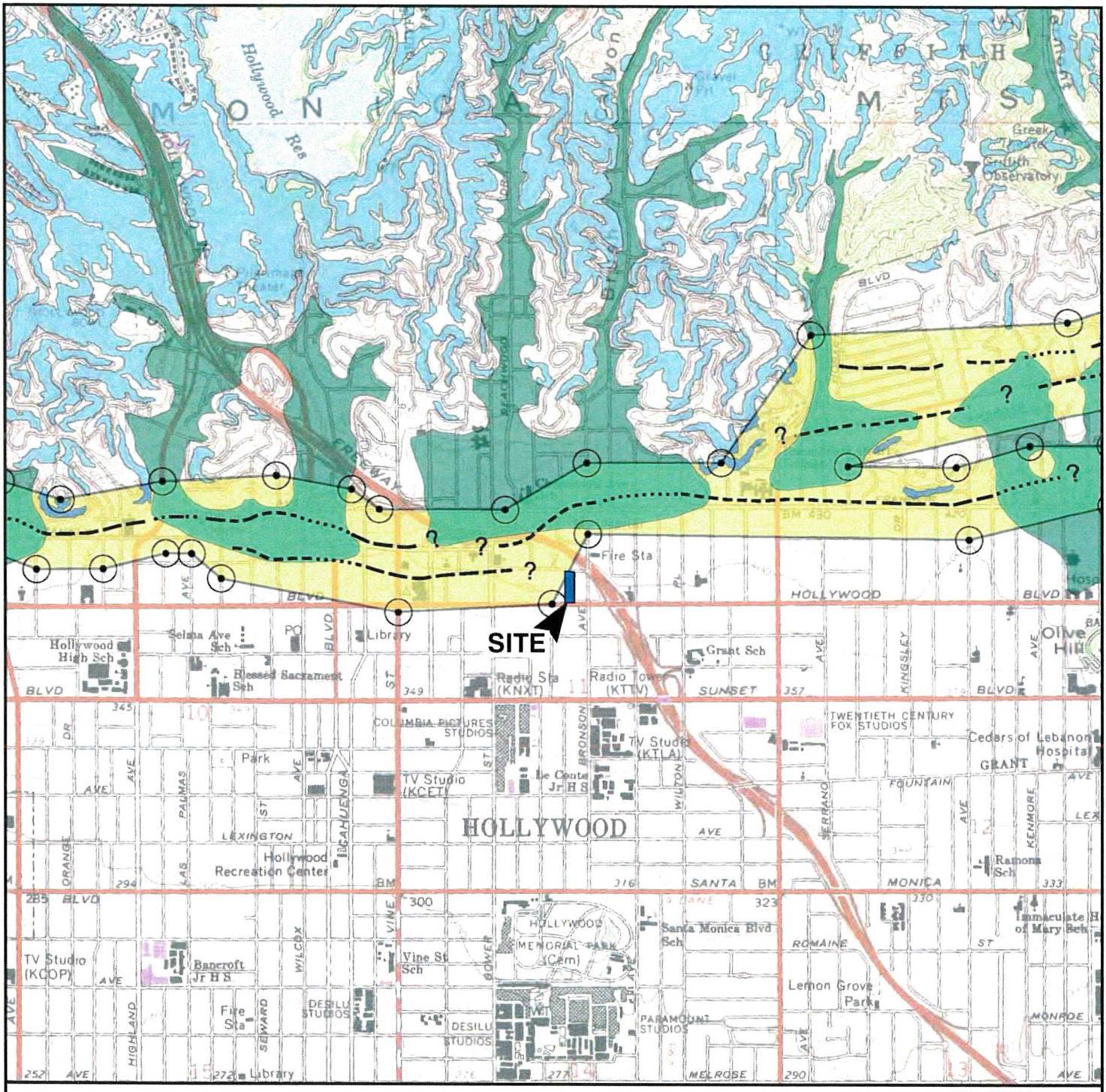

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SCALE IN FEET

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NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND

Potentially Active Faults

1906 C

Faults considered to have been active during Holocene time and to have a relatively high potential for surface rupture, solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.

Special Studies Zone Boundaries

These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.

Seaward projection of zone boundary.

Ninyo & Moore

PROJECT NO. 402132007

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EARTHQUAKE FAULT ZONES

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE 8

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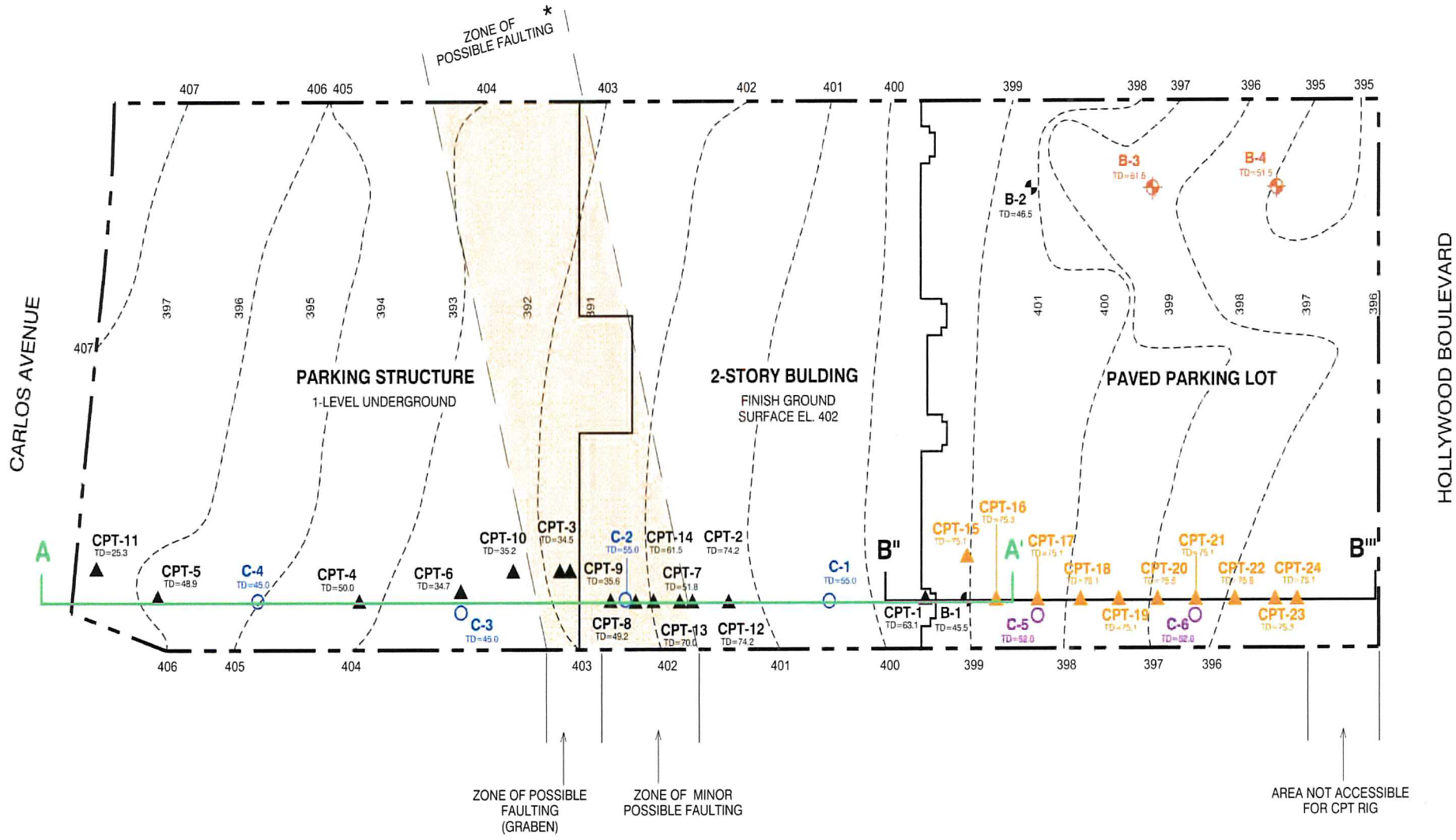

LEGEND

- 407 — PRE-EXISTING GROUND SURFACE ELEVATION (1984)
- 397 — FINISHED SURFACE ELEVATION; IN AREA OF PARKING GARAGE, ELEVATION SHOWN AS LOWER LEVEL
- C-4 TD=45.0 — CORE; TD=TOTAL DEPTH IN FEET (NINYO & MOORE, FEBRUARY 2015)
- CPT-14 TD=61.5 — CONE PENETROMETER TEST; TD=TOTAL DEPTH IN FEET (NINYO & MOORE, FEBRUARY 2015)
- B-2 TD=46.5 — BORING; TD=TOTAL DEPTH IN FEET (NINYO & MOORE, MARCH 2015)
- B-4 TD=51.5 — BORING; TD=TOTAL DEPTH IN FEET
- CPT-24 TD=75.1 — CONE PENETROMETER TEST; TD=TOTAL DEPTH IN FEET
- C-6 TD=52.0 — CORE; TD=TOTAL DEPTH IN FEET
- A — A' — CROSS SECTION; (NINYO & MOORE, 2015a)
- A" — A''' — CROSS SECTION
- * — TREND OF FAULTING BASED ON REVIEW OF GEOLOGIC LITERATURE REGARDING HOLLYWOOD FAULT

N

SCALE IN FEET
0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

REFERENCE: K KENSHI NISHIMOTO ASSOCIATES, 1984, HOLLYWOOD MUNICIPAL COURT, ROUGH GRADING PLAN AND SECTIONS, SHEET C-2, DATED OCTOBER 9.

Ninyo & Moore

BORING AND CPT LOCATIONS

FIGURE 9

PROJECT NO. 402132007

DATE 6/15

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

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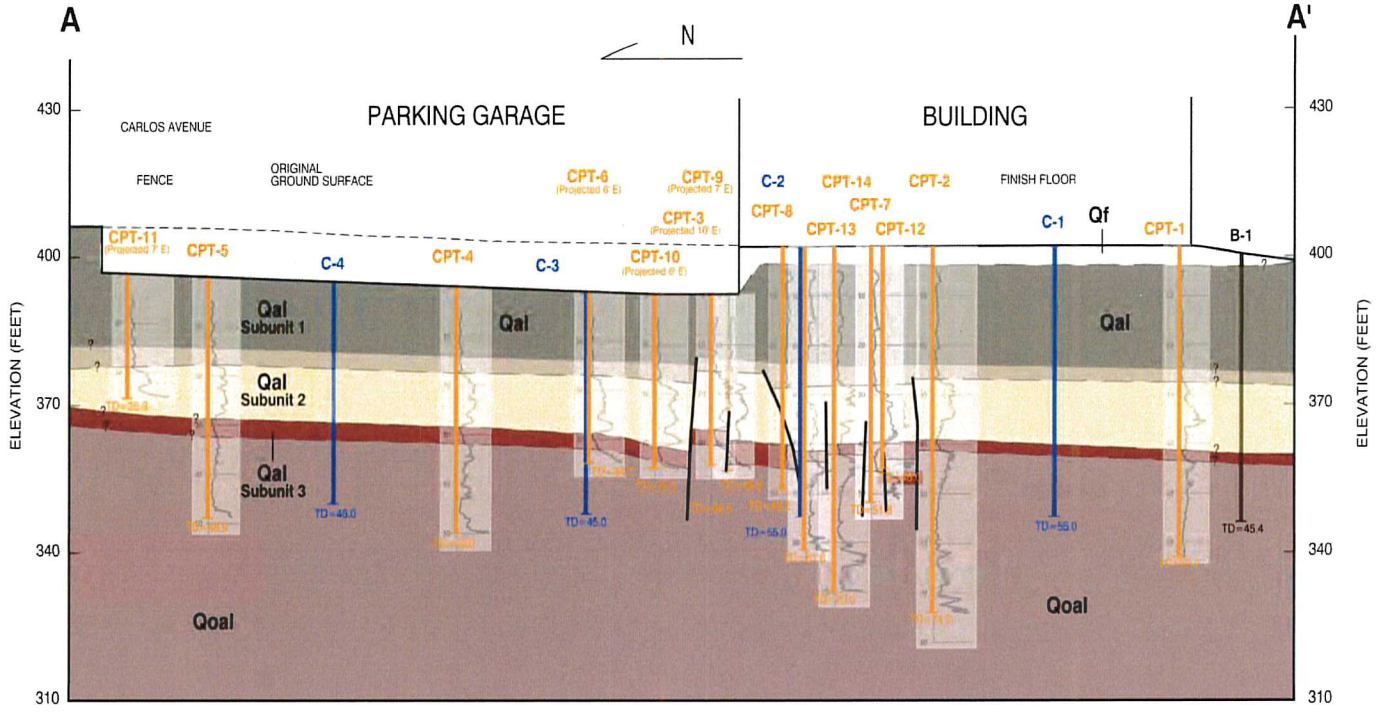

LEGEND

- GEOLOGIC CONTACT; QUERIED WHERE INFERRED
- C-4 (TD=49.0): CORE; TD=TOTAL DEPTH IN FEET
- CPT-6: CONE PENETROMETER TEST; TD=TOTAL DEPTH IN FEET
- B-2 (TD=34.7): BORING; TD=TOTAL DEPTH IN FEET
- Qf: FILL
- Qal Subunit 1 / Qal Subunit 2 / Qal Subunit 3: ALLUVIUM
- Qoal: OLDER ALLUVIUM
- POSSIBLE FAULT

SCALE IN FEET
0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE

REFERENCE: NINYO & MOORE, 2015, FAULT RUPTURE HAZARD EVALUATION, DATED, FEBRUARY 24

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CROSS SECTION A-A'

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE 10

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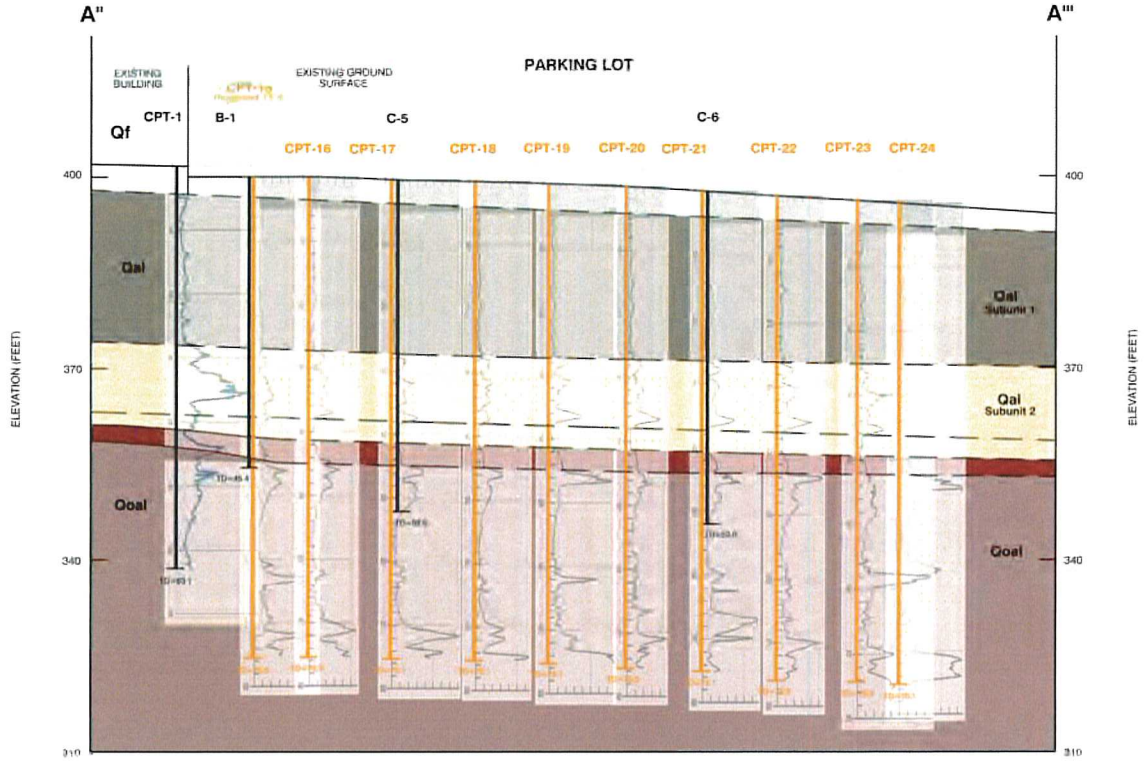

LEGEND

——?——	GEOLOGIC CONTACT; QUERIED WHERE INFERRED
CPT-1 (TD=63.1)	CONE PENETROMETER TEST; TD=TOTAL DEPTH IN FEET (NINYO & MOORE, 2015a)
CPT-24	CONE PENETROMETER TEST; TD=TOTAL DEPTH IN FEET
B-1 (TD=45.4)	BORING; TD=TOTAL DEPTH IN FEET (NINYO & MOORE, 2015b)
C-6 (TD=52.0)	CORE; TD=TOTAL DEPTH IN FEET
Qf	FILL
Qal Subunit 1 / Qal Subunit 2	ALLUVIUM
Qosl	OLDER ALLUVIUM

SCALE IN FEET

0 30 60

NOTE: DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

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DATE 6/15

CROSS SECTION A"-A'''

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

FIGURE

11

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APPENDIX A

BORING LOGS

Field Procedure for the Collection of Disturbed Samples

Disturbed soil samples were obtained in the field using the following methods.

Bulk Samples

Bulk samples of representative earth materials were obtained from the exploratory borings. The samples were bagged and transported to the laboratory for testing.

The Standard Penetration Test (SPT) Spoon

Disturbed drive samples of earth materials were obtained by means of a Standard Penetration Test spoon sampler. The sampler is composed of a split barrel with an external diameter of 2 inches and an unlined internal diameter of 1 3/8 inches. The spoon was driven into the ground 12 to 18 inches with a 140-pound hammer free-falling from a height of 30 inches in general accordance with ASTM D 1586-99. The blow counts were recorded for every 6 inches of penetration; the blow counts reported on the logs are those for the last 12 inches of penetration. Soil samples were observed and removed from the spoon, bagged, sealed, and transported to the laboratory for testing.

DRAFT

Field Procedure for the Collection of Relatively Undisturbed Samples

Relatively undisturbed soil samples were obtained in the field using the following method.

The Modified Split-Barrel Drive Sampler

The sampler, with an external diameter of 3 inches, was lined with 1-inch-long, thin brass rings with inside diameters of approximately 2.4 inches. The sample barrel was driven into the ground with the weight of a hammer or the kelly bar of the drill rig in general accordance with ASTM D 3550-01. The driving weight was permitted to fall freely. The approximate length of the fall, the weight of the hammer or bar, and the number of blows per foot of driving are presented on the boring logs as an index to the relative resistance of the materials sampled. The samples were removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

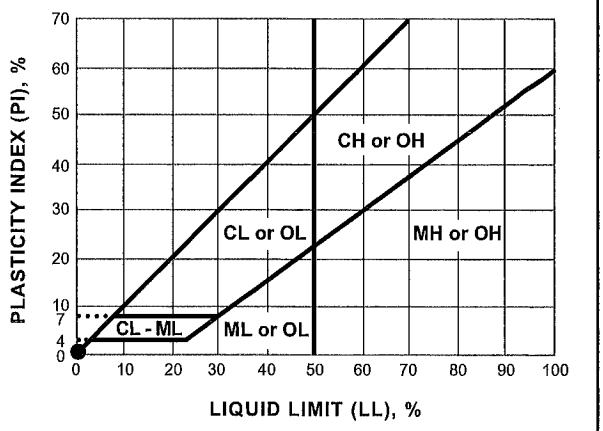
SOIL CLASSIFICATION CHART PER ASTM D 2488

PRIMARY DIVISIONS			SECONDARY DIVISIONS	
			GROUP SYMBOL	GROUP NAME
COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve	**GRAVEL** more than 50% of coarse fraction retained on No. 4 sieve	CLEAN GRAVEL less than 5% fines	GW	well-graded GRAVEL
			GP	poorly graded GRAVEL
		GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines	GW-GM	well-graded GRAVEL with silt
			GP-GM	poorly graded GRAVEL with silt
			GW-GC	well-graded GRAVEL with clay
			GP-GC	poorly graded GRAVEL with clay
		GRAVEL with FINES more than 12% fines	GM	silty GRAVEL
			GC	clayey GRAVEL
			GC-GM	silty, clayey GRAVEL
	SAND 50% or more of coarse fraction passes No. 4 sieve	CLEAN SAND less than 5% fines	SW	well-graded SAND
			SP	poorly graded SAND
		SAND with DUAL CLASSIFICATIONS 5% to 12% fines	SW-SM	well-graded SAND with silt
			SP-SM	poorly graded SAND with silt
			SW-SC	well-graded SAND with clay
			SP-SC	poorly graded SAND with clay
		SAND with FINES more than 12% fines	SM	silty SAND
			SC	clayey SAND
			SC-SM	silty, clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 sieve	**SILT and CLAY** liquid limit less than 50%	INORGANIC	CL	lean CLAY
			ML	SILT
			CL-ML	silty CLAY
		ORGANIC	OL (PI > 4)	organic CLAY
			OL (PI < 4)	organic SILT
	SILT and CLAY liquid limit 50% or more	INORGANIC	CH	fat CLAY
			MH	elastic SILT
		ORGANIC	OH (plots on or above "A"-line)	organic CLAY
			OH (plots below "A"-line)	organic SILT
	Highly Organic Soils		PT	Peat

GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		> 12"	> 12"	Larger than basketball-sized
Cobbles		3 - 12"	3 - 12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4 - 3"	3/4 - 3"	Thumb-sized to fist-sized
	Fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10 - #4	0.079 - 0.19"	Rock-salt-sized to pea-sized
	Medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock-salt-sized
	Fine	#200 - #40	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	< 0.0029"	Flour-sized and smaller

PLASTICITY CHART



APPARENT DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPOOLING CABLE OR CATHEAD		AUTOMATIC TRIP HAMMER	
	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)
Very Loose	≤ 4	≤ 8	≤ 3	≤ 5
Loose	5 - 10	9 - 21	4 - 7	6 - 14
Medium Dense	11 - 30	22 - 63	8 - 20	15 - 42
Dense	31 - 50	64 - 105	21 - 33	43 - 70
Very Dense	> 50	> 105	> 33	> 70

CONSISTENCY - FINE-GRAINED SOIL

CONSIS-TENCY	SPOOLING CABLE OR CATHEAD		AUTOMATIC TRIP HAMMER	
	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)	SPT (blows/foot)	MODIFIED SPLIT BARREL (blows/foot)
Very Soft	< 2	< 3	< 1	< 2
Soft	2 - 4	3 - 5	1 - 3	2 - 3
Firm	5 - 8	6 - 10	4 - 5	4 - 6
Stiff	9 - 15	11 - 20	6 - 10	7 - 13
Very Stiff	16 - 30	21 - 39	11 - 20	14 - 26
Hard	> 30	> 39	> 20	> 26

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USCS METHOD OF SOIL CLASSIFICATION

Explanation of USCS Method of Soil Classification

PROJECT NO.	DATE	FIGURE

BORING LOG EXPLANATION SHEET

DEPTH (feet)	SAMPLES: Bulk	SAMPLES: Driven	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	
0								Bulk sample.
								Modified split-barrel drive sampler.
								No recovery with modified split-barrel drive sampler.
								Sample retained by others.
								Standard Penetration Test (SPT).
5								No recovery with a SPT.
			XX/XX					Shelby tube sample. Distance pushed in inches/length of sample recovered in inches.
								No recovery with Shelby tube sampler.
								Continuous Push Sample.
				♀				Seepage.
10				▽				Groundwater encountered during drilling.
				▼				Groundwater measured after drilling.
							SM	MAJOR MATERIAL TYPE (SOIL): Solid line denotes unit change.
							CL	Dashed line denotes material change.
								Attitudes: Strike/Dip b: Bedding c: Contact j: Joint f: Fracture F: Fault cs: Clay Seam s: Shear bss: Basal Slide Surface sf: Shear Fracture sz: Shear Zone sbs: Shear Bedding Surface
15								
								The total depth line is a solid line that is drawn at the bottom of the boring.
20								

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BORING LOG

Explanation of Boring Log Symbols

PROJECT NO.	DATE	FIGURE
	Rev. 11/11	

DATE DRILLED 5/11/15 BORING NO. B-1

GROUND ELEVATION 398' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 8" Hollow-Stem Auger (Martini Drilling)

DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0						SM	ASPHALT CONCRETE: Approximately 3 inches thick.
						SM	AGGREGATE BASE: Olive brown, moist, medium dense, silty SAND with gravel; approximately 8 inches thick.
						SC	FILL: Brown, moist, loose, silty SAND.
		33	11.9	117.4			ALLUVIUM: Brown, moist, medium dense, clayey SAND; trace coarse sand.
10		10					
		15	7.5	105.3			
20		7	10.5				Yellowish brown; loose.
		25					Trace gravel.
30		10	14.1				Medium dense.
		34	6.6	114.0			
40							

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BORING LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD, LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-1

DATE DRILLED 5/11/15 BORING NO. B-1

GROUND ELEVATION 398' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 8" Hollow-Stem Auger (Martini Drilling)

DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40		12	14.1			SC	ALLUVIUM: (Continued) Light yellowish brown, moist, medium dense, clayey SAND.
						CL	OLDER ALLUVIUM: Dark reddish brown, moist, very stiff to hard, sandy CLAY; trace gravel and coarse sand.
		50/6"	10.8	116.4			Reddish brown and olive brown; hard; mottled; trace caliche stringers.
50		57					
							Total Depth = 51.5 feet. Groundwater was not encountered during drilling. Backfilled with on-site soils on 5/11/15. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
60							
70							
80							

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BORING LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD, LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-2

DATE DRILLED 5/11/15 BORING NO. B-2

GROUND ELEVATION 396' ± (MSL) SHEET 1 OF 2

METHOD OF DRILLING 8" Hollow-Stem Auger (Martini Drilling)

DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
0						SC	ASPHALT CONCRETE: Approximately 2½ inches thick.
							AGGREGATE BASE: Olive brown, moist, medium dense, silty SAND with gravel; approximately 4½ inches thick.
							FILL: Brown, moist, loose, clayey SAND; trace gravel.
		7				SC	ALLUVIUM: Brown, moist, loose, clayey SAND; trace gravel and coarse sand.
10		16	10.1	104.4			Medium dense.
		6					Loose.
20		13	19.9	96.0			
		6				CL	Yellowish brown, moist, stiff, sandy CLAY.
30		21	18.8	104.3			Very stiff.
						SM	Yellowish brown, moist, medium dense, silty SAND.
		12				SC	Yellowish brown, moist, medium dense, clayey SAND.
40							

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BORING LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD, LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-3

DATE DRILLED 5/11/15 BORING NO. B-2

GROUND ELEVATION 396' ± (MSL) SHEET 2 OF 2

METHOD OF DRILLING 8" Hollow-Stem Auger (Martini Drilling)

DRIVE WEIGHT 140 lbs. (Auto. Trip Hammer) DROP 30"

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

DEPTH (feet)	SAMPLES (Bulk / Driven)	BLOWS/FOOT	MOISTURE (%)	DRY DENSITY (PCF)	SYMBOL	CLASSIFICATION U.S.C.S.	DESCRIPTION/INTERPRETATION
40		24	16.6	112.1		CL	OLDER ALLUVIUM: Dark reddish brown, moist, very stiff, sandy CLAY; trace coarse sand.
		41					Hard. Difficult drilling.
50		98/10"					
							Total Depth = 51 feet. Groundwater was not encountered during drilling. Backfilled with bentonite-grout on 5/11/15. Note: Groundwater, though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents.
60							
70							
80							

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BORING LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD, LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-4

DRAFT

DIRECT PUSH CORE LOGS

DATE DRILLED 5/11/15 CORE NO. C-1

GROUND ELEVATION 399.6'± (MSL) SHEET 1 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE: Run No.	CORE: Box No.	CORE: Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
399.6	0					ASPHALT CONCRETE		Hand Auger to 5 feet
					SM	Approximately 4 inches thick.		
						AGGREGATE BASE		
398.6	1					Olive brown, moist, loose, silty SAND with gravel, approximately 5 inches thick		
						FILL		
397.6	2				SM	Brown, moist, loose, silty SAND; trace gravel,		
396.6	3							
395.6	4				SC	ALLUVIUM - SUBUNIT 1		
						Dark yellowish brown, (10YR 3/4), moist, loose, clayey SAND; trace coarse sand.		
394.6	5							
393.6	6							
		1	1	36				
392.6	7							
391.6	8							
390.6	9							
389.6	10	2		35				
388.6	11							
387.6	12					@ 11.9' Light gray, subrounded to subangular gravel up to 3/4 inch.		
386.6	13							
		3		42				
385.6	14				CL	Dark brown, (10YR 3/3), moist, firm, sandy CLAY; trace coarse sand.		
384.6	15				SC-SM	Dark yellowish brown, (10YR 3/4), moist, loose, clayey to silty SAND; trace coarse sand and fine, subangular gravel.		
383.6	16							

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CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-5

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DATE DRILLED 5/11/15 CORE NO. C-1

GROUND ELEVATION 399.6'± (MSL) SHEET 2 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE Run No.	CORE Box No.	CORE Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
384.6	16	4	1	50	SC-SM	ALLUVIUM - SUBUNIT 1 CONT. Dark yellowish brown (10YR 3/4), moist, loose, clayey to silty SAND; trace coarse sand and fine, subangular gravel.		
383.6	17							
382.6	18							
381.6	19							
380.6	20	5		42		Dark yellowish brown, (10YR 4/4), trace subrounded gravel.		
379.6	21					Graditional Contact		
378.6	22				CL	Yellowish brown, (10YR 5/6), moist, firm to stiff, sandy CLAY; trace fine to coarse sand.		
377.6	23					@ 23'6" 2 inch clayey sand lens.		
376.6	24	6		69				
375.6	25							
374.6	26					Thin interbeds of clayey SAND.		
373.6	27					@ 27'6" 2-inch interbed of dark yellowish brown (10YR 6/4), moist, medium dense, poorly graded SAND.		
372.6	28	7	2	85	SP	ALLUVIUM - SUBUNIT 2 Dark yellowish brown (10YR 6/4), moist, medium dense, poorly graded SAND; fine to medium grained; scattered lenses with trace clay.		
371.6	29					@ 29'9" 3-inch interbed of dark yellowish brown (10YR 4/4), moist, stiff sandy CLAY; shallow angular contact.		
370.6	30					@ 30' 1-inch thick lens of poorly graded SAND. @ 30'1" 5-inch thick interbed of dark yellowish brown (10YR 4/4), moist, medium dense, clayey SAND.		
369.6	31					@ 30'6": Dark yellowish brown (10YR 6/4), moist, stiff, sandy CLAY; gradational to clayey SAND.		
368.6	32					@ 31' Yellowish brown (10YR 5/6), moist, medium dense, poorly graded SAND; trace gravel.		

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CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-6

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DATE DRILLED 5/11/15 CORE NO. C-1

GROUND ELEVATION 399.6'± (MSL) SHEET 3 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE Run No.	CORE Box No.	CORE Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
367.6	32	8	2	83	SP	ALLUVIUM - SUBUNIT 2 CONT. Yellowish brown (10YR 5/6), moist, medium dense, poorly graded SAND; trace gravel.		
366.6	33					@ 33' to 34' Gradational interbeds of sandy CLAY; and clayey SAND.		
365.6	34				SC	Yellowish brown (10YR 5/6), moist, medium dense, clayey SAND.		
364.6	35							
363.6	36	9		81				
362.6	37					@ 37'10" Groundwater carbonation on gravel.		
361.6	38				SP	Very pale brown (10YR 7/4), moist, medium dense, poorly graded SAND.		
360.6	39				SC	ALLUVIUM - SUBUNIT 3 Dark yellowish brown (10YR 7/4), moist, medium dense, clayey SAND; trace, coarse sand and fine gravel. @ 39'8" stringers of dark brown (10YR 3/3), moist, stiff, sandy CLAY.		
359.6	40	10		73		OLDER ALLUVIUM Very dark brown (7.5YR 3/4), moist, very stiff, sandy CLAY. Paleosol 1; A horizon (approximately 17 1/2 inches in thickness).		
358.6	41				CL	Strong brown (7.5YR 4/6), trace coarse sand.		
357.6	42							
356.6	43							
355.6	44	11		100				
354.6	45					Scattered carbonated gravel.		
353.6	46				SC	Very pale brown (10YR 7/4), moist, dense, clayey SAND; low angular contact; Paleosol 2; A horizon (approximately 5 inches in thickness). Graditional to dark yellowish brown (10YR 3/4), clayey SAND to sandy CLAY.		
352.6	47							
351.6	48							

Ninyo & Moore

CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-7

402132007_C1-3.dwg 10:09:18 06/04/2015 GK

DATE DRILLED 5/11/15 CORE NO. C-1

GROUND ELEVATION 399.6'± (MSL) SHEET 4 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE: Run No.	CORE: Box No.	CORE: Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
367.6	48	12	2	100	SC	OLDER ALLUVIUM CONT. Yellowish brown (10YR 3/4), moist, dense, clayey SAND.		
					CL	Brown (7.5YR 4/4), moist, hard, sandy CLAY; trace coarse sand, trace subangular gravel.		
366.6	49							
349.6	50					Yellowish brown (10YR 5/6), moist, medium dense, clayey SAND.		
348.6	51							
347.6	52					Total Depth = 52.0 feet Groundwater not encountered during drilling Backfilled with bentonite grout on 5/11/15 Groundwater though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.		

Ninyo & Moore

CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-8

402132007_C1-4.dwg 10:09:18 06/04/2015 GK

DATE DRILLED 5/11/15 CORE NO. C-2

GROUND ELEVATION 397.7'± (MSL) SHEET 1 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE Run No.	CORE Box No.	CORE Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
397.7	0					ASPHALT CONCRETE		
					SM	Approximately 3 inches thick.		Hand Auger to 5 feet
						AGGREGATE BASE		
396.7	1					Olive brown, moist, medium dense, silty SAND with gravel, approximately 4 inches thick		
						FILL		
395.7	2				SM	Brown, moist, loose, silty SAND; trace gravel,		
394.7	3							
393.7	4							
					SC	ALLUVIUM - SUBUNIT 1		
392.7	5					Dark yellowish brown, (10YR 3/4), moist, loose, clayey SAND; trace coarse sand.		
		1	1	33				
391.7	6							
390.7	7							
389.7	8							
		2		48				
388.7	9							
387.7	10							
386.7	11							
385.7	12							
		3		50				
384.7	13							
383.7	14							
382.7	15				SM	Light yellowish brown (10YR 6/4), moist, loose, silty SAND; trace gravel.		
					SC-SM	Dark yellowish brown (10YR 3/4), moist, loose, clayey to silty SAND; trace coarse sand.		
381.7	16							

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CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-9

402132007_C2-1.dwg 10:09:18 06/04/2015 GK

DATE DRILLED 5/11/15 CORE NO. C-2

GROUND ELEVATION 397.7'± (MSL) SHEET 2 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE: Run No.	CORE: Box No.	CORE: Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
381.7	16	4	1	48	SC-SM	ALLUVIUM - SUBUNIT 1 CONT. Dark, yellowish brown (10YR 3/4), moist, loose, clayey to silty SAND; trace coarse sand.		
380.7	17							
379.7	18							
378.7	19							
377.7	20	5		75	CL	Dark yellowish brown, (10YR 3/4), moist, very stiff, sandy CLAY; trace coarse sand.		
376.7	21							
375.7	22							
374.7	23							
373.7	24	6		85	SC	Yellowish brown, (10YR 5/6), moist, medium dense, clayey SAND.		
372.7	25							
371.7	26					Gradational contact		
					SP	ALLUVIUM - SUBUNIT 2 Yellowish brown, (10YR 5/6), moist, medium dense, poorly graded SAND.		
370.7	27				SC	Yellowish brown, (10YR 5/6), moist, medium dense, clayey SAND.		
369.7	28	7	2	83	SP	Very pale brown, (10YR 7/4), moist, medium dense, poorly graded SAND.		
368.7	29				CL	Dark yellowish brown, (10YR 4/4), moist, stiff, sandy CLAY.		
367.7	30					@ 30'4" gravel.		
366.7	31				SP	Yellowish brown (10YR 5/6), moist, medium dense, poorly graded SAND.		
365.7	32							

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CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-10

402132007_C2-2.dwg 10:09:18 05/04/2015 GK

DATE DRILLED 5/11/15 CORE NO. C-2

GROUND ELEVATION 397.7'± (MSL) SHEET 3 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE: Run No.	CORE: Box No.	CORE: Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
365.7	32	8	2	79	SP	ALLUVIUM - SUBUNIT 2 CONT. Yellowish brown (10YR 5/6), moist, medium dense, poorly graded SAND.		
364.7	33					@33'6" gravel.		
					SC	Yellowish brown, (10YR 5/6), moist, medium dense, clayey SAND and sandy CLAY; interbedded; trace gravel.		
362.7	35							
361.7	36	9		79	SP	Very pale brown, (10YR 7/4), moist, medium dense, poorly graded SAND.		
360.7	37					Horizontal contact		
					SC	ALLUVIUM - SUBUNIT 3 Dark yellowish brown, (10YR 3/4), moist, dense, clayey SAND; trace coarse sand and fine gravel.		
358.7	39							
					CL	OLDER ALLUVIUM Very dark brown, (7.5YR 3/4), moist, very stiff, sandy CLAY. Paleosol 1; A horizon (approximately 14 inches in thickness).		
357.7	40	10		100				
356.7	41					Strong brown, (7.5YR 4/6), trace, coarse sand and fine gravel.		
355.7	42							
354.7	43							
353.7	44	11		100				
352.7	45					@44'9" Groundwater carbonation on coarse, subangular gravel.		
351.7	46					@45'8" carbonated gravel Brown, (7.5YR 4/4), hard. Paleosol 2; A horizon (approximately 5 inches in thickness).		
350.7	47							
349.7	48							

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CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-11

402132007_C2-3.dwg 10:09:18 06/04/2015 GK

DATE DRILLED 5/11/15 CORE NO. C-2

GROUND ELEVATION 397.7'± (MSL) SHEET 4 OF 4

METHOD OF DRILLING TRUCK MOUNTED DIRECT PUSH DRILLER MARTINI DRILLING

LOCATION PARKING LOT - WEST SIDE

SAMPLED BY ZH LOGGED BY ZH REVIEWED BY JJB

Elevation, feet	Depth, feet	CORE: Run No.	CORE: Box No.	CORE: Recovery, %	U.S.C.S. Classification	DESCRIPTION/INTERPRETATION	DRILL TIME	FIELD NOTES AND LAB TESTS
349.7	48	12	2	100	CL	OLDER ALLUVIUM CONT. Brown (10YR 4/4), moist, hard, sandy CLAY; trace coarse sand and subangular gravel.		
348.7	49							
347.7	50							
346.7	51							
345.7	52					Total Depth = 52.0 feet Groundwater not encountered during drilling Backfilled with bentonite grout on 5/11/15 Note 3 Groundwater though not encountered at the time of drilling, may rise to a higher level due to seasonal variations in precipitation and several other factors as discussed in the report.		

Ninyo & Moore

CORE LOG

HOLLYWOOD COURTHOUSE
5925 HOLLYWOOD BOULEVARD
LOS ANGELES, CALIFORNIA

PROJECT NO.	DATE	FIGURE
402132007	6/15	A-12

402132007_C2-4.dwg 10:09:18 06/04/2015 GK

DRAFT

APPENDIX B
CONE PENETROMETER TESTING
(GREGG DRILLING)

GREGG DRILLING & TESTING, INC.
GEOTECHNICAL AND ENVIRONMENTAL INVESTIGATION SERVICES

May 13, 2015

Ninyo & Moore
Attn: Jim Barton

Subject: CPT Site Investigation
Hollywood Courthouse
Los Angeles, California
GREGG Project Number: 14-812SH – part 3

Dear Mr. Barton:

The following report presents the results of GREGG Drilling & Testing's Cone Penetration Test investigation for the above referenced site. The following testing services were performed:

1	Cone Penetration Tests	(CPTU)	☒
2	Pore Pressure Dissipation Tests	(PPD)	☒
3	Seismic Cone Penetration Tests	(SCPTU)	☐
4	UVOST Laser Induced Fluorescence	(UVOST)	☐
5	Groundwater Sampling	(GWS)	☐
6	Soil Sampling	(SS)	☐
7	Vapor Sampling	(VS)	☐
8	Pressuremeter Testing	(PMT)	☐
9	Vane Shear Testing	(VST)	☐
10	Dilatometer Testing	(DMT)	☐

A list of reference papers providing additional background on the specific tests conducted is provided in the bibliography following the text of the report. If you would like a copy of any of these publications or should you have any questions or comments regarding the contents of this report, please do not hesitate to contact our office at (925) 313-5800.

Sincerely,
GREGG Drilling & Testing, Inc.

Peter Robertson
Technical Director, Gregg Drilling & Testing, Inc.

Cone Penetration Test Sounding Summary

-Table 1-

CPT Sounding Identification	Date	Termination Depth (feet)	Depth of Groundwater Samples (feet)	Depth of Soil Samples (feet)	Depth of Pore Pressure Dissipation Tests (feet)
CPT-01	5/12/15	75	-	-	75.1
CPT-02	5/11/15	75	-	-	75.3
CPT-03	5/11/15	75	-	-	75.1
CPT-04	5/11/15	75	-	-	75.1
CPT-05	5/11/15	75	-	-	75.1
CPT-06	5/11/15	75	-	-	75.5
CPT-07	5/11/15	75	-	-	75.1
CPT-08	5/12/15	75	-	-	75.8
CPT-09	5/12/15	75	-	-	75.3
CPT-10	5/12/15	75	-	-	75.1

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Zemo, D.A., T.A. Delfino, J.D. Gallinatti, V.A. Baker and L.R. Hilpert, "Field Comparison of Analytical Results from Discrete-Depth Groundwater Samplers" BAT EnviroProbe and QED HydroPunch, Sixth national Outdoor Action Conference, Las Vegas, Nevada Proceedings, 1992, pp 299-312.

Copies of ASTM Standards are available through www.astm.org

GREGG

NINYO & MOORE

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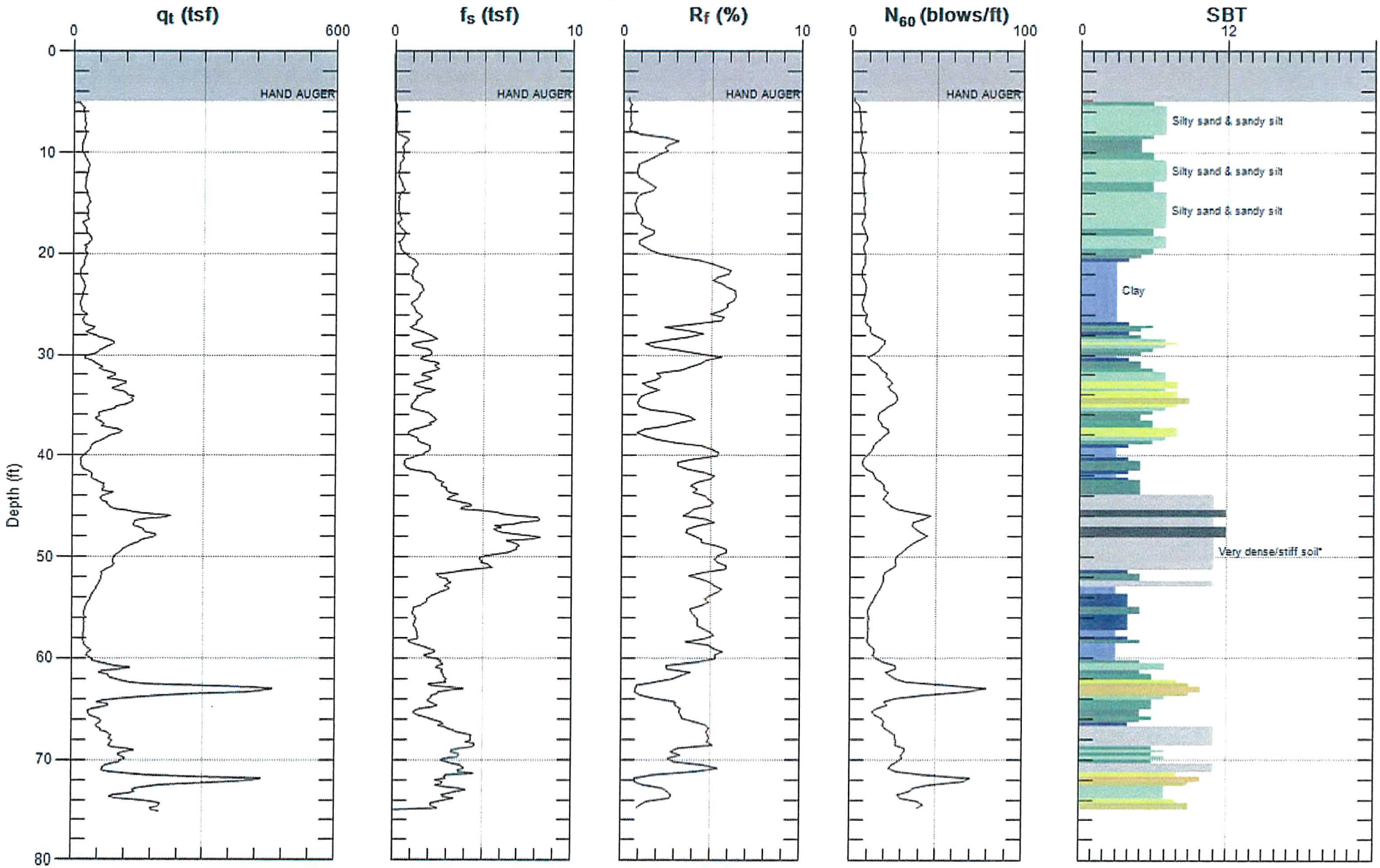
Sounding: CPT-15

Engineer: J.BARTON
Date: 5/12/2015 07:46



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

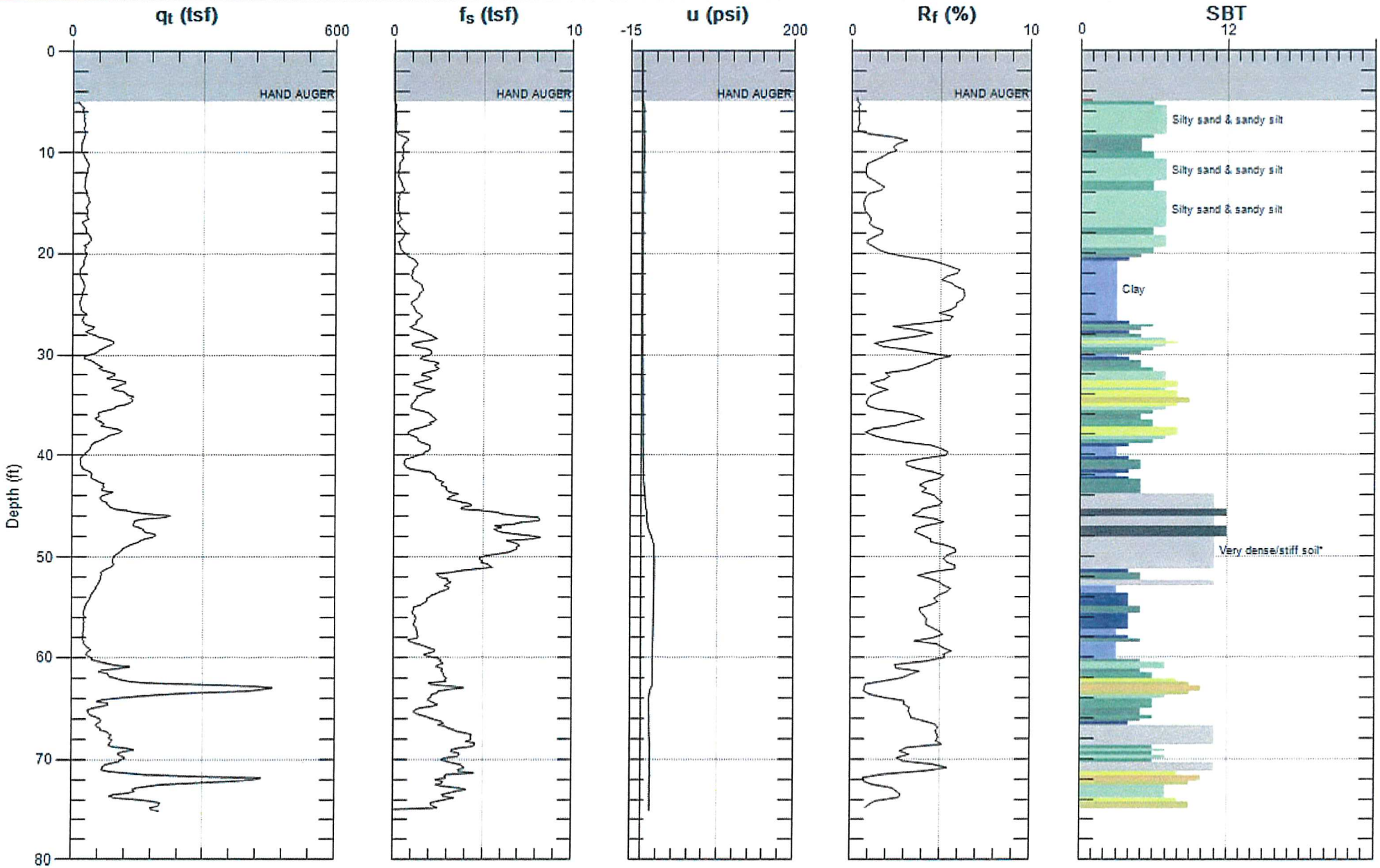
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT **Engineer: J.BARTON**

Sounding: CPT-15 **Date: 5/12/2015 07:46**



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

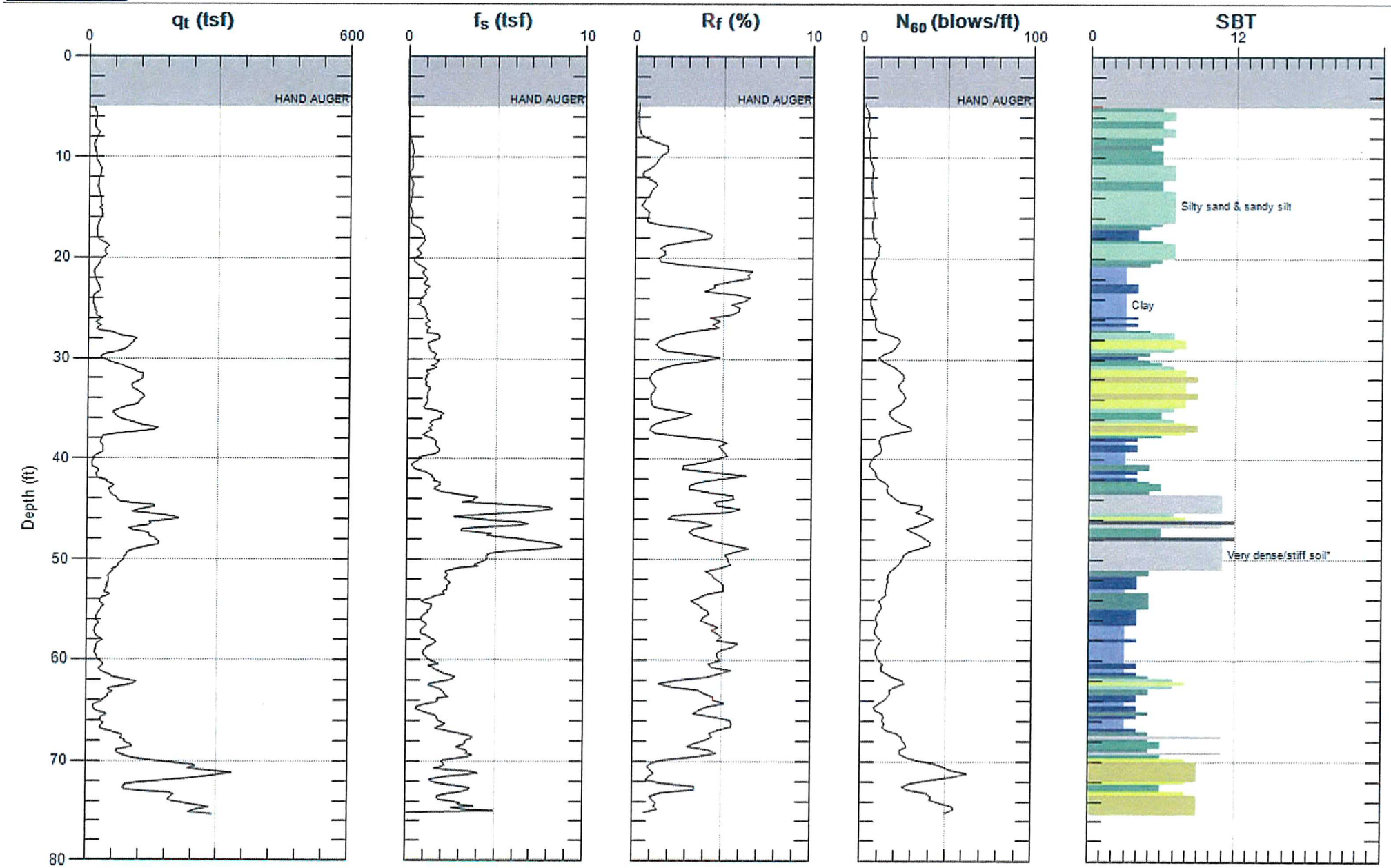
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-16

Engineer: J.BARTON
Date: 5/11/2015 01:54



Max. Depth: 75.295 (ft)
Avg. Interval: 0.328 (ft)

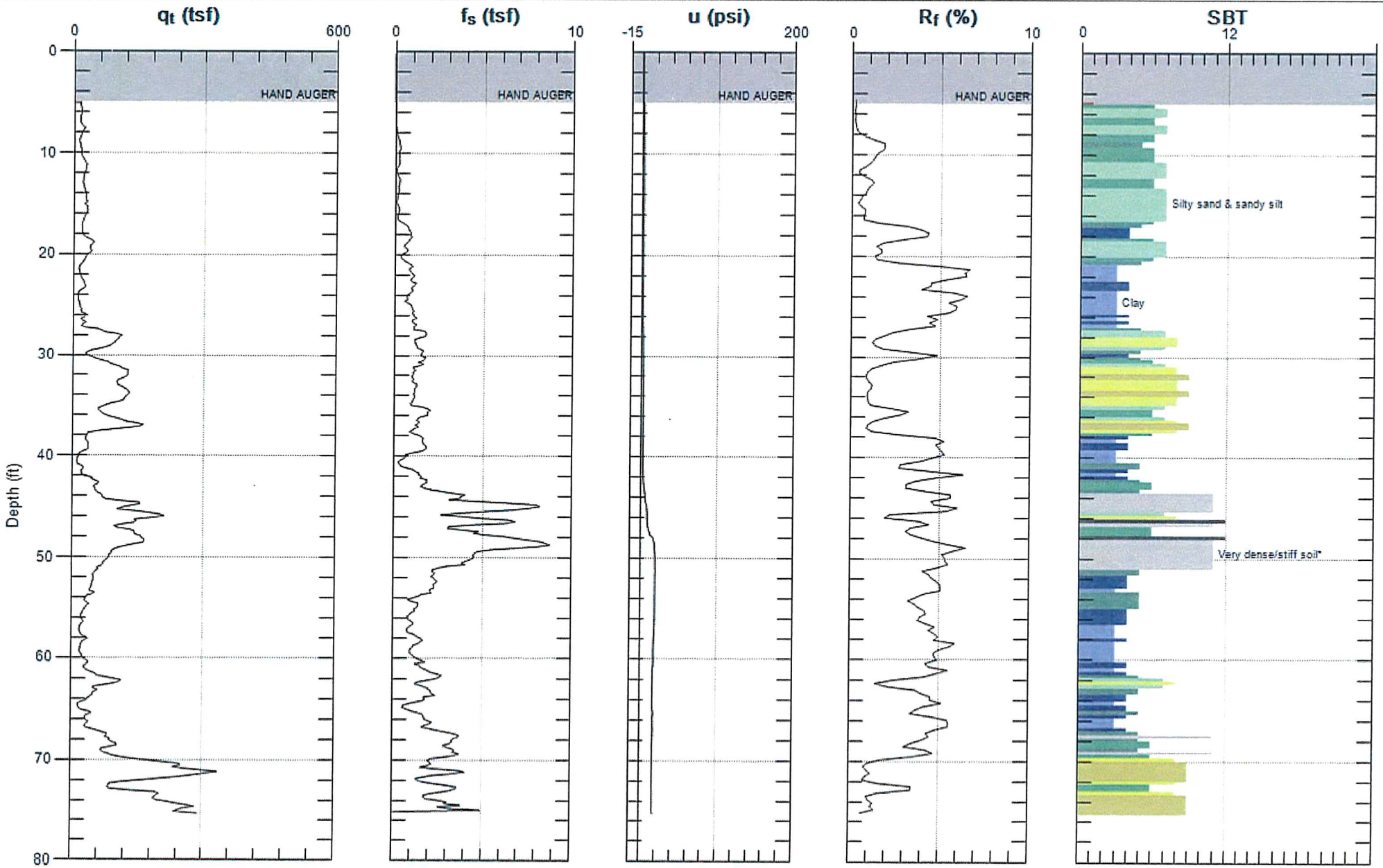
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-16

Engineer: J.BARTON
Date: 5/11/2015 01:54



Max. Depth: 75.295 (ft)
Avg. Interval: 0.328 (ft)

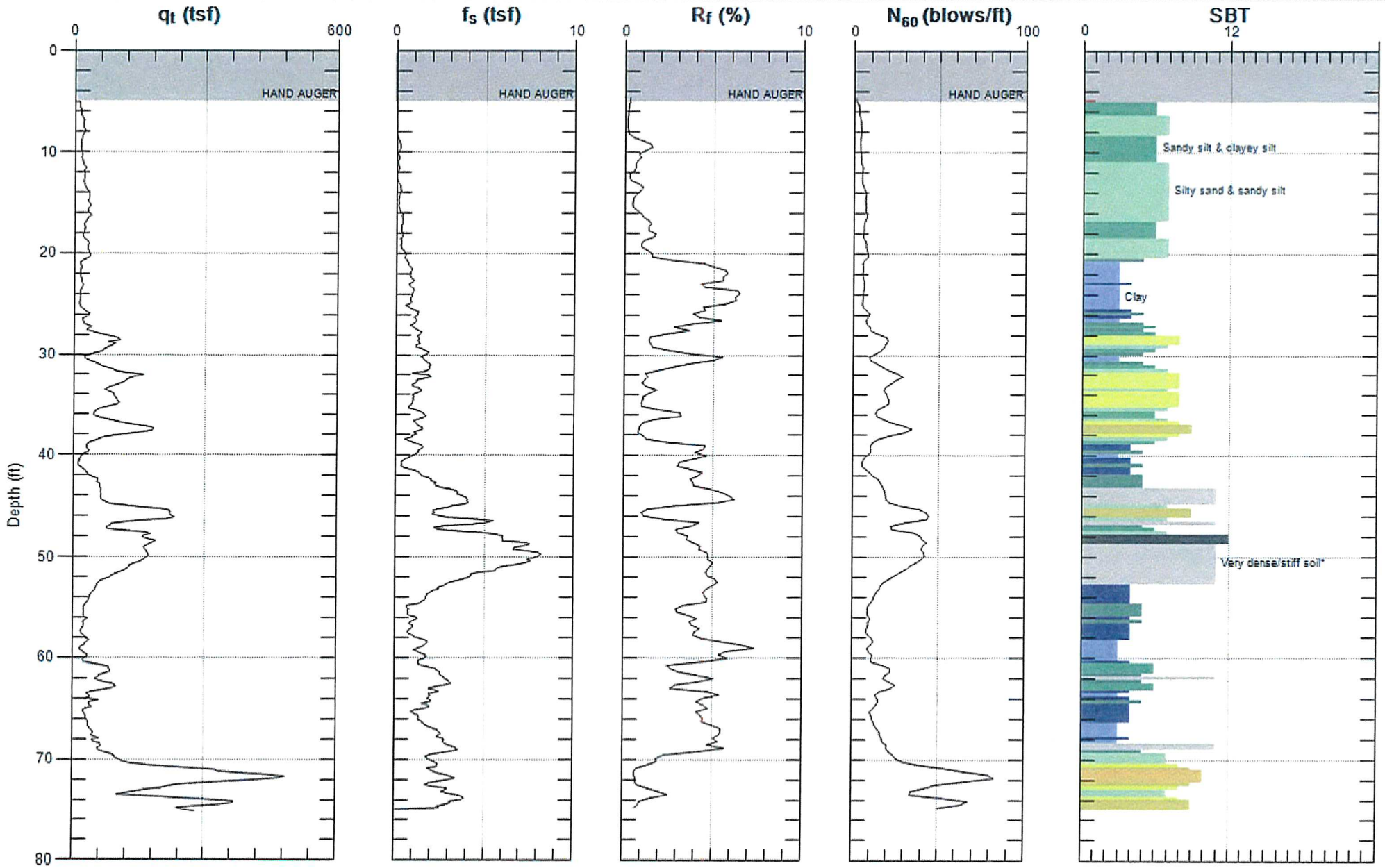
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-17

Engineer: J.BARTON
Date: 5/11/2015 01:01



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

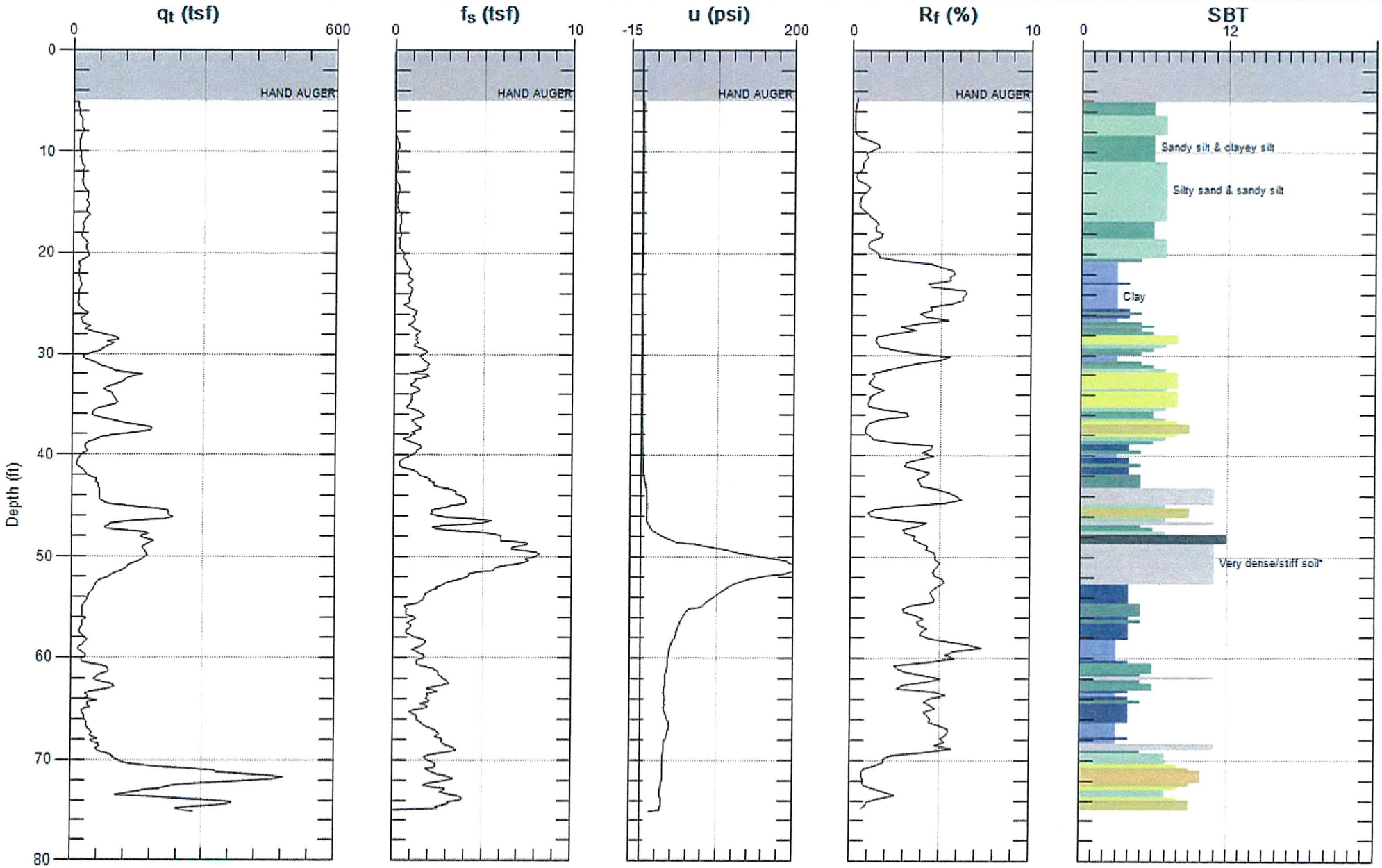
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-17

Engineer: J.BARTON
Date: 5/11/2015 01:01



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

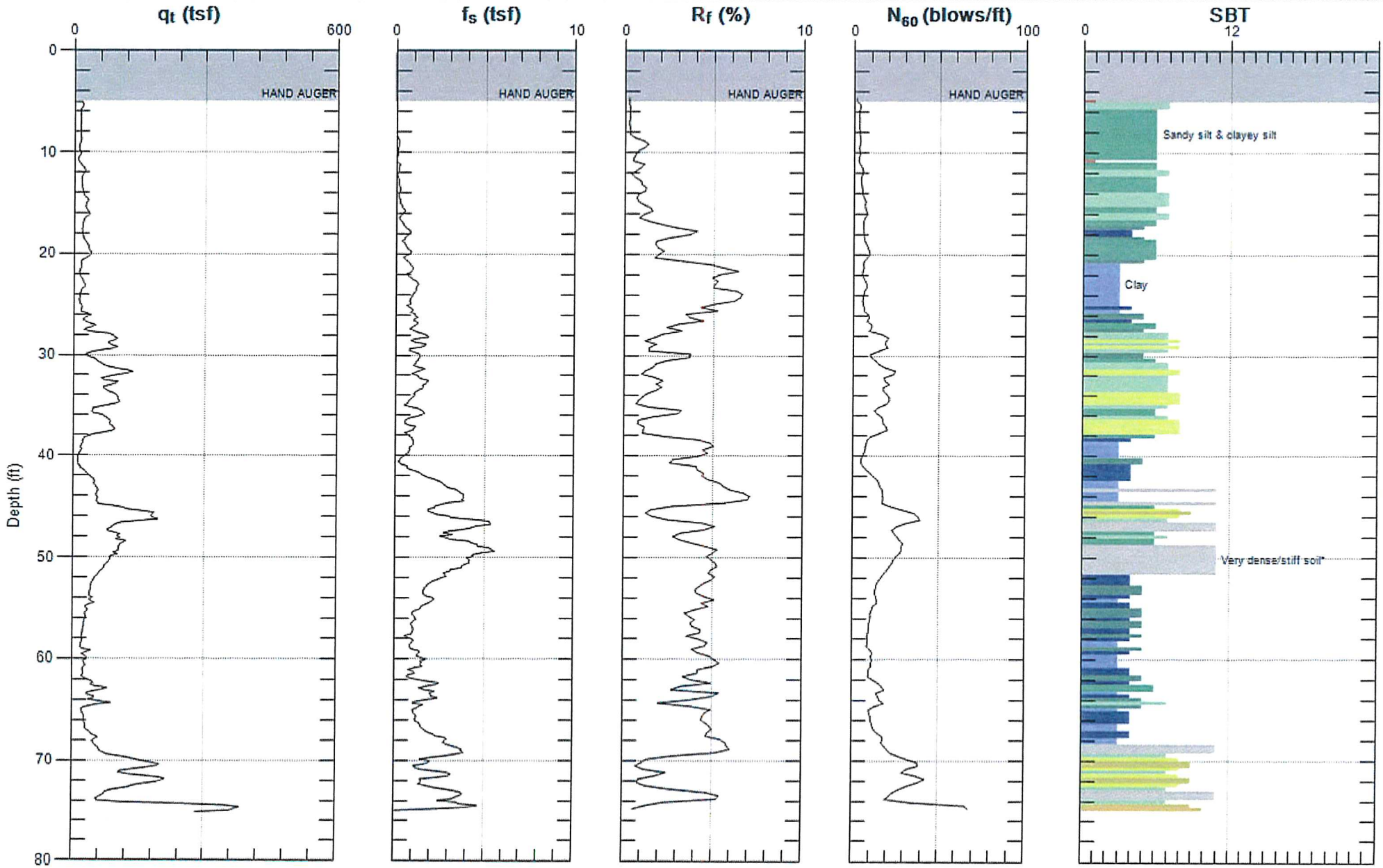
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-18

Engineer: J.BARTON
Date: 5/11/2015 12:02



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

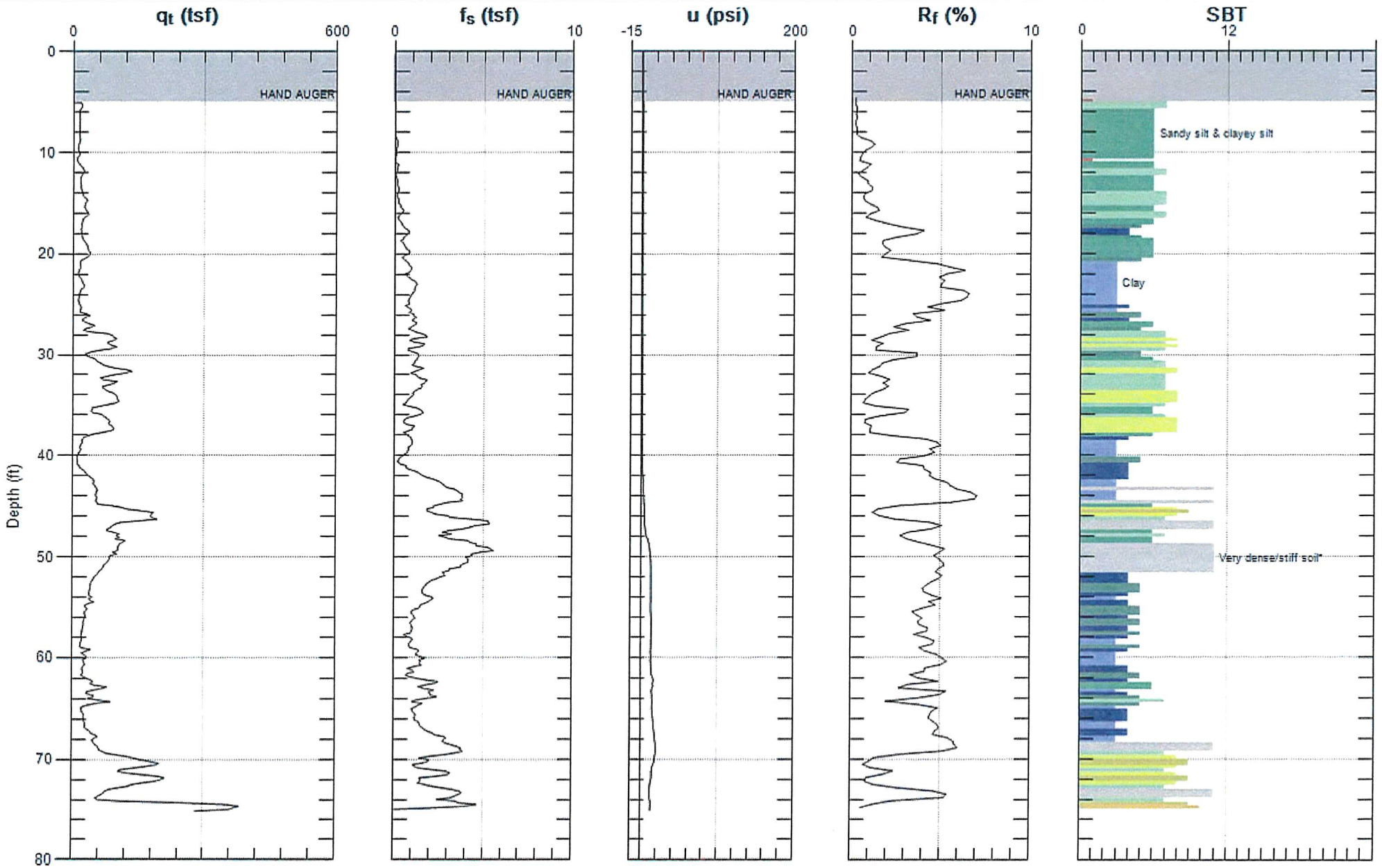
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-18

Engineer: J.BARTON
Date: 5/11/2015 12:02



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

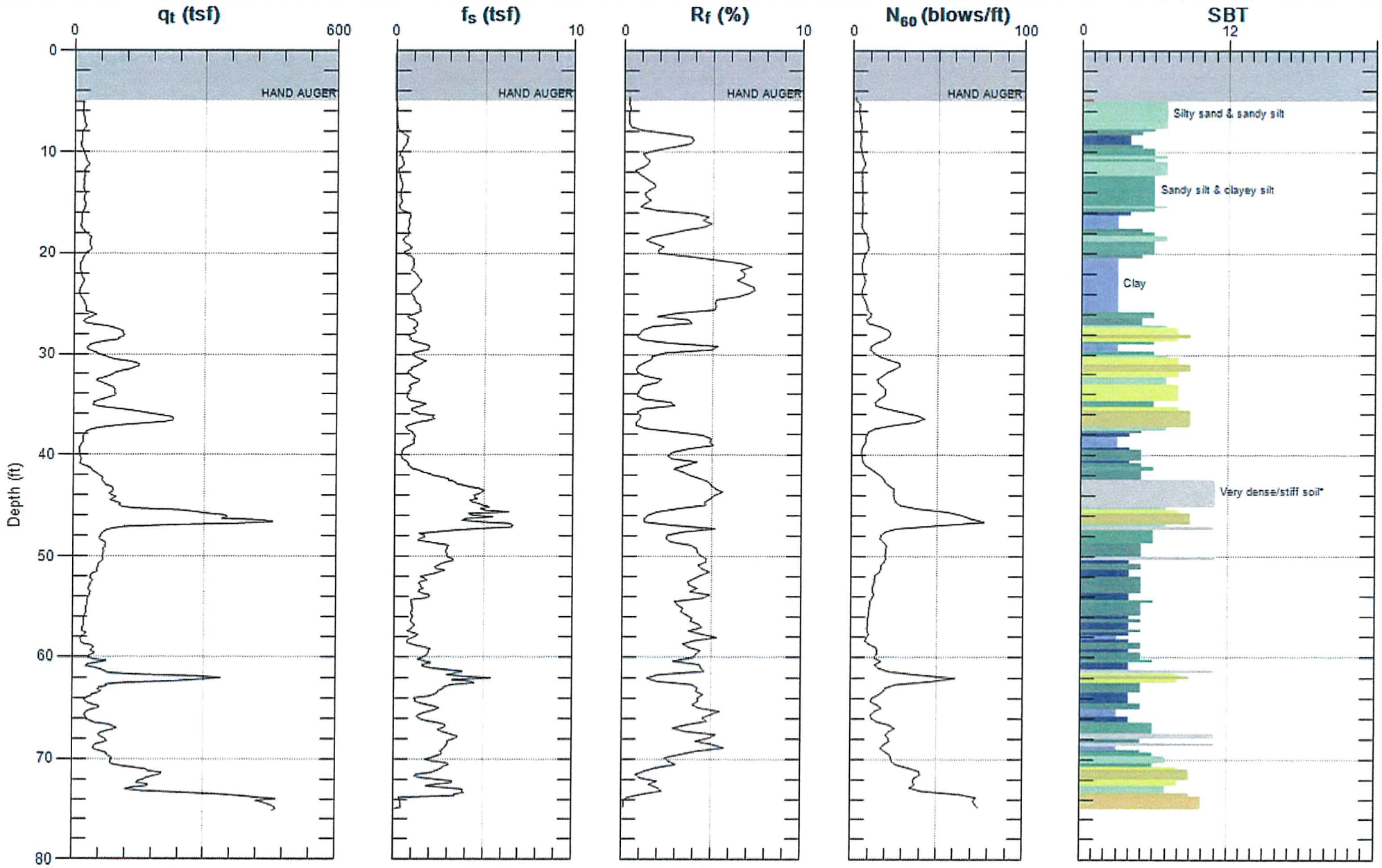
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-19

Engineer: J.BARTON
Date: 5/11/2015 10:39



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

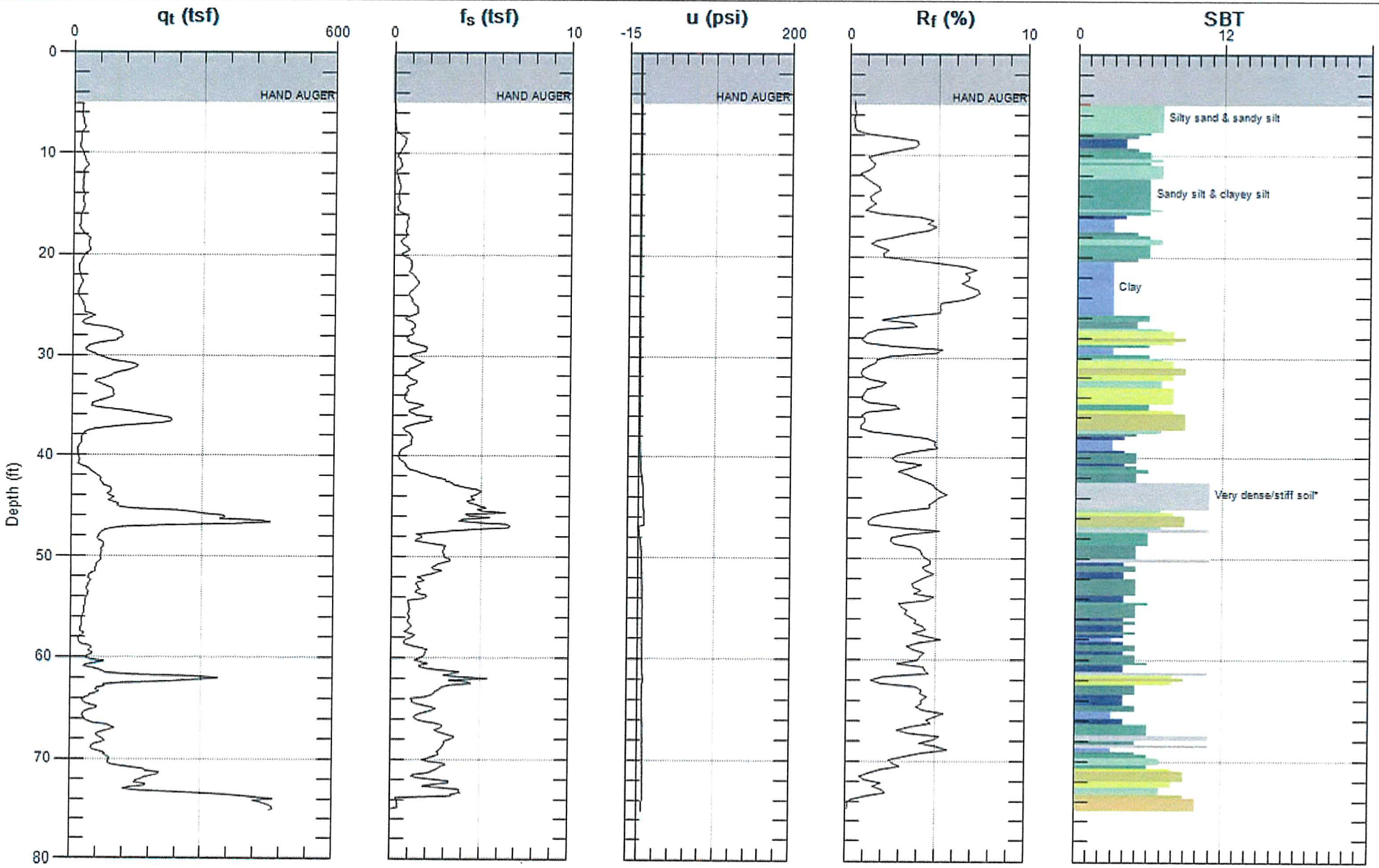
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-19

Engineer: J.BARTON
Date: 5/11/2015 10:39



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

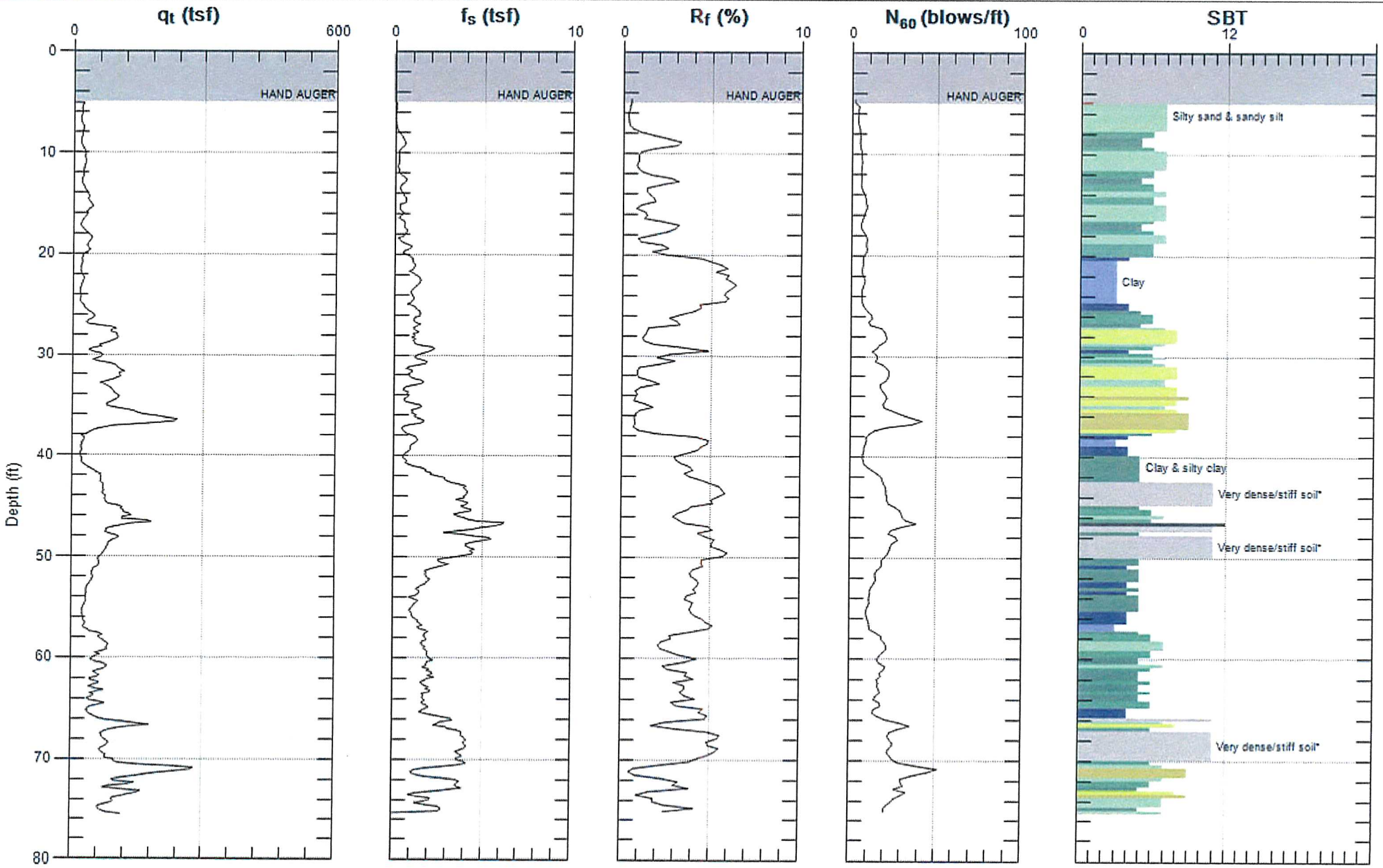
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-20

Engineer: J.BARTON
Date: 5/11/2015 09:37



Max. Depth: 75.459 (ft)
Avg. Interval: 0.328 (ft)

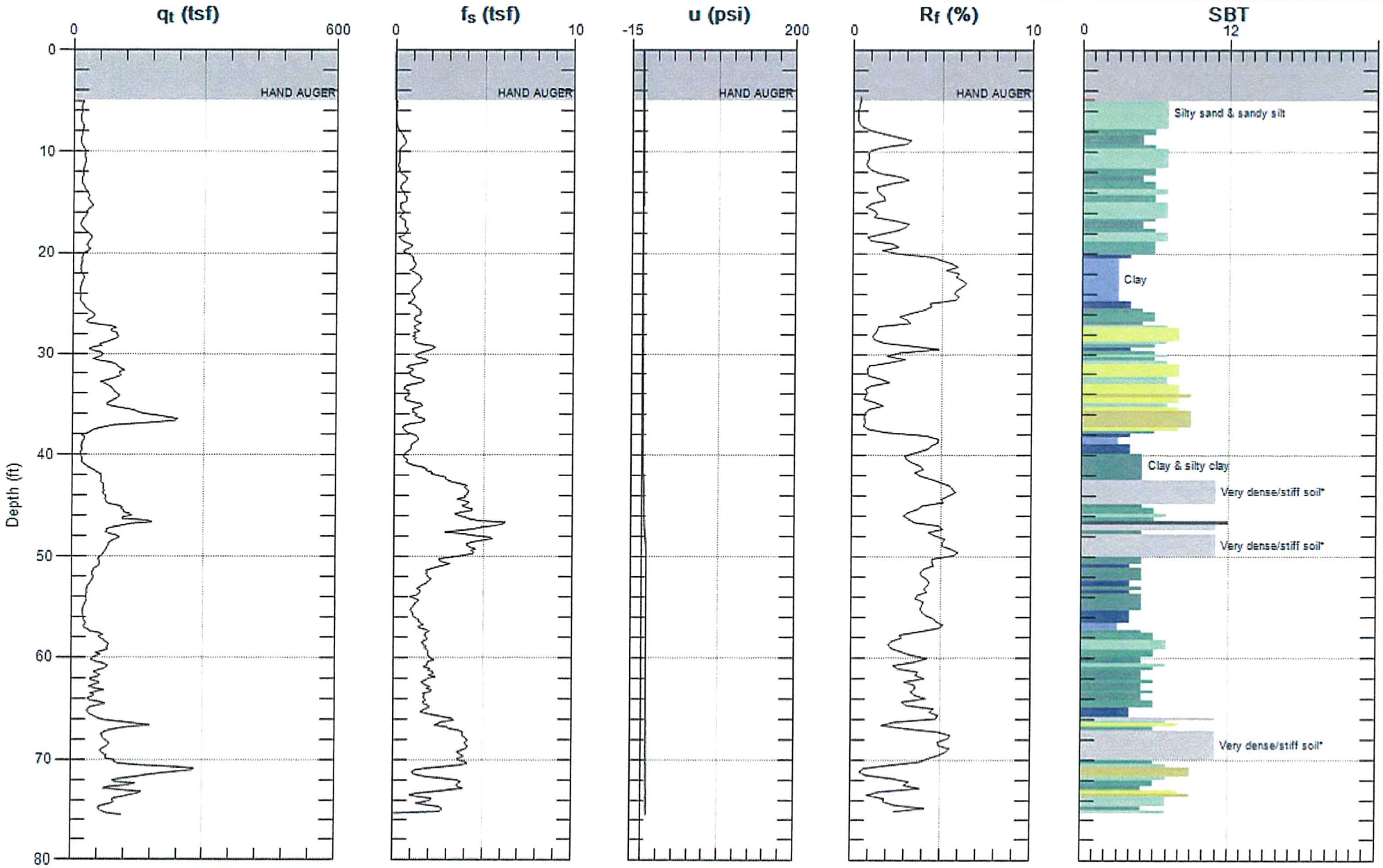
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-20

Engineer: J.BARTON
Date: 5/11/2015 09:37



Max. Depth: 75.459 (ft)
Avg. Interval: 0.328 (ft)

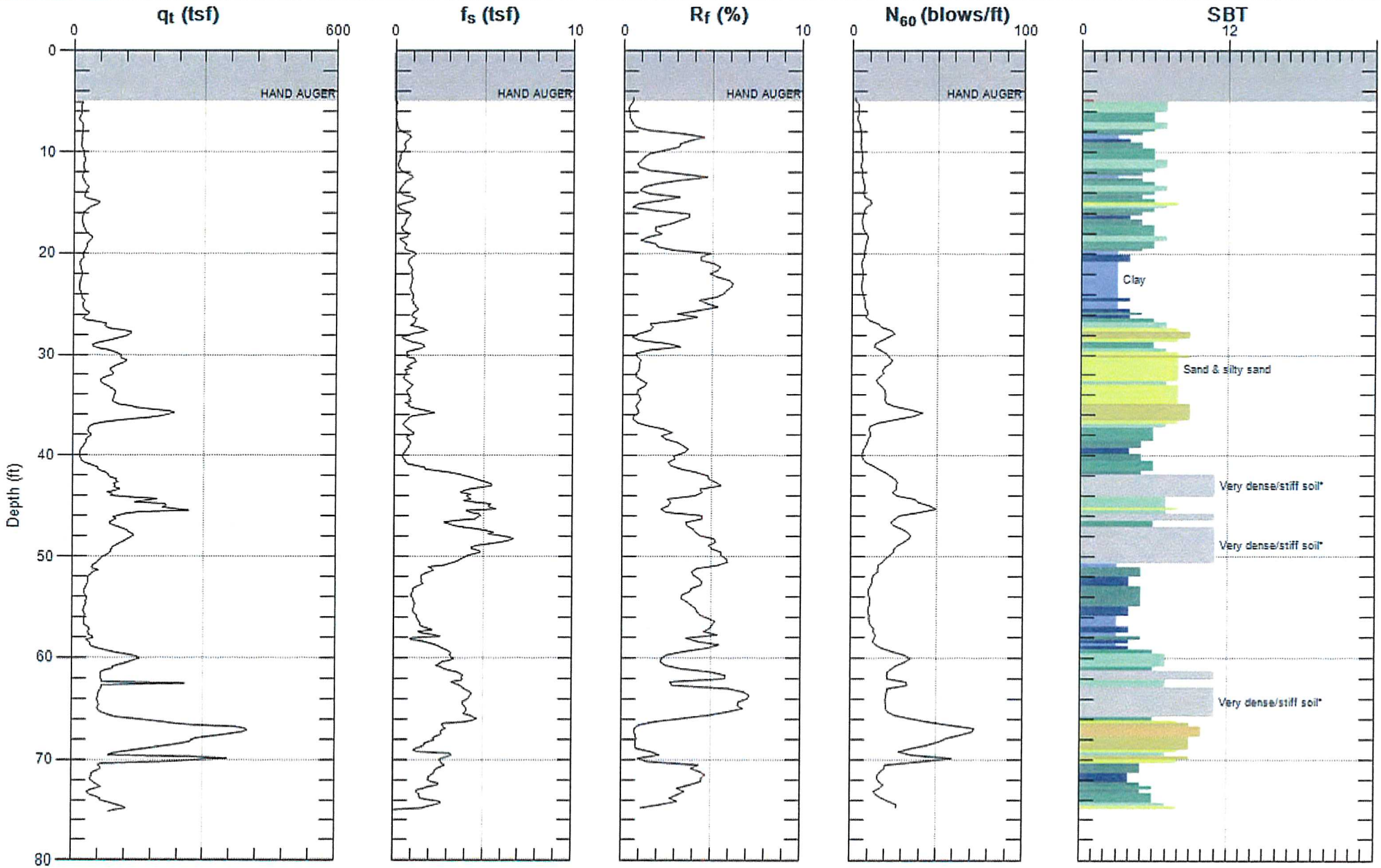
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-21

Engineer: J.BARTON
Date: 5/11/2015 07:38



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

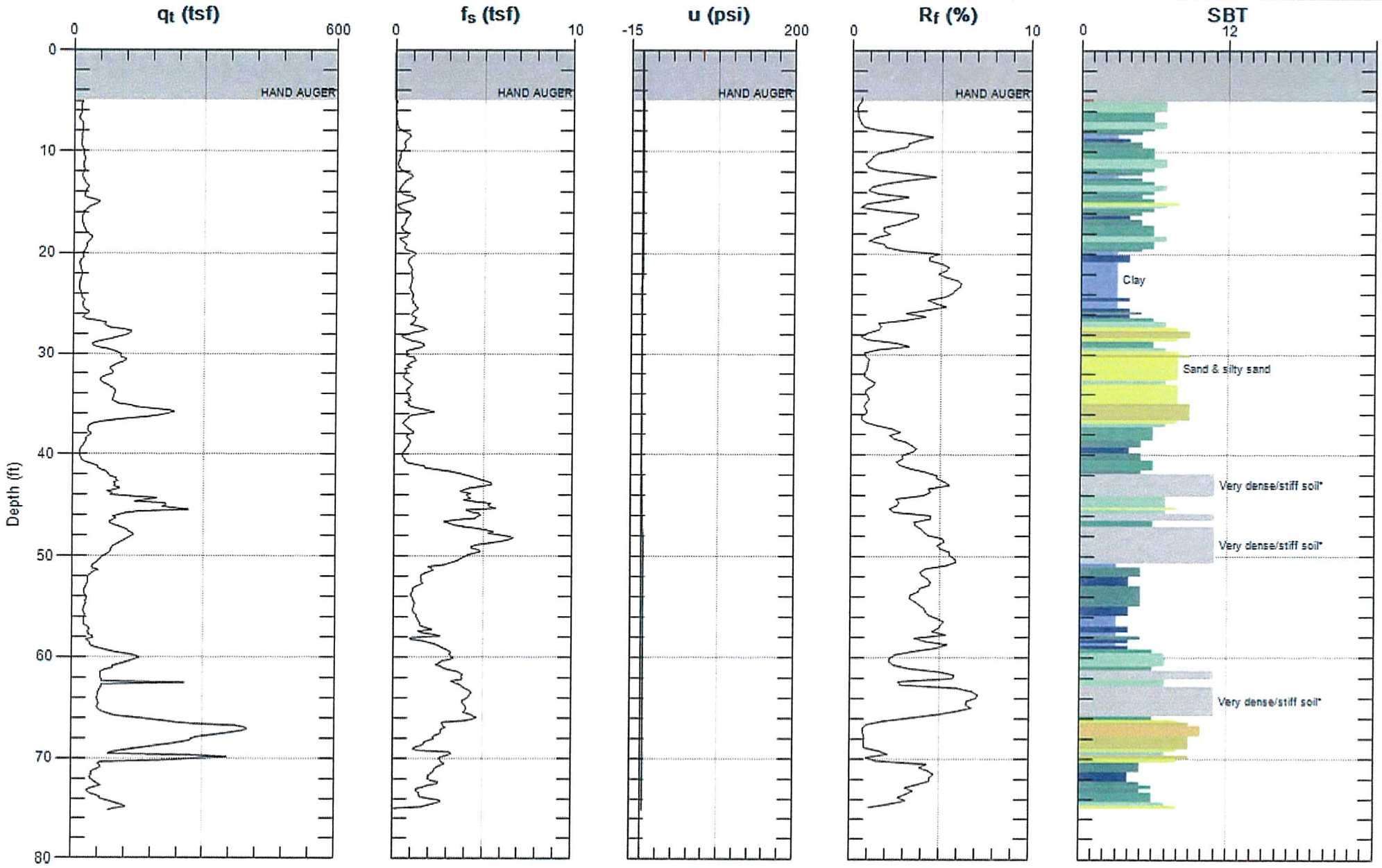
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-21

Engineer: J.BARTON
Date: 5/11/2015 07:38



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

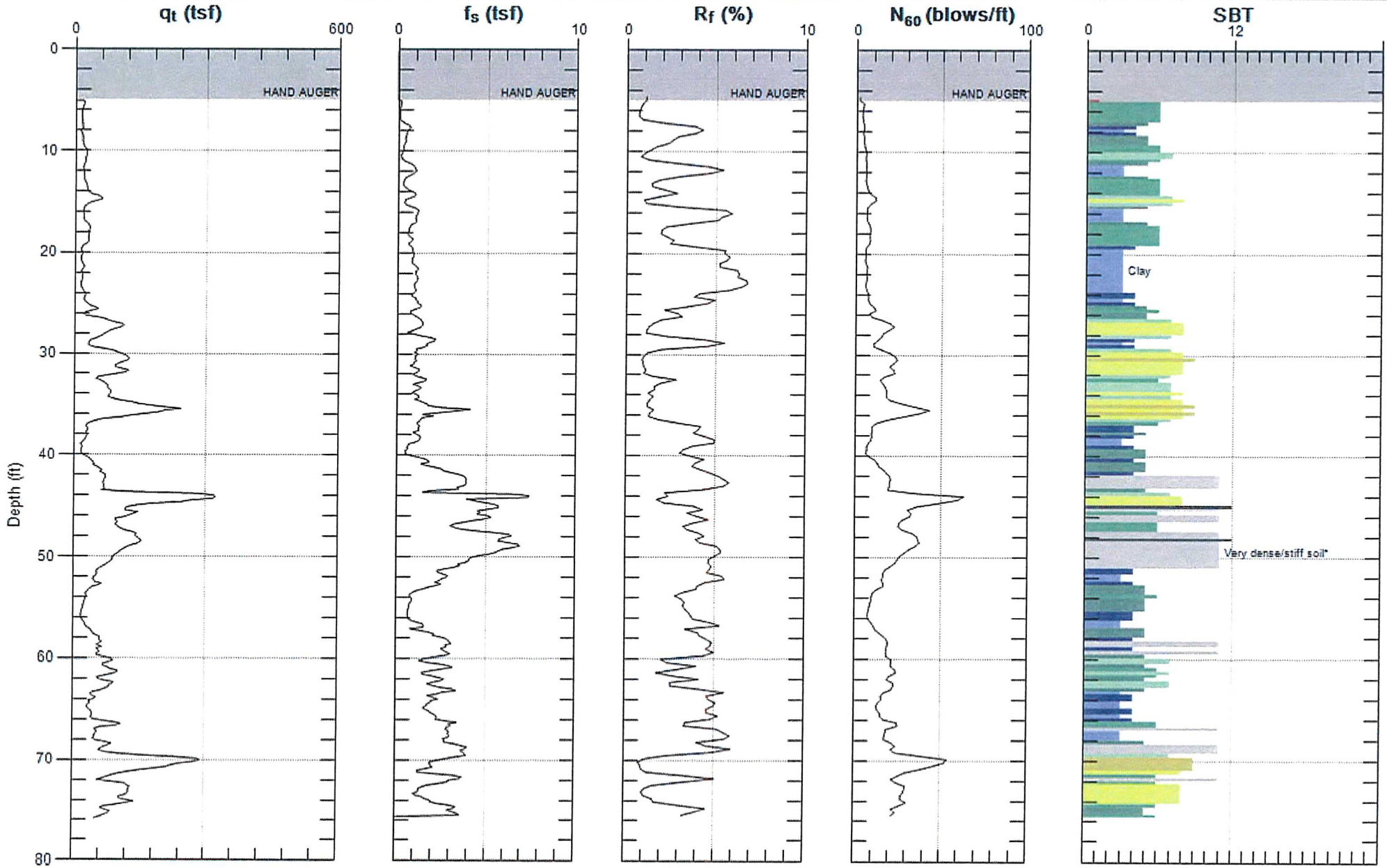
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-22

Engineer: J.BARTON
Date: 5/12/2015 11:03



Max. Depth: 75.787 (ft)
Avg. Interval: 0.328 (ft)

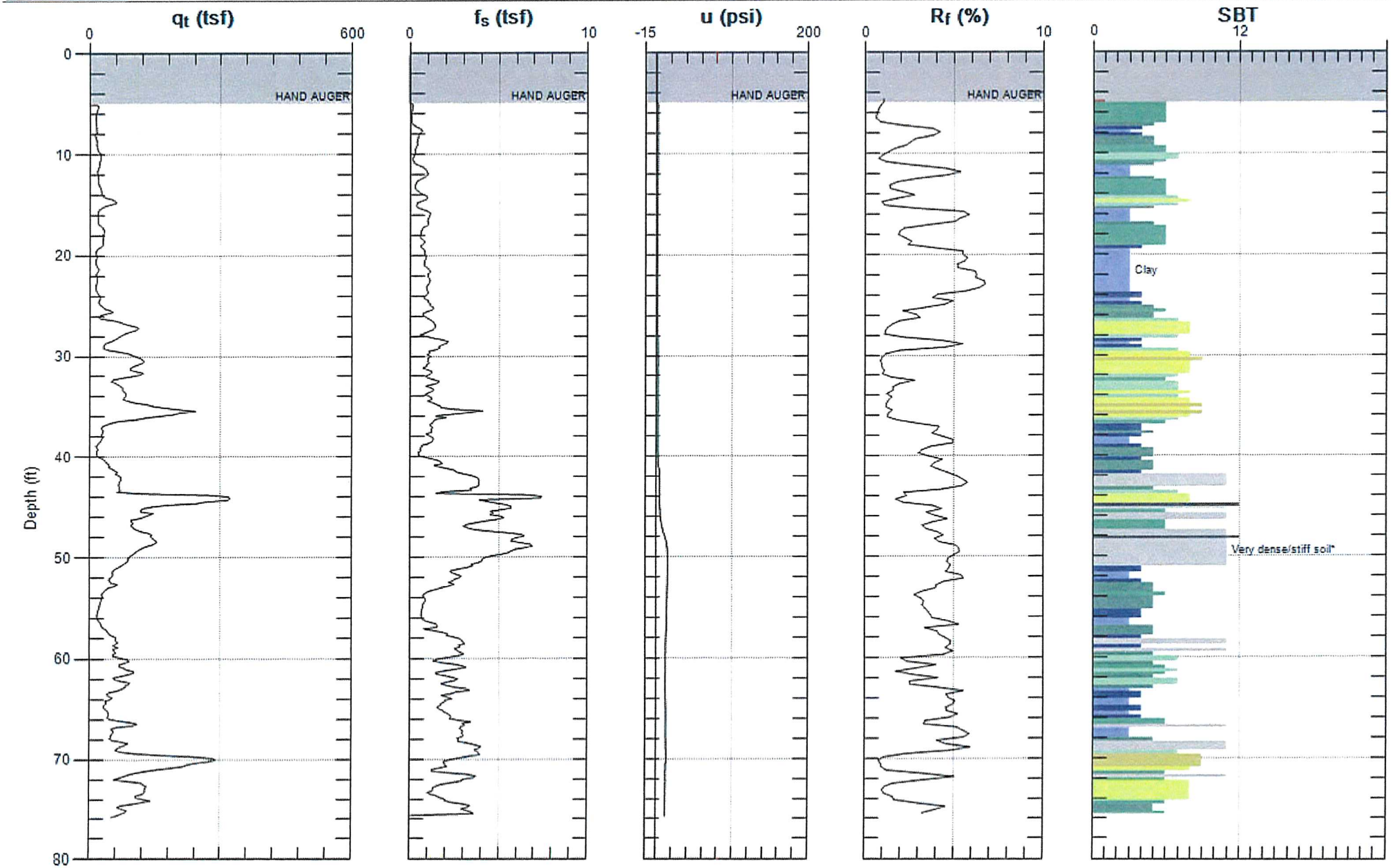
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-22

Engineer: J.BARTON
Date: 5/12/2015 11:03



Max. Depth: 75.787 (ft)
Avg. Interval: 0.328 (ft)

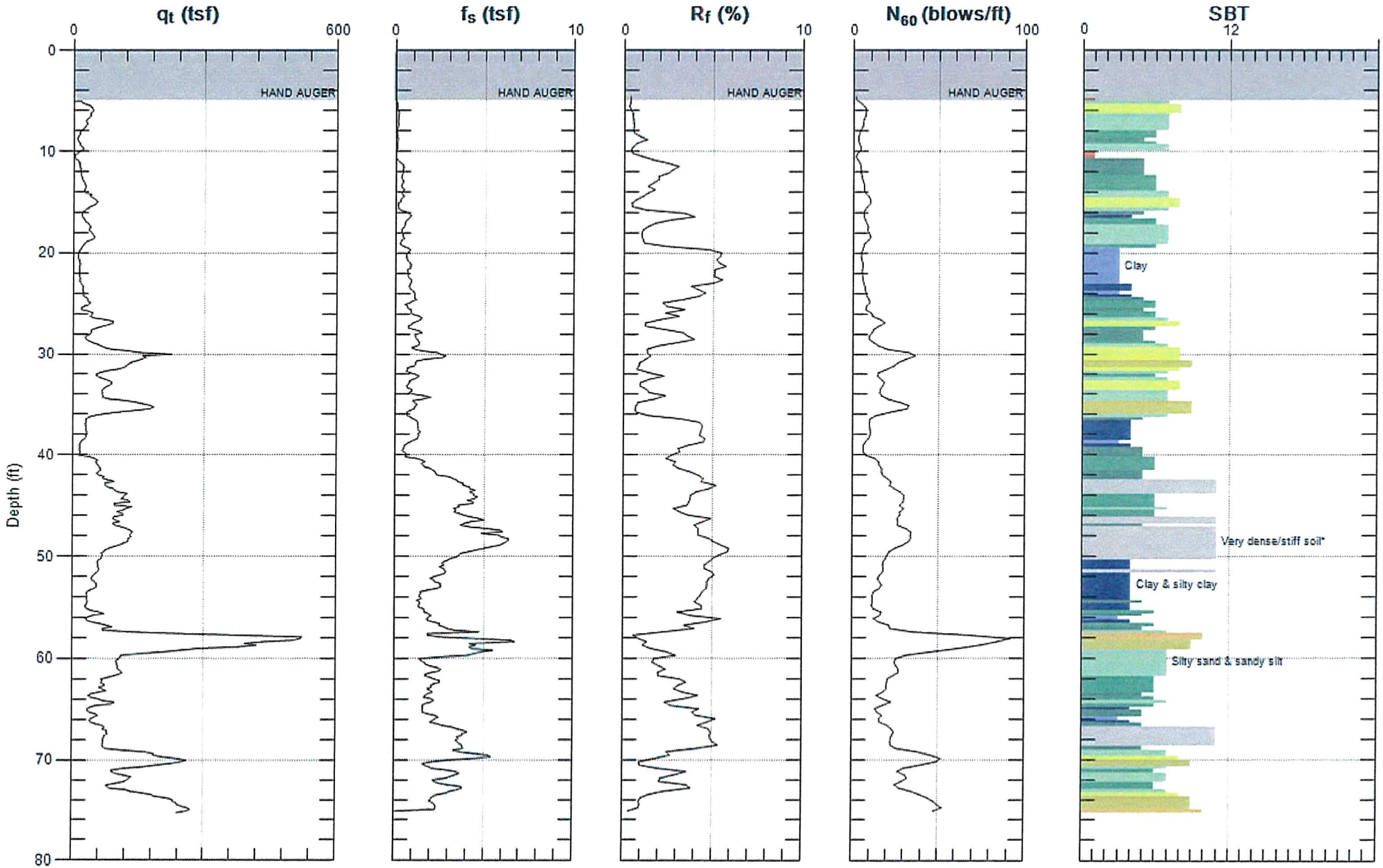
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-23

Engineer: J.BARTON
Date: 5/12/2015 10:04



Max. Depth: 75.295 (ft)
Avg. Interval: 0.328 (ft)

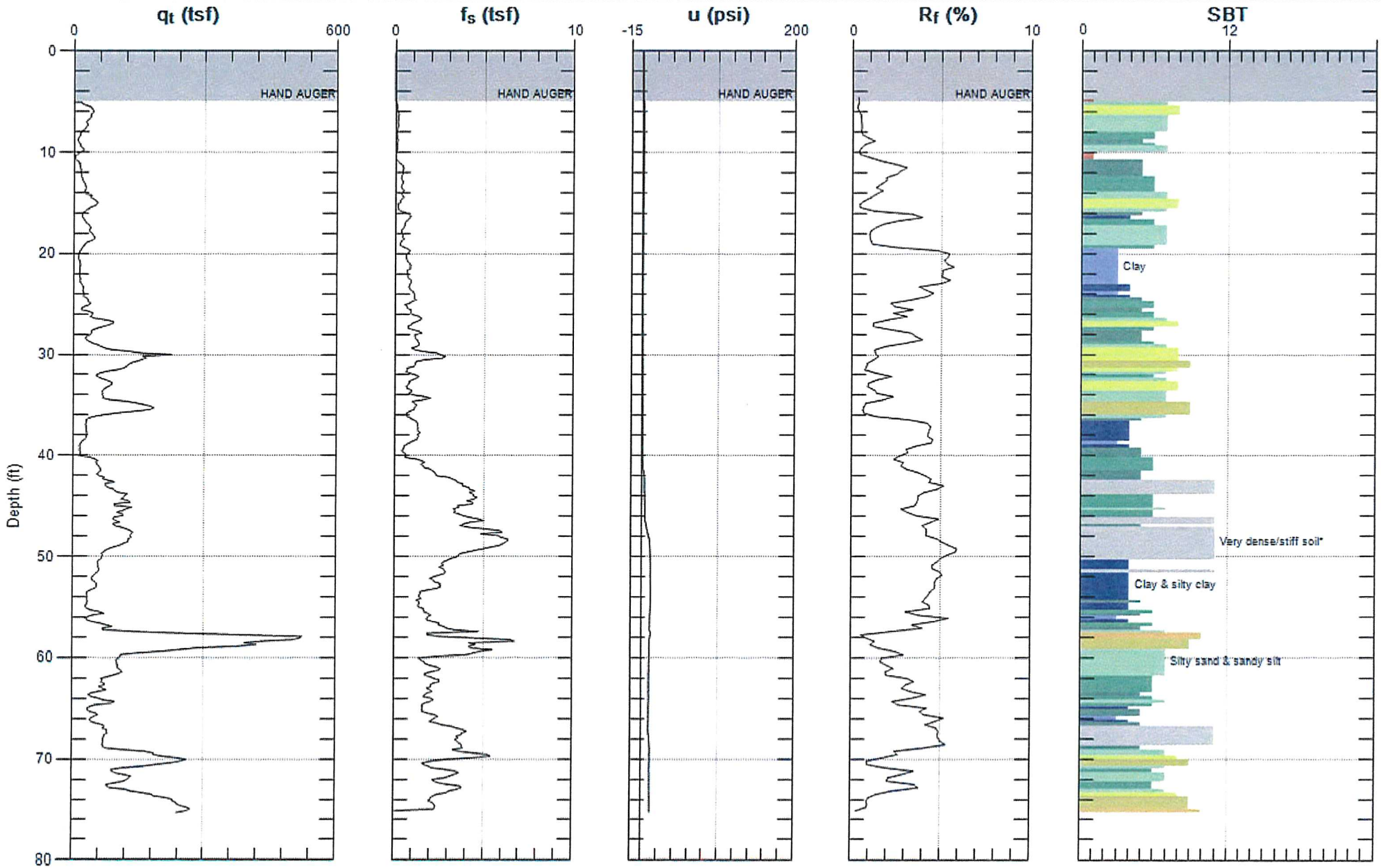
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-23

Engineer: J.BARTON
Date: 5/12/2015 10:04



Max. Depth: 75.295 (ft)
Avg. Interval: 0.328 (ft)

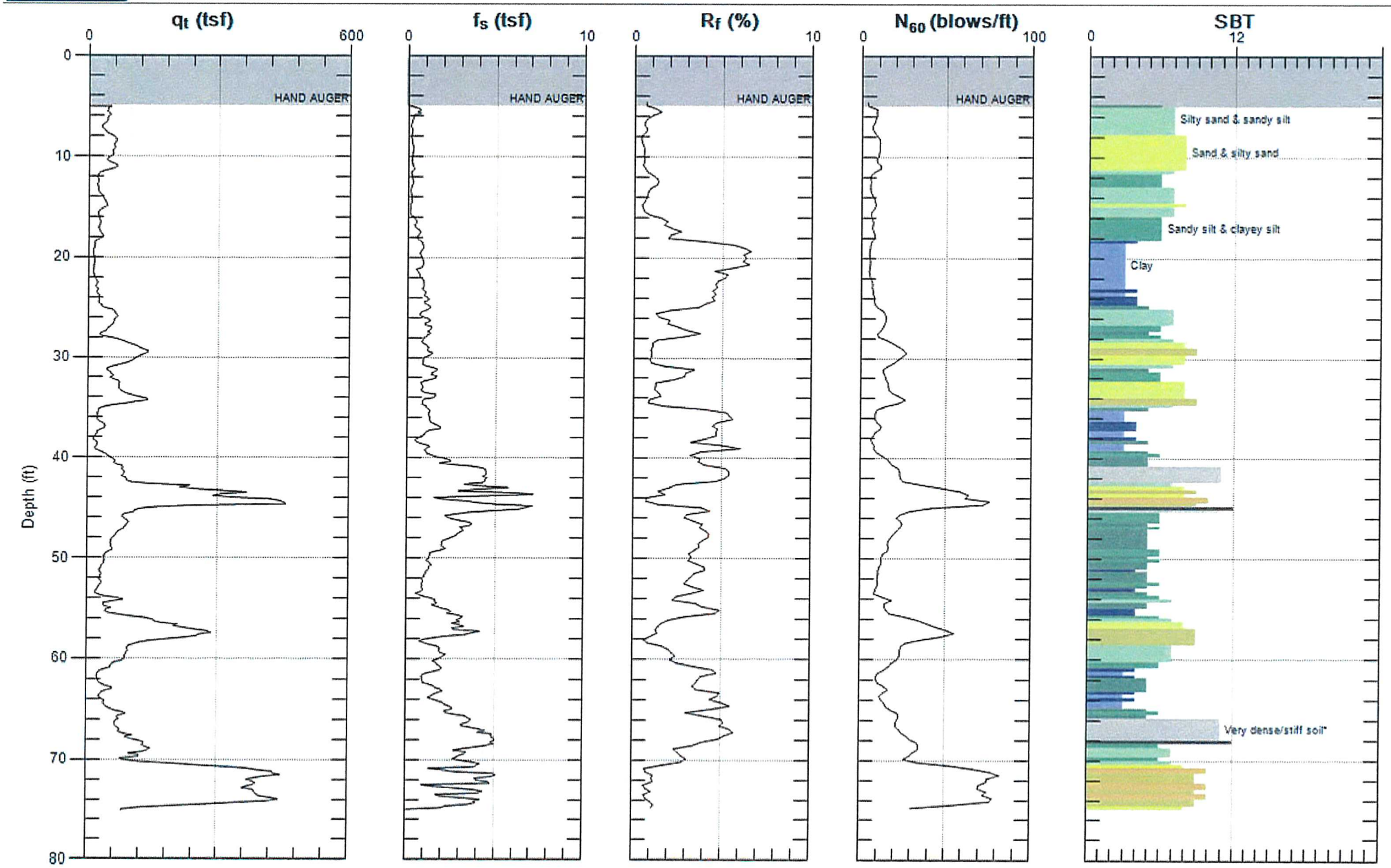
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-24

Engineer: J.BARTON
Date: 5/12/2015 08:53



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

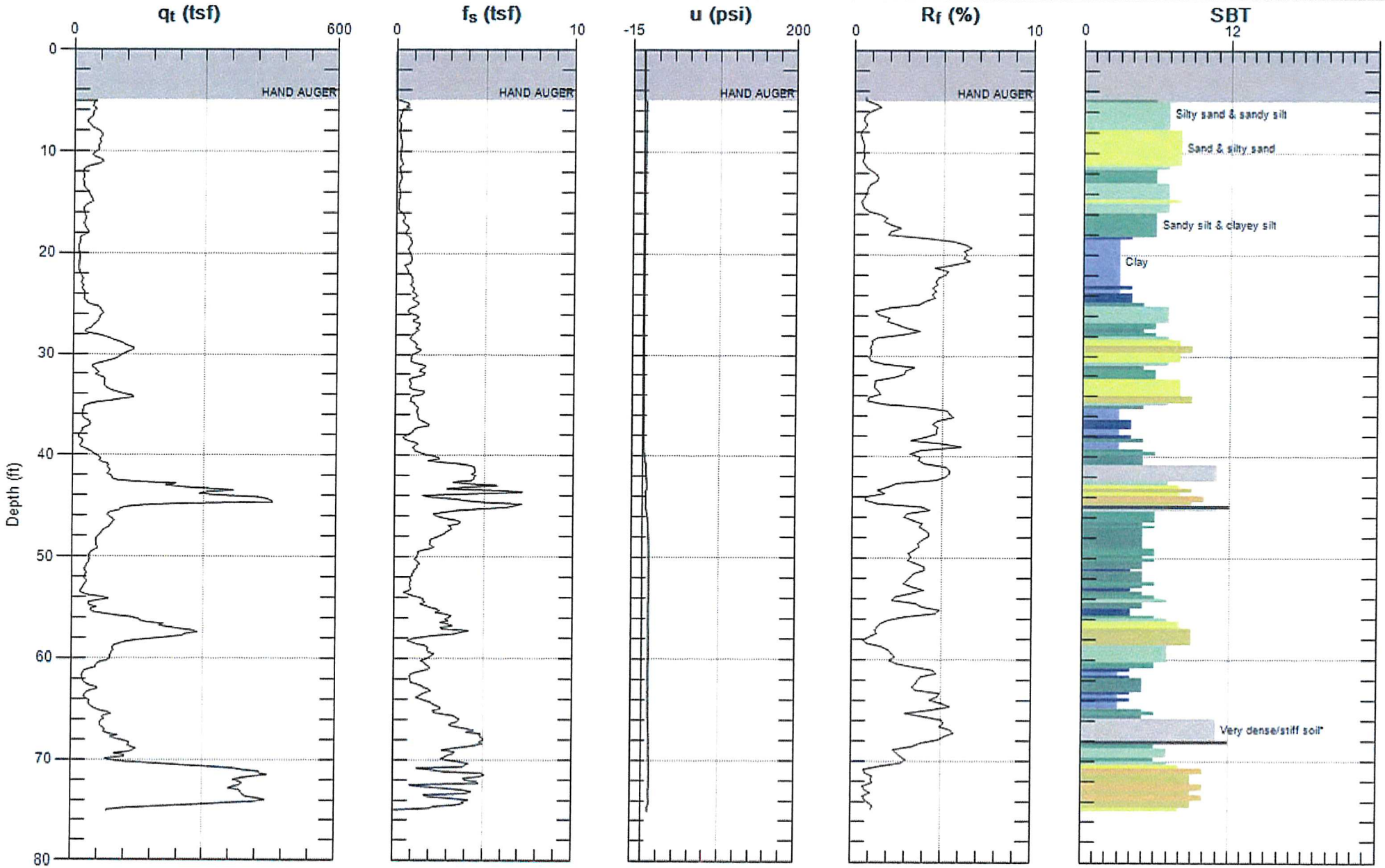
SBT: Soil Behavior Type (Robertson 1990)

GREGG

NINYO & MOORE

Site: HOLLYWOOD COURT
Sounding: CPT-24

Engineer: J.BARTON
Date: 5/12/2015 08:53



Max. Depth: 75.131 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

APPENDIX C

LABORATORY TESTING

In-Place Moisture and Density Tests

The moisture content and dry density of relatively undisturbed samples obtained from the exploratory excavations were evaluated in general accordance with ASTM D 2937. The test results are presented on the logs of the exploratory excavations in Appendix A.

200 Wash

An evaluation of the percentage of particles finer than the No. 200 sieve in selected soil samples was performed in general accordance with ASTM D 1140. The results of the tests are presented on Figures C-1.

Atterberg Limits

A test was performed on a selected representative fine-grained soil sample to evaluate the liquid limit, plastic limit, and plasticity index in general accordance with ASTM D 4318. The test results were utilized to evaluate the soil classification in accordance with the USCS. The test results and classification are shown on Figure C-2.

DRAFT

Consolidation Tests

Consolidation tests were performed on selected relatively undisturbed soil samples in general accordance with ASTM D 2435. The samples were inundated during testing to represent adverse field conditions. The percent of consolidation for each load cycle was recorded as a ratio of the amount of vertical compression to the original height of the sample. The results of the tests are summarized on Figures C-3 and C-4.

Proctor Density Tests

The maximum dry density and optimum moisture content of a selected representative soil sample were evaluated using the Modified Proctor method in general accordance with ASTM D 1557. The results of the test is summarized on Figure C-5.

Direct Shear Tests

Direct shear tests were performed on a remolded samples in general accordance with ASTM D 3080 to evaluate the shear strength characteristics of selected materials. The samples were inundated during shearing to represent adverse field conditions. The results are shown on Figure C-6.

Soil Corrosivity Tests

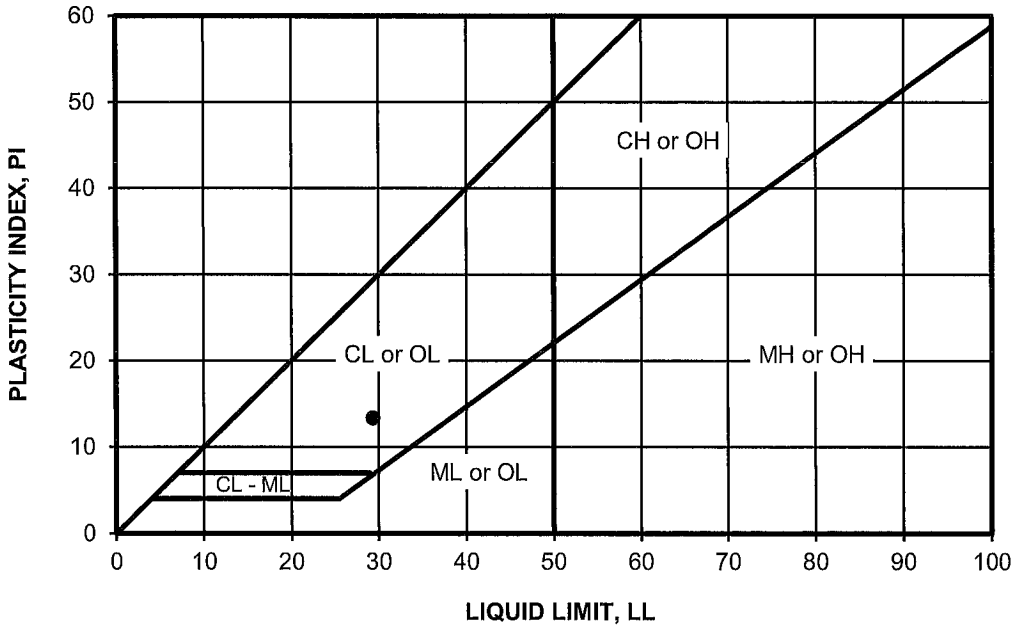
Soil pH, and resistivity tests were performed on representative samples of the on-site soils in general accordance with CT 643. The soluble sulfate and chloride content of selected samples were evaluated in general accordance with CT 417 and CT 422, respectively. The test results are presented on Figure C-7.

SAMPLE LOCATION	SAMPLE DEPTH (FT)	DESCRIPTION	PERCENT PASSING NO. 4	PERCENT PASSING NO. 200	USCS (TOTAL SAMPLE)
B-1	5.0-6.5	CLAYEY SAND	95	36	SC
B-1	41.0-41.5	SANDY CLAY	97	60	CL
B-2	1.0-5.0	CLAYEY SAND	94	34	SC

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 1140

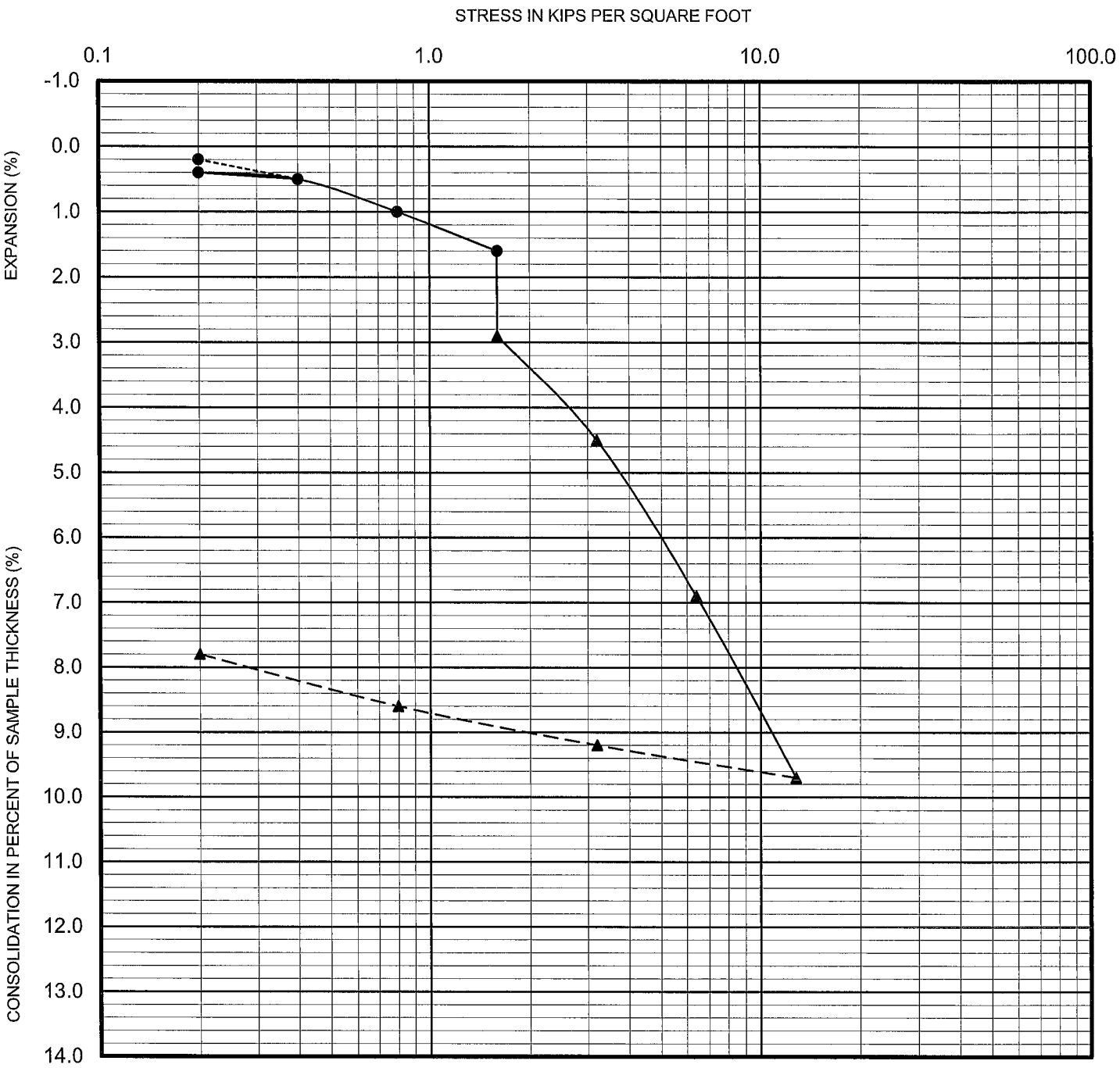
Ninyo & Moore	NO. 200 SIEVE ANALYSIS	FIGURE
PROJECT NO. 402132007 / DATE 6/15	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	C-1

SYMBOL	LOCATION	DEPTH (FT)	LIQUID LIMIT, LL	PLASTIC LIMIT, PL	PLASTICITY INDEX, PI	USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve)	USCS (Entire Sample)
●	B-2	25.0-26.5	29	16	13	CL	CL



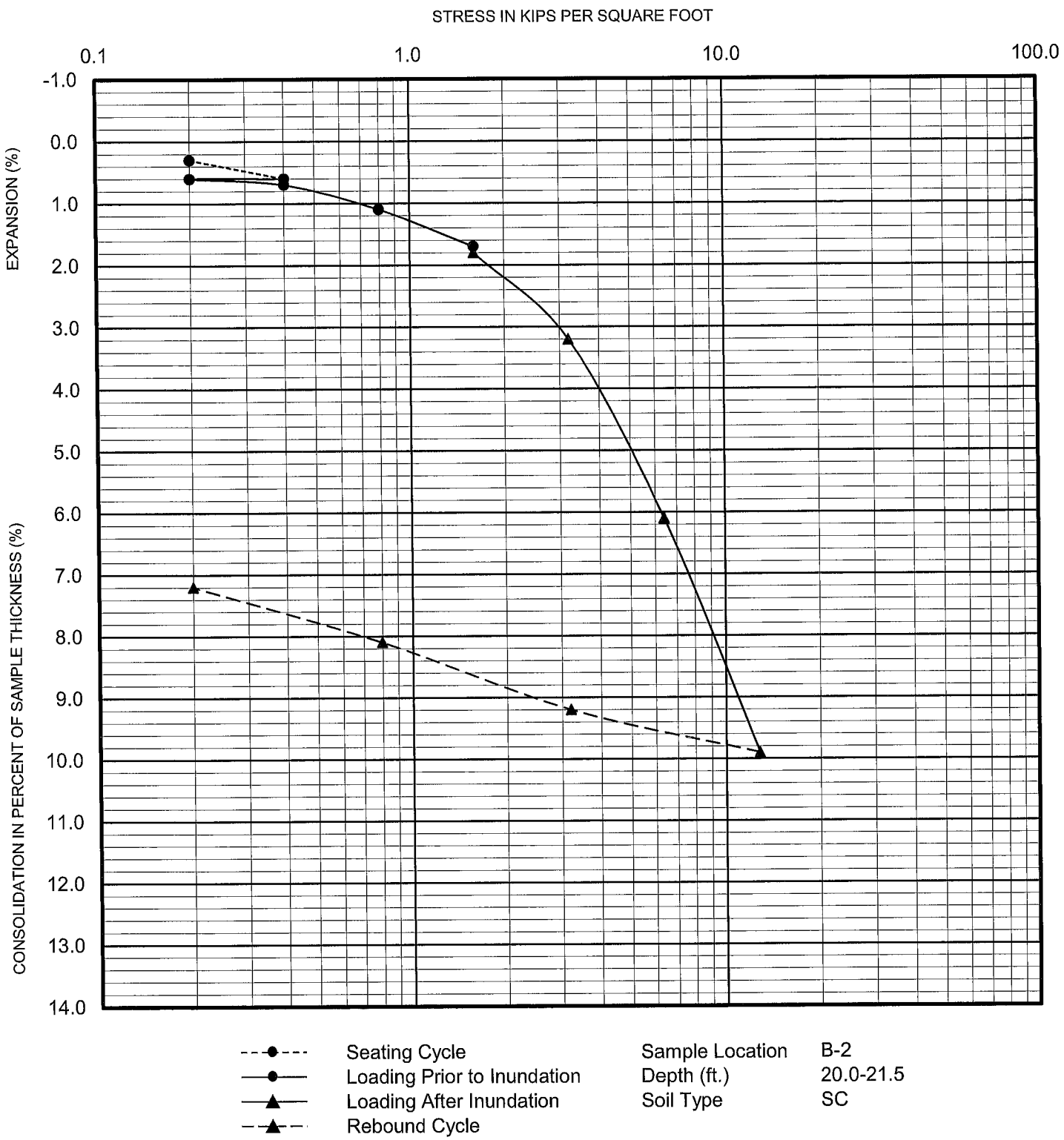
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Ninyo & Moore	ATTERBERG LIMITS TEST RESULTS	FIGURE
PROJECT NO. 402132007 / DATE 6/15	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	C-2



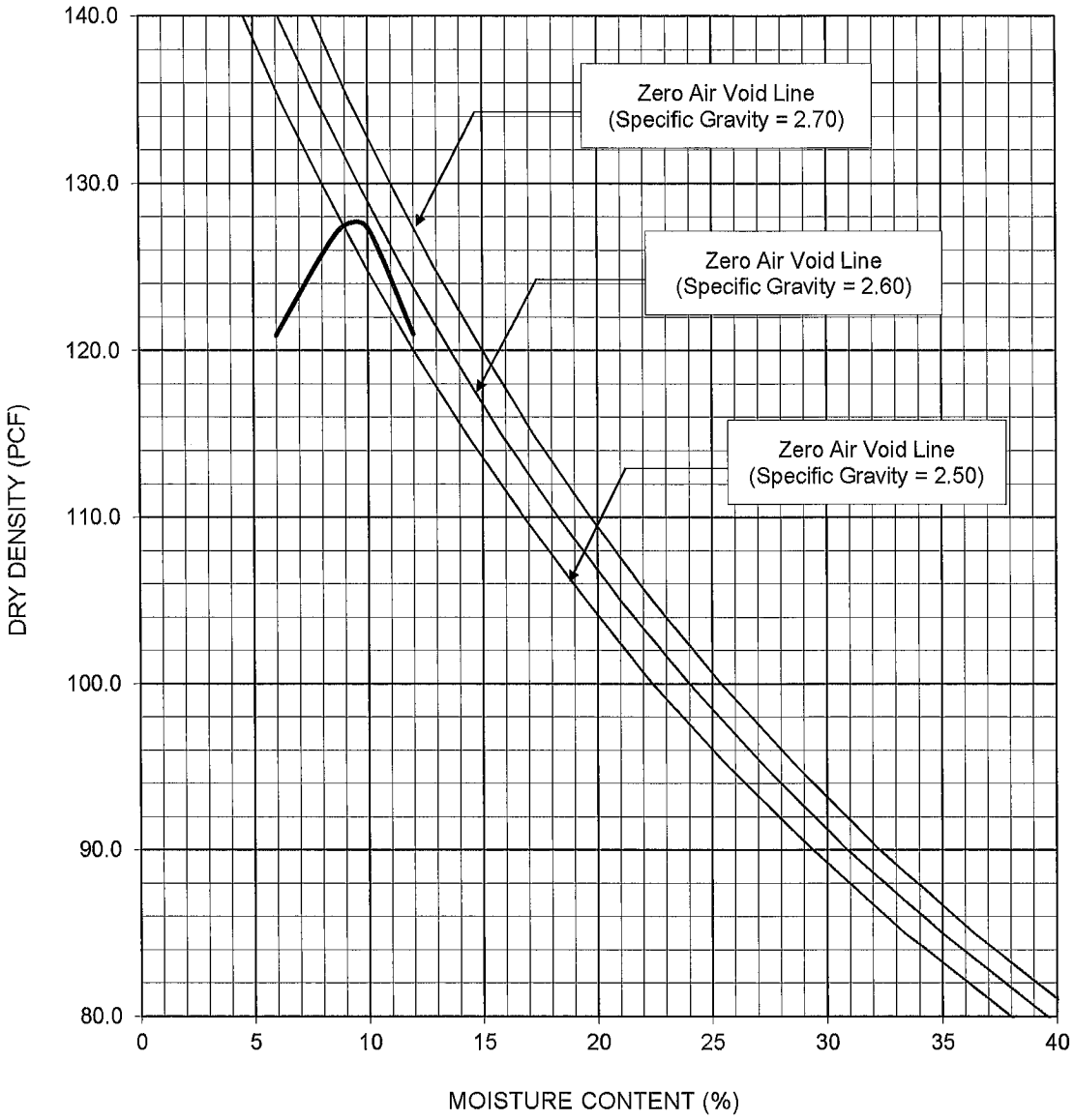
PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2435

Ninyo & Moore	CONSOLIDATION TEST RESULTS	FIGURE
PROJECT NO. 402132007 / DATE 6/15	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	C-3



PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 2435

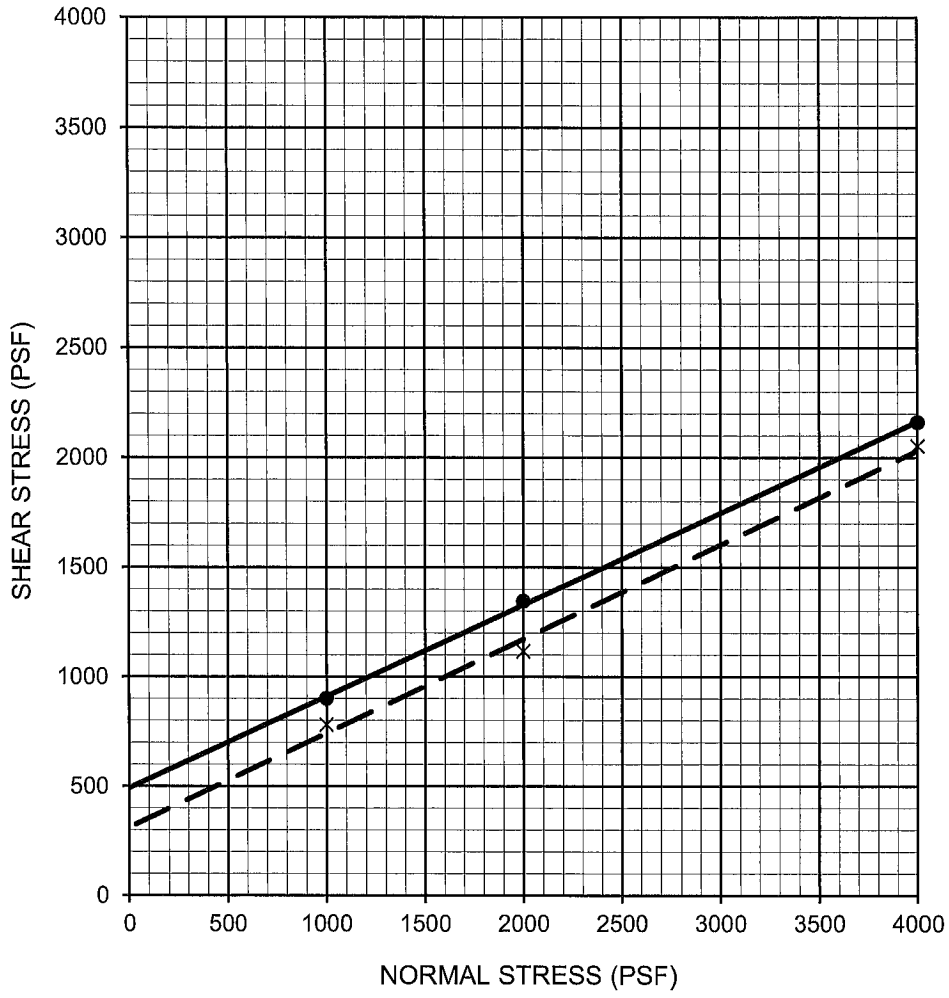
Ninyo & Moore	CONSOLIDATION TEST RESULTS	FIGURE
PROJECT NO. 402132007 / DATE 6/15	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	C-4



Sample Location	Depth (ft)	Soil Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-2	1.0-5.0	BROWN CLAYEY SAND	127.5	9.0
Dry Density and Moisture Content Values Corrected for Oversize (ASTM D 4718-87)				

PERFORMED IN GENERAL ACCORDANCE WITH ☑ ASTM D 1557 ☐ ASTM D 698 METHOD ☐ A ☑ B ☐ C

Ninyo & Moore		PROCTOR DENSITY TEST RESULTS	FIGURE
PROJECT NO.	DATE	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	C-5
402132007	6/15		



Description	Symbol	Sample Location	Depth (ft)	Shear Strength	Cohesion, c (psf)	Friction Angle, ϕ (degrees)	Soil Type
CLAYEY SAND	—●—	B-2	1.0-5.0	Peak	492	23	SC
CLAYEY SAND	- - X - -	B-2	1.0-5.0	Ultimate	312	23	SC

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 3080 ON A SAMPLE REMOLDED TO 90% RELATIVE COMPACTION.

Ninyo & Moore		DIRECT SHEAR TEST RESULTS	FIGURE
PROJECT NO.	DATE	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	C-6
402132007	6/15		

SAMPLE LOCATION	SAMPLE DEPTH (FT)	pH [1]	RESISTIVITY [1] (Ohm-cm)	SULFATE CONTENT [2]		CHLORIDE CONTENT [3] (ppm)
				(ppm)	(%)	
B-1	15.0-20.0	7.6	1,100	120	0.012	45
B-2	1.0-5.0	7.7	2,745	20	0.002	30

[1] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 643
[2] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 417
[3] PERFORMED IN GENERAL ACCORDANCE WITH CALIFORNIA TEST METHOD 422

Ninyo & Moore		CORROSIVITY TEST RESULTS	FIGURE
PROJECT NO.	DATE	HOLLYWOOD COURTHOUSE 5925 HOLLYWOOD BOULEVARD LOS ANGELES, CALIFORNIA	C-7
402132007	6/15		

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 43

May 28, 2020

Tom Brohard and Associates

Eric Bescher, President
Broadway Hollywood Homeowners Association
1645 Vine Street
Los Angeles, CA 90028

SUBJECT: Hollywood Center Project - Draft Environmental Impact Report – Transportation and Traffic Issues

Dear Mr. Bescher:

Tom Brohard, P.E., has reviewed the April 2020 Draft Environmental Impact Report (Draft EIR) and the April 2020 Transportation Assessment for the Proposed Hollywood Center Project bisected by Vine Street just north of Hollywood Boulevard in the Hollywood Community Plan area of the City of Los Angeles. Overall, the Project would contain nearly 1.3 million square feet of developed floor area including 1,005 residential housing units, retail and restaurant uses totaling 30,176 square feet, open space of 166,582 square feet, up to 1,521 vehicle parking spaces, and up to 551 bicycle parking spaces. Four new buildings are proposed including a 35-story building on the West Site, a 46-story building on the East Site, and two 11-story buildings (one on each site) set aside for housing for seniors. The Project also contains a Hotel Option within the East Site, with 220 hotel rooms on Levels 3-12 replacing 104 residential units.

My review disclosed that the Draft EIR and the Transportation Assessment for the Hollywood Center Project are fatally flawed. Several transportation and traffic issues have not been thoroughly or properly studied. This letter points out those deficiencies that must be addressed before considering the Project further.

Education and Experience

Since receiving a Bachelor of Science in Engineering from Duke University in Durham, North Carolina in 1969, I have gained over 50 years of professional traffic engineering and transportation planning experience. I am licensed as a Professional Civil Engineer both in California and Hawaii and as a Professional Traffic Engineer in California. I formed Tom Brohard and Associates in 2000 and have served many diverse communities as the City Traffic Engineer and/or the Transportation Planner. During my career in both the public and private sectors, I have reviewed numerous environmental documents and traffic studies for various projects as shown in a short summary of my experience in the enclosed resume.

Transportation and Traffic Issues

Based on the information in the Draft EIR and the Transportation Assessment, each of the following traffic issues must be fully addressed and evaluated:

81905 Mountain View Lane, La Quinta, California 92253-7611
Phone (760) 398-8885
Email tbrohard@earthlink.net

1) Hollywood/Vine Traffic Impacts Have Not Been Properly Studied – Traffic counts at Hollywood Boulevard and Vine Street of vehicles, bicyclists, and pedestrians were made for the Transportation Assessment on May 23, 2018. Google Earth photographs made on June 8, 2018 as well as the traffic counts made for the Transportation Assessment do not show or consider the diagonal "scramble" crosswalk markings or the "No Right Turn on Red" signing at the intersection installed and then celebrated on August 2, 2018 (see https://www.youtube.com/watch?v=COlpuxNy9c4).

   The Notice of Preparation of the Environmental Impact Report was issued on September 4, 2018. The Transportation Assessment fails to properly study and evaluate the Project traffic impacts at Hollywood/Vine with the "scramble" crosswalks and "No Right Turn on Red" signing that was installed a month earlier. This significant change in the operation of the intersection causes additional congestion, queuing, and delay for vehicles beyond what previously existed without these devices.

   Page 34 of the July 2019 LADOT Transportation Assessment Guidelines requires a quantitative evaluation of the project's expected access and circulation operations. "Project access is considered constrained if the project's traffic would contribute to unacceptable queuing on an Avenue or Boulevard at project driveways or would cause or substantially extend queuing at nearby signalized intersections. Unacceptable or extended queuing may be defined as follows:

   - Spill over from turn pockets into through lanes.
   - Block cross streets or alleys.
   - Contribute to "gridlock" congestion. For the purposes of this section, "gridlock" is defined as the condition where traffic queues between closely spaced intersections and impedes the flow of traffic through upstream intersections."

   Page 12 of the Transportation Assessment identifies Hollywood Boulevard as an Avenue I and Page 13 identifies Vine Street as an Avenue II in the City's Mobility Plan 2035. Queuing has not been evaluated in the Transportation Assessment for Hollywood/Vine before the "scramble" and the "No Right Turn on Red" restrictions were installed or under future scenarios. According to residents living at Hollywood/Vine, queuing has increased substantially since these changes were made.

   The 96 residential units at 1645 Vine Street have only a single alley/driveway that accesses their parking lot from the west side of Vine Street only 160 feet south of Hollywood Boulevard. Traffic on Vine Street has deteriorated with the "scramble" and "No Right Turn on Red" as it is now frequently queued beyond their alley/driveway, blocking turns into

and out of Vine Street. This is a significant safety concern to the residents as well as the City's Police and Fire Departments.

Page 48 of the Transportation Assessment states "There are conditions at specific locations, such as congestion, queuing, and pedestrian activity, where the CMA (Critical Movement Analysis) methodology can be adjusted to more accurately reflect intersection operating conditions at specific intersections. Additionally, the analysis includes several intersections along major thoroughfares that experience heavy congestion during morning and evening peak traffic periods. The congestion along these streets can result in a reduction in the vehicles counted in the peak direction of travel and reduced capacity during peak travel times. Based on field observations, this reduction in vehicle throughput was determined to inaccurately reflect the existing Level of Service (LOS) experienced by motorists at four of the study intersections. At these intersections, the LOS that is presented in the analysis was adjusted to reflect the observed conditions of a worse LOS than was initially calculated using the CMA methodology."

The CMA methodology formerly used by the City of Los Angeles involved an analysis of the critical movements at intersections, essentially the larger sum of the time required by the through movement and the opposing left turn movement in each direction. Depending on the magnitude of the sums without and then with Project traffic added as well as the starting point, traffic impacts were considered significant requiring mitigation, or not. With the recent change in state law involving CEQA (the California Environmental Quality Act), agencies are now required to examine VMT (vehicle miles traveled) as the only measure of significant impacts. The Level of Service (LOS) using the CMA methodology was provided in the Transportation Assessment at several intersections for information but it is no longer used to identify significant traffic impacts.

Calculations in the Transportation Assessment for Hollywood Boulevard and Vine Street, one of the four intersections where LOS adjustments were made, indicate volume to capacity (V/C) ratios of 0.685 and 0.679 respectively in the AM and the PM peak hours for existing conditions in Year 2018. These calculations do not properly account for the "scramble" and "No Right Turn on Red" conditions. Without LOS adjustments, those V/C values equate to LOS B. In Table 6A of the Transportation Assessment, the LOS for both peak hours for Hollywood/Vine was adjusted from B to "F*", with the footnote indicating "* LOS based on field observations since the CMA methodology does not account for vehicular queues along corridors, pedestrians, conflicts, etc. in every case. Thus, the calculated average operating conditions may appear better than what is observed in the field."

Additional time is required for pedestrians to diagonally cross Hollywood Boulevard and Vine Street. Right turns on red are now prohibited in all directions at Hollywood Boulevard and Vine Street. Neither of these measures were properly reflected in any LOS calculations in the Transportation Assessment. None of the calculations properly reflect the impacts of the "scramble" and the "No Right Turn on Red".

In their April 10, 2020 review of the Transportation Assessment, LADOT admits that "...the trips generated by the proposed development will likely result in adverse circulation conditions at several locations. DOT has reviewed this analysis and determined that it adequately discloses operational concerns." Unfortunately, the significant transportation and traffic impacts have not been addressed or mitigated by the Project Requirements, Project Design Features, or other proposed measures.

The Hollywood Center Project is proposed on both side of Vine Street less than 400 feet north of Hollywood Boulevard. With generous credits and unsupported reductions for a Transportation Demand Management (TDM) Program that has not yet been developed or adopted, the Hollywood Center Project is still forecast to generate at least 10,564 daily trips, including 792 trips in the AM peak hour and 1,201 trips in the PM peak hour (Tables 7 and 8 of the Transportation Assessment). At least 60 to 80 percent of the trips for the residential, commercial and hotel portions of the Project will travel through Hollywood Boulevard and Vine Street (Figures 7A, 7B, and 7C of the Transportation Assessment). The additional trips to and from the Hollywood Center Project will cause additional queuing and congestion at Hollywood/Vine above and beyond what already occurs without the Project, making resident vehicular access to and from 1645 Vine Street even more difficult.

In addition to adding many more daily and peak hour trips to the already overburdened conditions at Hollywood/Vine, the Hollywood Center Project will also add many more pedestrian and bicycle trips through that intersection. TDM items, while intended to reduced solo peak hour vehicle trips, will also add significant volumes of pedestrians and bicyclists to the congestion and queuing at Hollywood/Vine.

2) <u>Trip Reductions with TDM Plan Are Overstated and Overemphasized</u> – TDM (Transportation Demand Management) Plans are typically utilized to reduce single occupant vehicle trips during normal worker commute hours. These plans are most effective when most workers leave from or arrive at their residences at the same time. Page 4 of the April 10, 2020 LADOT letter identifies 29 possible TDM strategies, many of which have already been assumed as "given" in the LADOT VMT Calculator.

At this point, there is no TDM Program for the Hollywood Center Project. Instead, LADOT will require that a "...preliminary TDM Program shall be prepared and provided for DOT review prior to the issuance of the first building permit for this project and a final TDM program approved by DOT is required prior to the issuance of the first certificate of occupancy for the project." The Transportation Assessment cannot rightfully take credits for a TDM Program that does not exist.

Furthermore, there is no program to periodically monitor the effectiveness of the yet to be developed TDM Program for the Hollywood Center Project. In addition, there are no enforcement provisions for the TDM Program if the trip reduction goals are not achieved. Regular monitoring and enforcement provisions must be added to the TDM Program to ensure that the assumed trip reduction goals are achieved or exceeded.

3) TSM Improvements Have Not Been Quantified – Page 5 of the April 10, 2020 LADOT letter indicates that the Hollywood Center Project will be required to install new conduits and cables to increase capacity for additional CCTV cameras for real-time video monitoring of intersection, corridor, transit, and pedestrian operations in the Hollywood area along portions of Gower Street and Hollywood Boulevard. The letter concludes that these improvements will provide a system-wide benefit by reducing delays experienced by motorists at study intersections. The benefit of these improvements must be quantified.

   The TSM Improvements along Hollywood Boulevard required by LADOT appear to directly conflict with the Hollywood Walk of Fame Concept Plan discussed below. These conflicts and contradictions must be resolved.

4) Benefits of Improvements Must Be Quantified and Validated – Page 3 of the April 10, 2020 LADOT letter indicates that the Project applicant has agreed to fund four measures in the area of the Project under a Development Agreement including:

   a) Implement the Mobility Hub.
   b) Implement bicycle improvements.
   c) TSM improvements.
   d) Construct Neighborhood Traffic Management measures.

   None of these measures are defined to allow reviewers of the Draft EIR to understand the expected benefits that implementation of these measures will provide. Without quantification and further explanation of what these improvements will entail, the value and potential benefit of these offers of financial participation cannot be determined.

5) "Hollywood Walk of Fame Concept Plan" Has Not Been Considered – The January 2020 Concept Plan for the Hollywood Walk of Fame envisions expanding the existing sidewalk on both sides of Hollywood Boulevard between La Brea Avenue and Argyle Avenue from 15' to 25'. Implementation would require the elimination of on-street parking and one travel lane in each direction.

   The Transportation Assessment indicates that conditions for pedestrians on the Walk of Fame along Vine Street will be improved by the closure of six driveways with the Hollywood Center Project, with vehicle access relocated to the side streets instead. However, the Transportation Assessment fails to address or consider impacts associated with the removal of the parking lane and one travel lane in each direction on Hollywood Boulevard.

In summary, the Proposed Project must fully evaluate and disclose the potential traffic impacts and conflicts pointed out in this letter. Further study must be undertaken and more detailed information must be provided in order to properly identify and address the traffic impacts and the scope of the traffic improvements that will be created by the Proposed Hollywood Center Project. If you have questions regarding these comments, please contact me at your convenience.

Respectfully submitted,

Tom Brohard and Associates

Tom Brohard, PE
Principal

Enclosure

Tom Brohard, PE

Licenses: 1975 / Professional Engineer / California – Civil, No. 24577
1977 / Professional Engineer / California – Traffic, No. 724
2006 / Professional Engineer / Hawaii – Civil, No. 12321

Education: 1969 / BSE / Civil Engineering / Duke University

Experience: 50 Years

Memberships: 1977 / Institute of Transportation Engineers – Fellow, Life
1978 / Orange County Traffic Engineers Council - Chair 1982-1983
1981 / American Public Works Association – Life Member

Tom is a recognized expert in the field of traffic engineering and transportation planning. His background also includes responsibility for leading and managing the delivery of various contract services to numerous cities in Southern California.

Tom has extensive experience in providing transportation planning and traffic engineering services to public agencies. In addition to conducting traffic engineering investigations for Los Angeles County from 1972 to 1978, he has previously served as City Traffic Engineer in the following communities:

- Bellflower ..... 1997 - 1998
- Bell Gardens ..... 1982 - 1995
- Big Bear Lake..... 2006 - 2015
- Indio..... 2005 - 2019
- Huntington Beach ..... 1998 - 2004
- Lawndale..... 1973 - 1978
- Los Alamitos ..... 1981 - 1982
- Oceanside..... 1981 - 1982
- Paramount ..... 1982 - 1988
- Rancho Palos Verdes ..... 1973 - 1978
- Rolling Hills ..... 1973 - 1978, 1985 - 1993
- Rolling Hills Estates ..... 1973 - 1978, 1984 - 1991
- San Fernando..... 2004 - 2019
- San Marcos..... 1981
- Santa Ana ..... 1978 - 1981
- Westlake Village ..... 1983 - 1994

During these assignments, Tom has supervised City staff and directed other consultants including traffic engineers and transportation planners, traffic signal and street lighting personnel, and signing, striping, and marking crews. He has secured over $10 million in grant funding for various improvements. He has managed and directed many traffic and transportation studies and projects. While serving these communities, he has personally conducted investigations of hundreds of citizen requests for various traffic control devices. Tom has also successfully presented numerous engineering reports at City Council, Planning Commission, and Traffic Commission meetings in these and other municipalities.

In his 14 years of service to the City of Indio, Tom accomplished the following:

- Oversaw preparation and adoption of the 2008 Circulation Element Update of the General Plan including development of Year 2035 buildout traffic volumes, revised and simplified arterial roadway cross sections, and reduction in acceptable Level of Service criteria under certain conditions.

- Oversaw preparation of fact sheets/design exceptions to reduce shoulder widths on Jackson Street and on Monroe Street over I-10 as well as justifications for protected-permissive left turn phasing at I-10 on-ramps, the first such installations in Caltrans District 8 in Riverside County; reviewed plans and provided assistance during construction of both $2 million projects to install traffic signals and widen three of four ramps at these two interchanges under Caltrans encroachment permits.

- Reviewed traffic signal, signing, striping, and work area traffic control plans for the County's $45 million I-10 Interchange Improvement Project at Jefferson Street.

- Reviewed traffic impact analyses for Project Study Reports evaluating different alternatives for buildout improvements of the I-10 Interchanges at Jefferson Street, Monroe Street, Jackson Street and Golf Center Parkway.

- Oversaw preparation of plans, specifications, and contract documents and provided construction assistance for over 70 traffic signal installations and modifications.

- Reviewed and approved over 2,000 work area traffic control plans as well as signing and striping plans for all City and developer funded roadway improvement projects.

- Oversaw preparation of a City-wide traffic safety study of conditions at all schools.

- Obtained $47,000 grant from the California Office of Traffic Safety and implemented the City's Traffic Collision Database System. Annually reviews "Top 25" collision locations and provides traffic engineering recommendations to reduce collisions.

- Prepared over 1,500 work orders directing City forces to install, modify, and/or remove traffic signs, pavement and curb markings, and roadway striping.

- Oversaw preparation of engineering and traffic surveys to establish enforceable speed limits on over 500 street segments.

- Reviewed and approved traffic impact studies for more than 35 major projects and special events including the annual Coachella and Stagecoach Music Festivals.

- Developed and implemented the City's Golf Cart Transportation Program.

Since forming Tom Brohard and Associates in 2000, Tom has reviewed many traffic impact reports and environmental documents for various development projects. He has provided expert witness services and also prepared traffic studies for public agencies and private sector clients.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 44

1100 Corporate Center Drive, Suite 201, Monterey Park, CA 91754
T: (323) 260-4703 | F: (323) 260-4705 | www.koacorp.com
MONTEREY PARK ORANGE ONTARIO SAN DIEGO LA QUINTA

TECHNICAL MEMORANDUM

Date: June 1, 2020

To: Alexander von Wechmar – The Oaks Homeowners Association

From: Brian Marchetti, AICP

Subject: Review of Hollywood Center Draft EIR Traffic Assessment

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This letter provides a review of potential impact areas not reviewed to an adequate level by the Hollywood Center (formerly Millennium Hollywood project) traffic study and EIR, focusing on areas of particular concern to The Oaks Homeowners Association.

Area resident associations and the local Neighborhood Council have expressed concerns over the adequacy of the traffic analysis in comment letters submitted to the City on the EIR. The Oaks Homeowners Association submitted a comment letter on the project Notice of Preparation on October 4, 2018, stating concerns over high existing traffic volumes on Franklin Avenue and the potential negative effects on this corridor from the proposed project. The Argyle Civic Association, representing the local neighborhood on Argyle Avenue, submitted a letter on September 4, 2018, with similar concerns on routes to and from freeway access points via Argyle Avenue, Franklin Avenue, and other local roadway routes. The Hollywood United Neighborhood Council provided a list of issues requested to be included in the EIR analysis, including an expanded analysis of freeway access and traffic impacts on area roadways including Franklin Avenue. The Hollywood Dell Civic Association filed an appeal in opposition to the former Millennium Project, and traffic needs were defined in that appeal for the Argyle/Franklin intersection and the Franklin Avenue corridor

Concerns over the adequacy of analysis of project traffic to the north of the site, to the US-101 and Franklin Avenue corridors, are described in more detail below.

Freeway Impacts

Appendix N-1 of the Draft EIR for the proposed project is the Traffic Assessment document. Attachment D of that document is the "State Highway Level of Service Analysis Summary of Results" The following was stated in this document regarding the applied methodology to the freeway facilities analysis:
"Based on discussions with Caltrans, a Project-related effect is considered substantial if the traffic generated by the Project: (a) causes the freeway mainline segment level of service (LOS) to deteriorate to LOS F; or (b) when the segment is already at LOS F, causes an increase in the demand/capacity ratio of greater than or equal to 2%." The mainline is the primary roadway of a freeway facility, or the segments between interchanges.

The Caltrans Traffic Impact Study Guide is currently being updated and will be adopted soon, as part of State efforts at incorporating guidance from Senate Bill (SB) 743, and the related implementation of the new California Environmental Quality Act (CEQA) guidelines for transportation analysis that includes the vehicle miles traveled (VMT) metric. The previous version of the Guide, however, stated that the addition of any trips to a facility with deficient LOS (usually E or F, but depending upon the facility) is considered significant. The application of a volume-to-capacity (V/C) ratio increase of 0.02 or higher is more adopted from local jurisdictional guidelines (although many including those defined by LADOT for City roadways are 0.01 at LOS E or F) than consistent with any guidelines for State facilities that have been adopted by Caltrans. The reasoning for the selective adoption of this standard for this project deserves further discussion in the EIR. Many projects that are smaller in size than the proposed project are often determined to have significant impact determinations on freeway facilities.

Appendix I of the updated traffic study is entitled "Intersection Analysis Results Not Required by Transportation Assessment Guidelines". This appendix documents an analysis using the recent but superseded LADOT traffic study guidelines. The following conclusions can be made from the presented data:

- The existing plus-project impact at Argyle/Franklin intersection was 0.009 and 0.010 for the AM and PM peak hours at LOS F.
- The future with-project impact at this location was determined to be 0.009 and 0.011.
- The incremental impact of 0.010 or higher at LOS values of E or F would have been significant under the previous LADOT guidelines. Therefore, the values of 0.010 and 0.011 above would have been significant under the previous LADOT guidelines.

Under current LADOT guidelines, vehicle delay is applied to local intersection analysis in Traffic Assessments reviewed by LADOT, instead of volume-to-capacity values. But the analysis in Appendix I shows the potential for proposed project impacts in the Franklin Avenue corridor, but analysis of this roadway has not been provided in the delay-based analysis.

Study Area and Lack of Analysis to the North

In Appendix E (Added Intersections Analysis, January 2013) of the Final EIR for the previously proposed Millennium project, the following was discussed:

"….in comments on the Draft EIR, concerns were raised about significant Project impacts extending beyond the northern boundary of the area analyzed in the Traffic Study. Two intersections located on the northern boundary of the study area were considered to be significantly impacted - Highland Avenue/Franklin Avenue (north) and Argyle Avenue/Franklin Avenue/I-101 Freeway Northbound On-Ramp in the Traffic Study."

It was stated in this Appendix that the analysis was for informational purposes only, but was provided to address the impacts of the project within an added area beyond what had been included in the study area. These locations were north of the significantly impacted intersections in the traffic study.

There was concerns expressed in public comments on the 2013 study about potential impacts to the north of the project, and the traffic study defined an existing plus-project and a future with-project impact

at the Argyle/Franklin intersection. In the future period, the incremental impact was at 0.029 of the volume-to-capacity ratio when the maximum impact standard is 0.010 at the stated LOS value of F.

On the 2012 Draft EIR, Comment No. 03-6 was submitted by Caltrans, which requested that six freeway ramp/roadway intersections be added to the study area. The Argyle/Franklin/US-101 northbound ramp intersection was included in this request. Therefore, Caltrans had previous strong concerns about project traffic at ramp intersections, but these were excluded from the Hollywood Center Project Traffic Assessment, other than the queuing analysis conducted at some for the freeway corridor analysis. The project trip distribution in the 2012 Draft EIR Traffic Study included the following pattern to the north of the project:

- 10 percent outbound trip distribution north on Argyle Avenue from site, six percent to US-101 northbound ramp at Argyle/Franklin.
- 5 percent inbound trip distribution to Beachwood Drive exit connection and 4 percent westbound on Franklin Avenue. Both of these paths then combined as a 9 percent distribution to make left-turn movement southbound onto Argyle Avenue. An additional one percent is added from the area to the north of Franklin Avenue.

On Figure 7A of the 2020 traffic study, 20 percent of project trips are shown to generally travel north in the Cahuenga Boulevard corridor. An additional 5 percent of traffic is generally assigned to the Vine Street corridor, without any definition as to east-west corridors where traffic may be destined or originating. This is a reduction in distribution to the Vine Street and Franklin Avenue corridors without any justification for this change. Restoration of the previous trip generation pattern applied in the 2012 study could trigger significant impacts to the north of the project that are potentially avoided by this change in distribution.

The study area map illustrates the geographic holes that have been left in the analysis, in that three local roadway segments were analyzed to the north, but major intersections in between those location and the project site were omitted from the analysis. The three analyzed local roadway segments on Argyle Avenue, Vista del Mar Avenue, and Carmen Avenue, all to the north of Franklin Avenue, represent the north end of the study area. If the study area was defined based on where impacts could occur, the omission of major intersections in the Franklin Avenue corridor between the project site and these roadway segment analysis locations is an omission that should be rectified.

The use of the VMT metric in traffic studies in the City of Los Angeles to fulfill updated CEQA guidelines has created a hybrid approach to studies under LADOT review. This includes more focused local intersection and segment study areas for vehicle volumes and level of service, and a regional approach to larger area impacts analysis through VMT analysis. This approach should not truncate study areas so far that local routes to and from major regional travel routes such as the US-101 corridor along Franklin Avenue are excluded. Potential impacts in this corridor represent a local issue.

Cumulative Project Impacts

Other projects in the area have added new daily and peak-hour vehicle volumes to the Argyle Avenue and Franklin Avenue corridors, due to their proximity to these roadways:

- Argyle House (1755 Argyle / 6220 West Yucca) – This project has two buildings. One is 32 stories in height, including 6,980 square feet of commercial/restaurant space, residential and hotel areas. 191 multi-family residential units, and 260 hotel rooms.

- Kimpton Everly Hotel (1800 Argyle) – A 225-room hotel.

Both of these projects were included in the cumulative/planned projects list in the traffic study and are currently operational, but their effects on the roadways to the north of Yucca Street where access is provided to and from the US-101 freeway is not considered in the Hollywood Center Project Traffic Assessment. Yucca Street is the northern limit of the project study area. An expansion of the study area to the north would disclose potential impacts in this area but currently this is not analyzed under current guidelines in the study.

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 45

State of California • Natural Resources Agency
Department of Conservation
California Geological Survey
801 K Street • MS 12-30
Sacramento, CA 95814
(916) 445-1825 • FAX (916) 445-5718

Edmund G. Brown Jr., *Governor*
John G. Parrish, Ph.D., *State Geologist*

RECEIVED
CITY OF LOS ANGELES
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CITY PLANNING DEPT.
VALLEY OFFICE

September 24, 2018

Elva Nuño-O'Donnell
City of Los Angeles
Department of City Planning
6262 Van Nuys Blvd., Room 351
Van Nuys, CA 91401

SUBJECT: Comments on the scope and content on the NOP for the Environmental Impact Report for the "Hollywood Center" project.

Dear Ms. Nuño-O'Donnell:

The California Geological Survey (CGS) has received the Notice of Preparation for the draft Environmental Impact Report (EIR) for the "Hollywood Center" development project in the vicinity of Vine Street, Yucca Street, Ivar Avenue, and Argyle Avenue in the Hollywood Community Plan Area of Los Angeles, CA, 90028. This letter conveys suggestions and recommendations from the California Geological Survey concerning geologic and soils issues related to the planning area.

The California Geological Survey recommends the EIR address the following items and issues within the planning area:

1) Regional and Site Specific Geology
The EIR should include a discussion of the geologic and structural history of the area and a description of the rock types in the region and across the project site. At a minimum, the following geologic maps should be reviewed:
Dibblee Jr., T.W., 1991, Geologic map of the Hollywood and Burbank (south ½) Quadrangles, Los Angeles County, California: Dibblee Geological Foundation, Map DF-30, 1:24,000 scale.

Campbell, R.H., Wills, C.J., Irvine, P.J., and Swanson, B.J., 2014, Preliminary geologic map of the Los Angeles 30' x 60' Quadrangle, California, Version 2.1. California Geological Survey, available at: http://www.conservation.ca.gov/cgs/Pages/Maps-Data/preliminary_geologic_maps.aspx

Yerkes, R.F., 1997, Preliminary geologic map of the Hollywood 7.5' quadrangle, southern California: U.S. Geological Survey, Open-File Report OF-97-255, scale 1:24,000.

2) Geologic Hazards
Numerous potential geologic hazards exist within the Hollywood Center Project planning area. Each of the hazards listed below should be addressed in the EIR.
a. Earthquake Fault Zones

CGS has completed seismic hazard zone mapping for the Hollywood 7.5-minute quadrangle and the Hollywood Center Project planning area is within a defined Alquist-Priolo Earthquake Fault Zone. Digital versions of this zone map (PDF and Shapefiles) and associated reports can be downloaded from the CGS Information Warehouse, here: http://maps.conservation.ca.gov/cgs/informationwarehouse/ or accessed as web interactive maps, here: https://spatialservices.conservation.ca.gov/arcgis/rest/services/CGS_Earthquake_Hazard_Zones.

These zones can also be viewed with a parcel base map on CGS's interactive Earthquake Hazards Zone Application, here: https://maps.conservation.ca.gov/cgs/EQZApp/app/

b. *Faulting Hazards* – Numerous earthquake faults are mapped within and nearby the Hollywood Center Project planning area. The Hollywood Fault, and its associated splays, are the closest faults to the project area and the entire project lies within an Alquist-Priolo Earthquake Fault Zone for this fault. In addition, at least one trace of the Hollywood Fault is believed to cross the southern part of the planning area, between Hollywood Blvd and Yucca Street, and is considered active. Because the Hollywood Center Project lies within the regulatory Earthquake Fault Zone, site-specific fault investigations are required before the City of Los Angeles can issue permits and, if an active fault trace is found, appropriate fault setbacks must be determined.

At a minimum, the EIR should identify where active traces of the Hollywood fault pass through the planning area and discuss any surface rupture hazards they pose to the project. The most recent understanding of the location of the Hollywood fault is shown on the CGS interactive Data Viewer, here: https://maps.conservation.ca.gov/cgs/#datalist. From the Layer List, select "Seismic Hazards Program: Alquist-Priolo Fault Traces." Please note that these fault traces have been prepared at a regional scale (1:24,000) for the purpose of delineating the hazard zones. They should not replace site-specific geologic fault studies.

We also recommend that the following CGS Fault Evaluation Report for the Hollywood Fault in the Hollywood 7.5-Minute Quadrangle be reviewed in the EIR: http://gmw.conservation.ca.gov/SHP/EZRIM/Reports/FER/253/FER_253_Report_20140214.pdf

c. *Ground Shaking Hazards* – The Hollywood Center Project planning area is located near many active faults capable of producing severe ground shaking during an earthquake. The EIR should include a discussion on nearby active faults and the likelihood of the planning area to experience strong ground shaking from an earthquake during the life of the project. The earthquake shaking potential for various regions in California can be viewed on the CGS interactive Data Viewer, here: https://maps.conservation.ca.gov/cgs/#datalist. From the Layer List, select "MS48: Earthquake Shaking Potential for

California (revised 2016)." This map can also be downloaded as PDF, here: ftp://ftp.conservation.ca.gov/pub/dmg/pubs/ms/048/MS_048_revised_2016.pdf

In addition, the USGS Earthquake Hazards Program provides many tools and resources, here: https://earthquake.usgs.gov/hazards/

Please let me know if you have any questions or concerns with the comments in this letter.

Sincerely,

Eleanor Spangler
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California Geological Survey
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916-451-5519
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Timothy McCrink
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The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 46

Caltrans Internal Memoranda Regarding Deficiencies in the Millennium Project Draft EIR

FOR INTERNAL INFORMATION ONLY
Millennium Hollywood Project
Chronological List of Events

Introduction

This Chronological List of Events indicates how Caltrans District 07 has been trying to work with the City of Los Angeles from the beginning of the project to ask the City to adequately address and disclose potential project impacts to the State Highway System in the Environmental Impact Report. Caltrans has been working on this project with the City for approximately 2 years and has yet to receive an adequate traffic impact study for our review. It is our goal to request an approval to file CEQA Litigation against the City of Los Angeles for incompliance of CEQA for the Millennium Hollywood Project.

May 2, 2011-NOP and IS received

Caltrans received the first environmental document from the City of Los Angeles ("City") for the Millennium Hollywood Project ("Project").

May 18, 2011-NOP Letter Sent

Caltrans prepared a Notice of Preparation letter to the City listing key items the City should include in its traffic study. The items included traffic analysis on the freeway and on/off ramps within 5 miles radius of the project site. Caltrans stated that queuing of vehicles using off-ramps that will back into the mainline is a concern, and stated that the City needed to determine whether Project –related plus cumulative traffic is expected to cause long queues on the on and off-ramps. Caltrans further stated that the City should consult with Caltrans on the study locations, and requested that the City use a select zone analysis model run.

September 15, 2011-Meeting

Caltrans met with Ms. Srimal Hewawitharana, City Planning Department, and the developer's traffic consultant to discuss Caltrans' concerns about the Project's impact on the US-101 freeway and on/off ramps within a 5-mile radius of the Project site. The traffic consultant acknowledged Caltrans' concerns and it was understood by both parties that the traffic procedures for analyzing impacts to the State Highway System ("SHS") would follow standard statewide procedures outlined in Caltrans' Traffic Study Guide. Caltrans was expecting a complete Traffic Impact Study ("TIS").

October 26, 2012-DEIR and Traffic Study received

Caltrans received the Draft Environmental Impact Report ("DEIR") and traffic study for review. Caltrans found that no traffic study analysis on the SHS was in the report.

November 1, 2012-Caltrans' Phone Call

Caltrans staff called the traffic consultant about the DEIR and traffic study that was received for review. Caltrans' engineer told the consultant that the DEIR did not include a traffic analysis. The traffic consultant's response was ***"It is what it is."*** Caltrans staff informed the consultant that we would review the document and provide comments based on the information that was received.

November 16, 2012-Request for Meeting

The traffic consultant, the developer, and the developer's attorney requested a meeting with Caltrans. Caltrans staff consulted with HQ-Legal (David McCray) and he told us that he would come to D7 to attend the meeting. Caltrans attorney also told us that we should not agree to **any meetings with consultants** if representatives from the City are not going to be in attendance.

November 19, 2012

Caltrans staff called Jon Foreman, Senior Transportation Planner for the City of Los Angeles and left a voicemail message asking him to call regarding the requested meeting. He did not return the telephone call.

November 26, 2012

Caltrans staff left a voicemail message asking Jon Foreman to call regarding the requested meeting. Staff also asked that the representative from the City be someone who is familiar with the project and could make decisions on behalf of the City. He did not return the call.

November 29, 2012

Caltrans staff sent an e-mail to Jon Foreman and sent a cc to Dan Scott (Principal Planner for the City of LA) and Lisa Webber (Director of Planning for the City of LA) reminding him of the voicemail messages and requesting that he call Caltrans staff. Jon Foreman responded to the e-mail and said that he would not be able to attend the meeting, but he would send a staff member.

Due to the complexity of the Project, Caltrans staff determined that it was necessary to discuss our concerns with someone at the management level from the City. Caltrans staff left a voicemail message for Lisa Webber, the Director of Planning for the City, explaining that the Project's consultant and his attorney requested a meeting with Caltrans. Caltrans staff told her that we could not meet with the consultant unless someone from the City was present. Staff also asked that the representative from the City be someone who is familiar with the project and could make decisions on behalf of the City. Ms. Webber called back and said that Dan Scott, Principal Planner for the City of Los Angeles, would attend the meeting.

December 4, 2012-Meeting

Caltrans D7 and HQ attorneys met with the Project's consultant, the developer's attorney, and the City staff members to address Caltrans' concerns. By the end of the meeting, no solid agreement was established. Caltrans informed the City that we would review and respond to the DEIR based on the information that was submitted. Caltrans' comments indicated that the traffic analysis that was included in the DEIR for the project was insufficient to determine the impacts of the Project on the SHS.

December 10, 2012

Caltrans staff sent comments via e-mail and US postal service to the representatives for the City. After e-mailing the letter, Caltrans staff received a response from Jon Foreman that said, "After the meeting, and in doing further research, I became aware of a former City/County/Caltrans group that met to try and resolve the very issues we discussed. Nothing was resolved it appears, and we are now in the same place we were 10 years ago..."

February 12, 2013

Caltrans received the Final EIR, which includes the response to comments on the DEIR.

February 19, 2013

After Caltrans received the response to comments, staff consulted with HQ Legal and sent a letter to the City expressing Caltrans' concerns with the traffic analysis and response to Caltrans comments that was included in the FEIR.

March 22, 2013

Caltrans met with the City Planning Director, Lisa Webber, and Los Angeles Department of Transportation engineers to discuss whether the City would respond to Caltrans' comment letter prepared on February 19, 2013. The City has stated that it will not respond to Caltrans' request and the City is planning to approve the Project. The City emphasized the importance of this project by referring to it as "The Project of the Year".

March 28, 2013

The City Planning Commission heard and rejected a motion for appeal from 5 project opponents and approved the recommendation that the City Council certify the EIR and adopt the related Findings and Statement of Overriding Considerations. The approved recommendation will likely be sent to the City Council in April.

May 1, 2013

Caltrans met with representatives of the Mayor's office to discuss Caltrans concerns with the Millennium project. Nate Gale, Mayor's Office, said that he would discuss our concerns with Michael Lo Grande, City Planning Director and schedule a meeting between Michael Lo Grande and District 7 Management.

May 7, 2013

Caltrans mailed a copy of our comment letter and concerns to the City Council for their consideration.

June 5, 2013

Caltrans staff delivered a copy of our comment letters and to the City Clerk for the City Council's consideration at the Public Hearing tentatively scheduled for June 19, 2013. Caltrans plans to attend this meeting.

June 24, 2013

District staff (Mike Miles, Elhami Nasr, Alan Lin, Lauren Wonder) had a teleconference with HQ (Malcolm Dougherty, Kome Ajise, Elizabeth Pollock, Alisa Begley) to discuss next steps for Millennium. Malcolm requested that District staff meet with the City to try to reach an agreement. Elhami went to LADOT to request a meeting w/Jaime de la Vega, General Manager LADOT, and Jay Kim, Principle Transportation Engineer LADOT. Elhami scheduled the meeting for June 25, 2013 at 10:00 a.m.

June 25, 2013

Caltrans staff (Mike Miles, Elhami Nasr, DiAnna Watson, Alan Lin, Elmer Alvarez) met with LADOT (Jaime de la Vega and Jay Kim) to discuss possible solutions. Caltrans agreed to provide LADOT with a request for information that LADOT would take to the consultant. LADOT would request that the consultant comply with Caltrans request. Additionally, Caltrans agreed to provide LADOT with written criteria for Traffic Analysis and criteria for early consultation meetings on future projects.

July 2, 2013

Caltrans e-mailed the information discussed in the meeting on 6/25/2013 to Jay Kim & Jaime de la Vega. Caltrans (DiAnna Watson) received a telephone call from LADOT (Jay Kim) regarding the e-mail. LADOT was concerned that the documents submitted did not include a numerical threshold of significance. He also expressed that LADOT had no authority to require the consultant to provide Caltrans with additional information. Caltrans requested a reply from LADOT to the e-mail. Caltrans also suggested that LADOT include its definition of an acceptable threshold of significance. LADOT responded that it would take time to decide how to respond to Caltrans e-mail.

July 15, 2013

Caltrans e-mailed LADOT (Jay Kim) requesting the status of Caltrans request and LADOT's agreement to provide the traffic consultant with Caltrans request for information. Caltrans has not yet received a response from LADOT.

Methodology Used by Consultant

The consultant used the Congestion Management Program (CMP) and Critical Movement Analysis (CMA) in the traffic analysis which does not capture the same data for analysis that the Highway Capacity Manual (HCM) uses, resulting in the following:

- The CMP does not require that the impacts to the freeway and off-ramps be analyzed, including where existing LOS is F, if the Project trip assignments are 150 cars or less. The consultant used pre-selected CMP arterial intersection segments, also referred to as freeway monitoring segments, to determine if the freeway would require additional analysis.

- The nearest freeway monitoring segment is located on the US-101 south of Santa Monica Blvd., which is approximately 2 miles from the project location. When using this location it is estimated that the project will add approximately 84 total trips during the AM peak hour and 114 total trips during the PM peak hour. Based on CMP criteria no additional analysis of the freeway is necessary. In order to adequately determine the impacts of the project on the US-101 freeway, all segments of the freeway in the vicinity of project would need to be analyzed.

- A queuing analysis on the off-ramp, where the freeway off-ramps will back up and creating a potential unsafe condition, was not performed.

- The off-ramps which would represent the most impacted area from the Project were not analyzed.

- A cumulative traffic analysis was not performed on the State Highway System, which would consider trips generated by the 58 related projects that were referred to in the DEIR, the proposed NBC Universal Project, and the Hollywood Community Plan.

- The CMP uses a percentage criterion for determining the significance of traffic impacts. The use of a "ratio theory" or "comparative approach," such as the CMP's "2% increase in trips" criterion, improperly measures a proposed project's incremental impact relative to the existing cumulative effect rather than measuring the combined effects of both the project and other relevant past, present, and future projects.

- The CMP does not include site-specific safety considerations, nor is it based on an appropriate measure of effectiveness for site-specific considerations.

- A Manual Model Analysis was conducted instead of a Select Zone Analysis. Select Zone Analysis examines the spatial impacts of a new development and would help determine where the impact begins and the distance of the impact on the freeway.

Development Projects in Hollywood

Project Name/Address	Project Description	AM Peak	PM Peak	ADT	Status
Millenium Hollywood				9900	
Hollywood Gateway (Blvd 6200)	1042 res. Apartments; 175,000 sq.ft. commercial/retail; 3000 parking spaces	477	806	9387	Approved
Sunset Bronson Studios	398,000 Sq. Ft. Office	404	376	2690	
Columbia Square Mixed use	22-story tower, 200 res. Apts. Two office bldgs for 330,000 sq.ft of office space	758	755	9226	Approved
Sunset and Gordon Mixed Use	22-story tower with 300 res. Units, and 40,000 sq.ft.				Under Construction
1600 Highland Avenue	496 Residential Units 300 Room Hotel 186,000 Sq. Ft. Office Space 45,400 Sq.Ft. Retail	748	845	9498	
Pantages Theatre Office Bldg.	214,000 Sq.Ft. Office	276	254	1918	
Paseo Plaza	437 Residential Units 378,000 Sq.Ft Retail	250	644	6831	
Hollywood Center Studios	104,000 Sq.Ft. Office	92	51	808	
Seward and Romaine	237,000 Sq.Ft. Office 12,700 Sq. Ft. Retail	336	310	2337	
Nickelodeon Hollywood	223 Residential Units 23,000 Sq.Ft. Office	81	121	1404	
Hollywood Community Plan					
NBC Universal					

The traffic impact study prepared for the Millenium Hollywood project does not take into account potential traffic impacts from all projects above. These projects will be located approximately within 2 miles from Hollywood Millenium site.

Urgent!

IGR/CEQA REVIEW

WorPro Tracking System

ROUTE TO:

Office	Assigned To	Location	Assigned on	Due on
T-Investg.	Sheik Moinuddin		02/12/2013	02/14/2013
FWY Ops	Kirk Patel		02/12/2013	02/14/2013

IGR/CEQA No.: 130204	*Sch No.:* 2011041094	*Doc. Type:* FEIR	
Project Title: Millennium Hollywood Project			
Local Agency: City of Los Angeles			
County : LA	*Route :* 101	*Beg.* PM: 7.370	*End* PM: 7.370

Return comments to: **Alan Lin**	*Loc.:* **12-234**	*Ext. :* **7-8391**

When applicable please apply the Caltrans "Guide for the Preparation of Traffic Impact Studies".

☐ Y ☒ N ☐ N/A	1. DO YOU CONCUR WITH SUFFICIENCY OF THE PROPOSED MITIGATION, IF ANY?
☒ Y ☐ N ☐ N/A	2. DO YOU THINK THERE IS ANY OTHER KIND OF DEGREE OF MITIGATION THAT POSSIBLY COULD OR SHOULD BE CONSIDERED?
☐ Y ☒ N ☐ N/A	3. DO YOU CONCUR WITH THE SPECIFIED EXISTING AND FORECAST LEVEL OF SERVICE (L.O.S.) AND VOLUME VALUES?
☒ Y ☐ N ☐ N/A	4. DO YOU FORSEE ANY TRANSPORTATION/CIRCULATION PROBLEMS, INCLUDING ANY STATE HIGHWAY L.O.S. REDUCTION OR INCREASE IN TRAFFIC BELOW L.O.S. C?
☒ Y ☐ N ☐ N/A	5. ARE THERE ANY PARTS OR ASPECTS OF THE TRAFFIC ANALYSIS THAT YOU CONSIDEER ARE OR MIGHT BE UNSATISFACTORY?
☐ Y ☐ N ☒ N/A	6. MIGHT THE PROJECT NEED A CALTRANS ENCROACHMENT PERMIT?
☒ Y ☐ N ☐ N/A	7. SHOULD ANY OTHER CALTRANS UNITS REVIEW THE DOCUMENT(S)?

COMMENTS: Please explain and elaborate on items as SPECIFICALLY AS POSSIBLE. Email Review Comments.

Reviewed By: Jerry Mar **Phone No.** 7 2084 **Date** 2/14/13

PLEASE NOTE: IF PROJECT REVIEW IS NOT RETURNED BY THE DUE DATE, THIS AGENCY MAY FORFEIT ANY RECOURSE TO PROTECT THE STATE HIGHWAY SYSTEM.

February 14, 2013

COMMENTS RE: MILLENNIUM HOLLYWOOD PROJECT, RESPONSES TO COMMENT LETTER NO. 03, February 2013

IGR NO. 121036AL

1. **Response to "Response to Comment No. 03-2**

   Per the requirements of the lead agency, "The capacity analysis methodology for freeways and unsignalized intersections must be approved by LADOT" (*Los Angeles Department of Transportation Traffic Study Policies and Procedures*, March 2002, Pg.9) Nothing in CEQA gives the City the right to require that Caltrans automatically adopt their impact criteria or standards. Caltrans is responsible for reviewing the TIA for errors and omissions that pertain to State highway facilities. The authority vested in the lead agency under CEQA does not take precedence over other authorities in law. The City's analysis appears to focus on impacts to the CMP (Los Angeles County's Congestion Management Program) from the project, not the project upon the environment. For example, per the "Caltrans Guideline for the Preparation of Traffic Impact Studies", a threshold of 1-49 peak hour trips assigned to a State highway facility experiencing significant delay, unstable or forced flow traffic flow conditions (LOS "E" or "F") has an impact. If the State facility is at LOS "C" or "D", a threshold of 50 to 100 trips generated has an impact. In other words, the State Highway facility can absorb additional traffic without degradation, if it is operating at a higher level of service where there are uncongested operations, higher travel speeds and freedom of movement. However, the greater the congestion, the lower the threshold of traffic needed to impact it. This is not an attempt to establish "thresholds of significant" impact such as a percentage ratio, but that there is an impact to existing State Highway facilities and a traffic study is required to address those impacts with mitigation measures, as needed, with Caltrans included in the process.

   Past reviews by Caltrans for similar projects in the City of Los Angeles has pointed to the concern that the CMP methodology does not offer an accurate analysis of the impact to the State Highway system. The concerns and recommendations by Caltrans may have been considered but these are not reflected in the responses. Caltrans has repeatedly stated that they do not accept the findings of the CMP methodology.

2. **Response to "Response to Comment No. 03-3, 03-4 and 03-5"**

   The model demonstrates that the Project adds traffic to the freeway. The cumulative effect of the 58 related projects that are referred to in the DEIR, the proposed NBC Universal Project and Hollywood Community Plan adds traffic to the freeway. Route 101 in this vicinity operates at LOS F. Regardless of programs that include upgrades to the transit system or TDM to improve traffic conditions, it would be reasonable to assume that the net effect of any additional trips will worsen the existing freeway condition. Adopting an arbitrary value of 150 or more trips as a significant impact is not a realistic approach. Based on the conclusion drawn from this project and other related projects the City of Los Angles has approved, a continual pattern finding "less than significant impact" to the State Highway system, and therefore no mitigation required, raises reasonable doubt about the analysis. Caltrans is receptive to all reasonable transportations solutions that will improve operations and safety on the freeway system.

3. **Response to "Response to Comment No. 03-6 and 03-11"**

   The study locations selected are those which the Project traffic impacts have the potential to be significant and substantial. These should include all freeway elements including freeway mainline, weaving sections, meters, ramps, ramp junctions, signalized or unsignalized in the study area. The traffic impact analysis methodologies are spelled out in the Caltrans guidelines and are used throughout the State when State Highway facilities are involved. Caltrans, in general, accepts the Highway Capacity Maunal (HCM) methodology. The same conclusions are not necessarily reached using CMP criteria. The Critical Movement Analysis (CMA) does not address off ramp queuing that can lead to operational and safety issues. The off ramp is part of the State Highway System that the City has no jurisdiction over.

4. **Response to "Response to Comment No. 03-7".**

   For Caltrans information, provide documentation showing a retail pass-by trip adjustment factor of 30% from LADOT Policies and Procedures, May 2012. Is this rate reduction factor consistent with other cities within Los Angeles County?

5. **Response to "Response to Comment No. 03-9".**

   Limitations exist regardless of the type of analysis used, be it a select zone analysis or a regional model network. Caltrans accepts the select zone analysis. If a manual approach is chosen it should include an appropraite study area with impacts to State Highway facilities addressed. Consultation with Caltrans is a critical step in the scoping process. All stakeholders in the environmental review should be included, not just unilateral review and approval by LADOT.

6. **Response to "Response to Comment No. 03-12 and 03-13".**

   Adherence to Standard City procedures as outlined in the LADOT Traffic Study Policies and Procedures, May 2012 does not constitute compliance with Caltrans criteria, especially when involving State Highway facilities.

7. **Response to "Response to Comment No. 03-14 and 03-15".**
   Caltrans maintains its position that the project impacts were not adequately addressed in the TIS and DEIR and additional traffic analysis is necessary.

Jerry Mar
Assoc. Transp. Eng. (Specialist)
Division of Operations
Office of Traffic Engineering-North
(213)897-2084

Comment Regarding Documents Submitted by Tony Harris

Page 1 – Paragraph 2

Lead Agency Statement - "The Traffic Study concludes that freeway peak hour trips are less than the level at which further study is warranted (150 peak hour trips) and as such impacts are less than significant."-

Caltrans Response - This statement has no credible analysis. The study should have performed a select zone analysis as requested by Caltrans prior to the EIR being drafted. Before the assignment of the trips to the freeway, the study used excess trip reductions in the trip generation table. The traffic model in the FEIR response to comment did not include other major projects in the area such as NBC Universal and Hollywood Community Plan.

Page 1 – Paragraph 4

Lead Agency Statement - "That process was determined to not be appropriate as it does not take site specific factors into account. For infill, mixed-use and transit oriented development projects in urban areas, such as the Project, those factors can be extensive and important."

Caltrans Response – Based on our records, Caltrans has not been notified that this project is an "infill" project until the EIR response to comment. Caltrans was never notified that LADOT was not going to follow Caltrans' guide. Caltrans' request was ignored by the City.

City's Notice of Preparation	April 28, 2011,
Scoping meeting with LADOT and traffic consultants	September 15, 2011
City's Traffic Impact Assessment	August 16, 2012
City's Notice of Availability of DEIR	October 25, 2012
EIR meeting with LADOT and traffic consultants	December 10, 2012

Page 1 – Paragraph 5

Lead Agency Statement - "The Project team offered synchronization of the traffic signal light at Franklin Avenue and Argyle Avenue with the traffic calming light on the 101 North bound onramp at Franklin Avenue and Argyle Avenue, but this measure was rejected."

Caltrans Response – The consultant never submitted the proposal in writing to Caltrans for review. When Caltrans met with the attorney for the developer and LADOT, on July 19, 2013, Caltrans verified that this improvement was never submitted to Caltrans for review nor was it rejected by Caltrans. In fact, Tom Caranza, LADOT Engineer, admitted that this improvement was rejected by the City.

Lead Agency Statement - "Further, additional study outside of the EIR of ramps in the vicinity of the Project Site, including SB Route 101 Off-Ramp to Vine Street, SB Route 101 On-Ramp from Argyle Avenue, NB Route 101 Off-Ramp to Gower Street, and NB Route 101 On-Ramp from Argyle Avenue, was offered and rejected."

Caltrans Response - Caltrans never received this offer. However, in Caltrans EIR comment letter dated December 10, 2012, Caltrans requested that 3 ramp locations in the above statement be analyzed. They are the following:

SB Route 101 on-ramp from Argyle Avenue
NB Route 101 off-ramp to Gower Avenue
SB Route 101 off-ramp to Vine Street

Page 1 Paragraph 6

Lead Agency Discussion about CMP and Caltrans Thresholds of Significance - It has been explained to LADOT and the traffic consultant several times verbally and in writing that Caltrans threshold of significance is to maintain a target LOS at the transition between LOS C and LOS D at State-controlled facilities. If an existing State controlled facility is operating at less than the appropriate target LOS, the existing measures of effectiveness should be maintained. When a facility is operating at LOS F, any additional trips will likely have a significant impact. As a **general rule, Caltrans does not comment on smaller project (i.e. not regionally significant or** privately owned single family residences) unless the project will potentially encroach on State Right-of-way.

From the 2010 Congestion Management Program, Section 2.4.1 Freeway Level of Services acknowledges that "Caltrans measures freeway LOS as a function of travel speed and duration of congestion, consistent with the Highway Capacity Manual methodology". This analysis is used throughout the State. The CMP does not capture the same data for analysis that the HCM. For example (1) the CMP fails to analyze the off-ramps; (2) fails to analyze the freeway impacts if the project trip assignments is less than 150 cars, especially the existing is at LOS F; (3) the CMP uses a flawed percentage ratio to determine significance of impact; (4) incorrectly analyzes cumulative traffic impacts.

Attachment 5: Response to Caltrans February 19 Letter, March 2013.

Although this response may have been drafted by the City, it was never submitted to Caltrans. Caltrans verified that the City never submitted a response to our letter date February 19, 2013 by Ms. Luciralia Ibarra (City Planner for Major Projects), confirmed in a voice mail on July 18, 2013, and Mr. Tom Carranza (LADOT Engineer) confirmed verbally in a meeting on July 19, 2013.

Page 1 Paragraph 1 of Attachment 5 –

Caltrans Response - There is a list of LRTP Highway/Freeway improvements on page 48 of Hollywood Community Plan TIMP, Section 4.0 Proposed Transportation Improvement and Mitigation Program-Hollywood Community such as:

1. US-101: construct a new NB on-ramp at Cahuenga Blvd.
2. US-101: Add NB and SB auxiliary lanes from Glendale Boulevard to Cahuenga Boulevard

If there is no impact in the Hollywood Community Plan, why does the report include the improvements? The City should have considered those improvements to mitigate project/cumulative traffic impact on the State facilities. During early discussions with the City and the traffic consultant, Caltrans specifically asked if the project took into consideration the Hollywood Community Plan. The City's response was "no because the plan was not adopted until after the project EIR had been drafted."

Page 2 Paragraph 3 of Attachment 5

Lead Agency Statement – "Caltrans procedures do not take in to account that computer model networks do not contain the level of detail needed for the Project TIS to consider and analyze the numerous minor Hollywood area roadways that are of concern to local residents and decision makers."

Caltrans Response – Although the computer model may not be an appropriate tool to assign trips to local streets, it is an excellent tool to assign trips to the freeway system. The citizens of the Hollywood community are concerned with the US-101 freeway as well as local streets and roads.

Page 2 Paragraph 5 of Attachment 5

Lead Agency Statement - "However, in the Project area, there are downstream blockages an overloaded intersection or freeway mainline section). No reasonable amount of ramp queuing area can contain the back-up. Therefore, no analysis was determined to be appropriate."

Caltrans Response - The above statement acknowledged that the off-ramps have traffic congestion on the ramp storage area. Caltrans asked for a queuing analysis to see how far the traffic impact will be or how far the traffic will back up to the mainline, which would determine if additional storage would be necessary as mitigation.

Page 2 Paragraph 6 of Attachment 5

Lead Agency Statement - "However, other processes outside CEQA afford an opportunity to address cumulative impacts especially when no individual project is a substantial contributor. Any feasible set of SHS improvement measures for the Hollywood Freeway should be proposed as part of the CMP. Once those measures are proposed, MTA can determine the appropriateness of the improvements and develop a funding mechanism."

Caltrans Response - There should be no processes outside CEQA to identify cumulative traffic impacts. The response acknowledged potential cumulative traffic impact, but intends for the public to pay for the traffic impact.

List of Challenging Items for Millennium Hollywood Project

1. There are only 5 freeway/ramp study intersections.

2. Un-signalized (Stop Sign) Intersections need to be studied.

3. Despite above two items, off ramps should be analyzed utilizing the Highway Capacity Manual (HCM) 85th percentile queuing analysis methodology with the actual signal timings at the ramps' termini. The submitted traffic analysis did not include the following ramp intersections that are closest to the project site, which may be significantly impacted by this development:

    - SB Route 101 on-ramp from Argyle Avenue
    - SB Route 101 off-ramp to Gower Avenue
    - NB Route 101 off-ramp to Gower Avenue
    - SB Route 101 off-ramp to Cahuenga Blvd.
    - SB Route 101 on-ramp from Cahuenga Blvd.
    - SB Route 101 off-ramp to Vine Street

4. Page 29 of the TIS, Table 4 Project Trip Adjustment Factors, % in reduction rate is not justified. For instance in retail, combined reduction is as high as 60%. If the City is going to use high reduction for all TOD, then an internal survey for the internal capture, transit usage, and pass-by trips from the City or from a third party should be considered. Otherwise, the claim cannot be substantiated. Even if the traffic study uses the data from the Trip Generation Manual, it is only a starting point for analyzing . Often, it's not an apple to apple comparison.

5. Table 6, Project Directional Trip Distribution (page 32), was determined manually and agreed by LADOT. When a regional significant project like Millennium is developed, a select zone analysis should be used. It was expected in the September 15, 2011 meeting with the City that the traffic study will follow standard statewide procedures outlined in Caltrans' Traffic Study Guide.

6. When the trip reduction and trip assignment % is questionable, the trips assigning to the freeway is invalid, in which there is no valid freeway analysis in the TIS.

7. There was no analysis performed for any of the freeway elements. The TIS only used the Los Angeles County Congestion Management Program (CMP) criteria. However, the CMP fails to provide adequate information as to direct and cumulative impacts to the freeway mainline and ramps, per CEQA.

8. Currently, the Level of Service (LOS) for US-101 is operating at LOS F. Any additional trips will worsen the existing freeway condition. The TIS did not include a cumulative traffic analysis for US-101, which would consider the trips generated from the 58 related projects that are

referred to in the DEIR, the proposed NBC Universal Project, and growth from the Hollywood Community Plan (Plan). Because the TIS prepared for the Plan in 2005 determined that build-out of the Plan would result in significant transportation impacts to the US-101, the Plan created a Transportation Improvement and Mitigation Plan (TIMP) to identify future improvements to the US-101. Since the proposed project site is located within the Plan area, the identified improvements should have been taken into consideration, as well as improvements listed in Metro's Long Range Transportation Plan.

9. The Millennium project will generate a gross 19,486 average daily vehicle trips with 1,064/1,888 vehicle trips during the AM/PM peak hours. Caltrans believes that the project traffic and cumulative projects within 5 miles radius will contribute significant traffic impact on US-101.

10. An HCM weaving analysis needs to be performed for both the NB and the SB mainline segments, between the on and off ramps within the same area, utilizing balanced traffic demands entering the existing the weaving segments.

11. Caltrans is concerned that the project impacts may result in unsafe conditions due to additional traffic congestion, unsafe queuing, and difficult maneuvering. These concerns need to be adequately addressed in the EIR.

12. The City relied on its own Congestion Management Program (CMP), which **DOES NOT** adequately study the impacts to the SHS. Because the TIS did not adequately analyze the traffic impacts, the City therefore did not identify adequate mitigation. The CMP does not capture the same data for analysis that the Highway Capacity Manual (HCM) uses. For example, the CMP (1) fails to analyze off-ramps, (2) fails to analyze freeway impacts, including where existing LOS is F, if the Project trip assignments is less than 150 cars, (3) uses a flawed percentage ratio to determine the significance of impacts, and (4) incorrectly analyzes cumulative traffic impacts. CEQA requires mitigation for site-specific issues. However, the CMP does not include site-specific safety considerations, nor is it based on an appropriate measure of effectiveness for site-specific considerations. Therefore, analysis under the CMP alone does not comply with CEQA.

13. The CMP improperly uses a percentage criterion for determining the significance of traffic impacts. The use of a "ratio theory" or "comparative approach," such as the CMP's "2% increase in trips" criterion, improperly measures a proposed project's incremental impact relative to the existing cumulative effect rather than measuring the combined effects of both the project and other relevant past, present, and future projects.

14. The FEIR is flawed because the City relies upon the Critical Movement Analysis (CMA), which does not address off-ramp queuing that can lead to operational and safety issues.

15. The traffic model analysis (FEIR Appendix B) provides alternative values for the traffic on US-101 which select locations that are too closed to the project resulting in an

incomplete model analysis for the project trips distribution on the US-101 where only small amount of trip is assigned to US-101.

Millennium Hollywood Project
Traffic Impact Analysis

The City should agree to have the consultant submit a supplemental traffic impact study (TIS) to include evaluation of potential project/cumulative traffic impacts to US-101 freeway mainline and to nearby on-and-off ramps using the Highway Capacity Manual Methodology:

- Include a Select Zone Analysis (meeting the Regional Significance Criteria to show the distance of the potential project traffic impact on the freeway system).

- Provide substantial evidence/justification for trip reduction. This includes pass-by trips, captured trips, and Transportation Demand Management (TDM).

- Based on the fact that the US-101 is currently operating at Level of Service (LOS) F during the peak hours, any trips added to the freeway in each direction during the AM/PM peak period, will have a significant traffic impact to the freeway system.

- Include in the model an analysis of the following on/off ramps, which are in close proximity to the project:

    - SB Route 101 on-ramp from Argyle Avenue
    - SB Route 101 off-ramp to Gower Avenue
    - NB Route 101 off-ramp to Gower Avenue
    - SB Route 101 off-ramp to Cahuenga Blvd.
    - SB Route 101 on-ramp from Cahuenga Blvd.
    - SB Route 101 off-ramp to Vine Street

The analysis must include, but need not be limited to, the following items:

- Weaving analyses at all merge (on-ramp) and diverge (off-ramp) areas on the freeway, as well as the mainline between Bronson Avenue and Cahuenga Blvd.

- Queue analysis for the off-ramps and on-ramps, if metered. Caltrans is particularly concerned that the freeway off-ramps will have queue build-ups, potentially creating an unsafe condition.

- Level of Service (LOS) analysis for the ramp intersections as well as ramp influence areas.

- The US-101 Traffic Impact Study (TIS) should also discuss mitigation alternatives for any significant traffic impacts.

- The project is to mitigate for any significant impacts directly related to the project and for those impacts where the project contributes cumulatively.

- If mitigation improvements are not feasible for the project to implement, Caltrans recommends that the City establishes a mechanism to collect fair share funding contributions towards future improvements that include freeway facilities.

- A fair share funding contribution towards future improvements may not mitigate the impacts but might represent feasible and reasonable mitigation.

- Potential transportation mitigation may include, but is not limited to, the following:

    1. SB 101 off-ramp to Gower: widening the off-ramp.
    2. NB 101 off-ramp to Gower: widening the off-ramp and installing signal.
    3. SB 101 on/off-ramp to Cahuenga: installing signal and modifying the intersection.
    4. Any improvement on US-101 Freeway Corridor Short and Mid Term Projects proposed by the Citizens Advisory Committees on July 7, 2004.
    5. Ramp metering where meters are not already installed, and/or modification of existing ramp meters.
    6. Changeable message signs at the N/B Route 101 before Bronson Avenue and on the S/B Route 101 before Cahuenga Blvd.

Millennium Hollywood Project
Recommended Resolution Alternatives

The City should agree to have the consultant submit a supplemental traffic impact study (TIS) to include evaluation of potential project/cumulative traffic impacts to US-101 freeway mainline and to nearby on-and-off ramps using the Highway Capacity Manual Methodology:

- Include a Select Zone Analysis (meeting the Regional Significance Criteria) to show where the project's trips are distributed and assigned along a loaded highway network. Caltrans request the consultant to submit electronic data files from the Select Zone Analysis.

- Provide substantial evidence/justification for trip reduction. This includes pass-by trips, captured trips, and Transportation Demand Management (TDM). This evidence can be warranted by LADOT internal survey for the past projects or by any creditable sources with comparable development in usages and/or in project size.

- Based on the fact that the US-101 is currently operating at Level of Service (LOS) F during the peak hours, if the project will assign 20 or more trips to the freeway in each direction during the AM/PM peak period, this project will have a significant traffic impact to the freeway system.

- Based on the fact that the US-101 is currently operating at Level of Service (LOS) F during the peak hours, if the related projects will assign 20 or more trips to the freeway in each direction during the AM/PM peak period, there will be a cumulative significant traffic impact to the freeway system.

- Include a Queuing Analysis for the off-ramps with 85th percentile to determine if the project traffic will back up on to the mainline freeway. Caltrans is concerned that the freeway ramps will back up, creating a potentially unsafe condition.

- Include an analysis of the following on/off ramps, which are in close proximity to the project:

    - SB Route 101 on-ramp from Argyle Avenue
    - SB Route 101 off-ramp to Gower Avenue
    - NB Route 101 off-ramp to Gower Avenue
    - SB Route 101 off-ramp to Cahuenga Blvd.
    - SB Route 101 on-ramp from Cahuenga Blvd.
    - SB Route 101 off-ramp to Vine Street

III. Mitigation

- The US-101 Traffic Impact Study (TIS) should also discuss mitigation alternatives for any significant traffic impacts.

- The project is to mitigate for any significant impacts directly related to the project and for those impacts where the project contributes cumulatively.

- If mitigation improvements are not feasible for the project to implement, Caltrans recommends that the City agree to establish a mechanism for it to collect fair share funding contributions towards future improvements that include freeway facilities. In the absence of physical mitigation measures, Caltrans may accept fair share funding contribution towards future improvements to US-101 in the vicinity of the project site.

- A fair share funding contribution towards future improvements would not mitigate the impacts but it represents feasible and reasonable mitigation. When all resources and option for traffic mitigation are exhausted by LADOT and Caltrans, unmitigated transportation impacts must be disclosed as significant and unavoidable and a statement of overriding considerations must be prepared.

- Caltrans recognizes that measures designed to reduce vehicle demand to US-101, do represent acceptable mitigation and agrees that a conservative amount of credit should be given.

- Potential transportation mitigation that could be considered, but not limited to, the following list:

    1. SB 101 off-ramp to Gower: possible mitigation could include widening the off-ramp.
    2. NB 101 off-ramp to Gower: possible mitigation could be widening the off-ramp and installing signal.
    3. SB 101 on/off-ramp to Cahuenga: Possible mitigations could be to install signal and modify the intersection.
    4. Any improvement on US-101 Freeway Corridor Short and Mid Term Projects proposed by the Citizens Advisory Committees on July 7, 2004.
    5. Ramp metering, where not meters are installed.
    6. Signal synchronization
    7. Changeable message signs

The Silverstein Law Firm, APC
Initial Comments on and Objections to Draft EIR for Hollywood Center Project; Case No. ENV-2018-2116-EIR; SCH 2018051002

EXHIBIT 47

Fault Line Splits Hollywood

Drama Swirls Over Quake-Zone Mapping for Los Angeles Development Project

By Tamara Audi
Sept. 20, 2013 6:11 pm ET

LOS ANGELES—The Hollywood fault, a 10-mile fracture running beneath the storied neighborhood, hasn't ruptured in at least 7,000 years. But it is causing plenty of upheaval on the surface.

The Millennium Hollywood project, planned for the lot in the foreground, would see two towers rise next to the Capitol Records building, seen in background. A potential fault line is complicating development plans.
Associated Press

The fault has sparked a battle over a $664 million residential and commercial tower project proposed for a site that may—or may not—have the fissure running through it. On one side are the site's developers, who say the fault concerns are overblown and a convenient issue for their critics on the other side, local residents opposed to the project's scale.

The uncertainty over the fault's location has also revealed a disconnect between state earthquake-safety law and local enforcement of that law.

"The way the system is set up doesn't provide very rigorous oversight over whether or not you're building in a dangerous area," said Lucy Jones, senior science adviser for risk reduction for the U.S. Geological Survey, referring to flexibility in local enforcement of safety standards and a lack of government resources.

Since 1972, California law has banned building directly on top of active earthquake faults capable of rupturing the surface. Such faults could rip buildings apart as the two sides of the fault slide past each other in a quake.

But state geologists, charged with mapping thousands of miles of active faults, still haven't mapped them all—including the Hollywood fault—which has left L.A. city officials to rely on older and less-detailed maps to make decisions about development.

The city isn't waiting for the state map to push ahead with a $2.5 billion development pipeline in Hollywood meant to transform the scruffy tourist destination into an urban oasis—a plan championed by new Mayor Eric Garcetti. The Millennium Hollywood project, with two sleek towers flanking the landmark Capitol Records building, is considered the crown jewel of that effort.

"It's taken 40 years for [the state] to get down here" and map, said Luke Zamperini, spokesman for the department of building and safety. "We have our own geologists.…We get a pretty good idea of what's going on."

Developers of the towers submitted an environmental-impact report to the city based on an old city map that showed the fault nearly half a mile from their site. A more recent but less detailed map used by a different city department shows the fault about 200 feet from the site.

John Parrish, the state's geologist, told city officials the fault may run through the site itself, and said the state map would be finished by early next year. This summer, the city council approved the project anyway.

"This is a matter of thousands of lives," said Robert P. Silverstein, the lawyer for a group of Hollywood-area neighborhood associations suing the city and developers to stop the project. "This is a fight to ensure that city hall cannot throw inconvenient laws and facts to the wind."

Mr. Silverstein said the city and developers knowingly ignored other studies showing the fault could run through the site, and provided initial geological testing that was inadequate.

Developers called the allegations "specious." City officials and developers insist the project will be safe and said L.A. won't allow development over a fault.

"This is a manufactured controversy driven by our opponents who would like to stop the project," said Philip Aarons, a founding partner of Millennium Partners, the developer.

Millennium's developers will be required to conduct more testing on the site before they can get building permits—as the state map would have likely required anyway—city officials and developers noted.

Mr. Silverstein says the additional testing wouldn't have happened without neighbors publicly raising concerns about the fault.

California has so far mapped 5,000 miles of active surface faults on 553 maps across the state—or about 60% of the known active surface faults. The maps create study zones around faults. If a development falls within that zone, the developer is required by law to conduct geological testing before building. The state has about 300 more maps to produce.

Some local governments, like Los Angeles, had their own fault-zoning programs, so California "focused its limited funding assets on other population areas," said Mr. Parrish, the state geologist. He said despite the situation in L.A., he believes most local governments are properly enforcing the law.

Local governments have to balance economic development with safety and can't be expected to put development on hold, said Richard McCarthy, head of the state's Seismic Safety Commission. "If the state map's not coming out for five years, that's a problem for local government," he said.

Many communities have produced their own maps while waiting for the state map, or turned to academic or federal government experts for mapping help, but the accuracy varies, seismic safety experts said.

Local officials also have leeway in making decisions about the extent of the geological testing. And, though the state recommends setting a building back at least 50 feet from a fault, local officials can permit developers to build closer to the fault. California, with thousands of active faults, as well as experience with large, devastating quakes, is considered advanced when it comes to earthquake safety regulations and building codes, compared to other quake-prone states.

Scientists believe the Hollywood fault last ruptured between 7,000 and 9,500 years ago—barely a long weekend on the geologic time scale—and say the fault is capable of unleashing a 7.0 magnitude quake.

From his office overlooking the site of his future project, with the Hollywood sign framed through a window, Mr. Aarons said he is optimistic about moving ahead, although two lawsuits filed against the project will delay his plans to break ground next year.

On Friday, opponents suing the Millennium project called for an ethics investigation into the city's head of building and safety, which issues construction permits, over a "possibly improper relationship" with developers. Opponents said the department head's son had an internship with the law firm representing the developer at city hall.

A spokesman for the department didn't immediately respond to a request for comment.

Even if a portion of the fault is found to cross the site, he said, the size of the nearly 4½-acre site allows him flexibility to build so the towers aren't on top of the fault—if it is there at all, he said.

"The Hollywood fault is somewhere," Mr. Aarons said. "I think people will feel better when they know where it is. I think I know where it isn't."